Department of Building and Housing
Te Tari Kaupapa Whare

Determination 2009/41

The issue of Notices to Rectify in respect of three 9-year-old detached houses at 22A, 22B and 22C Clarke Road, Onehunga, 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.

1.2 The parties

1.2.1 The applicants are the owners ("the applicants") of the free-standing houses located in Onehunga, Auckland:

- 22A Clarke Road ("House A"): I Vela ("applicant A")
- 22B Clarke Road ("House B"): G and A Palmer ("applicant B")
- 22C Clarke Road ("House C"): R Taine ("applicant C")

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

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.

1.3 The Notices to Rectify

1.3.1 This determination arises from the decision of the authority to issue Notices to Rectify for three 9-year-old houses ("the houses") because it is not satisfied that the monolithic claddings comply with certain clauses of the Building Code[2] (First Schedule, Building Regulations 1992). Specifically, the notices cite contraventions of Clauses B1 "Structure", B2 "Durability", E2 "External moisture", E3 "Internal moisture", G4 "Ventilation", and H1 "Energy efficiency".

1.3.2 I note that the letters accompanying the notices refer only to Clause E2, and there are no specific items within the Notices to Rectify that relate directly to Clauses B1, E3, G4 and H1 of the Building Code. I have received no evidence relating to a dispute about these clauses and have therefore not considered them further within this determination.

1.4 In order to determine whether the decision to issue the Notices to Rectify was correct, I consider that the matter for determination is whether the claddings as installed on the houses ("the claddings") comply with Clause E2 External Moisture and Clause B2 Durability of the Building Code. By "the claddings as installed" I mean the components of the system (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.

1.5 In making my decisions, 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 6.1.

2. The building work

2.1 General

2.2 One building consent was issued to cover the construction of a group of three houses, as shown in figure 1 (page 3).

2.3 Each individual house has its own separate land and building title, which clearly defines legal boundaries to each property. Property titles for the subdivision were deposited when the houses were almost complete in July 2000. The houses have different designs, but are generally of similar construction and materials.

2.4 The houses are situated on a gently sloping site in a low wind zone in terms of NZS 3604[3]. Construction is conventional light timber frame, with concrete slabs and foundations, concrete masonry foundation walls, 30° pitch pressed metal tile roof

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

cladding and aluminium windows. Each house has timber deck areas at ground level, with spaced boards and no balustrades.

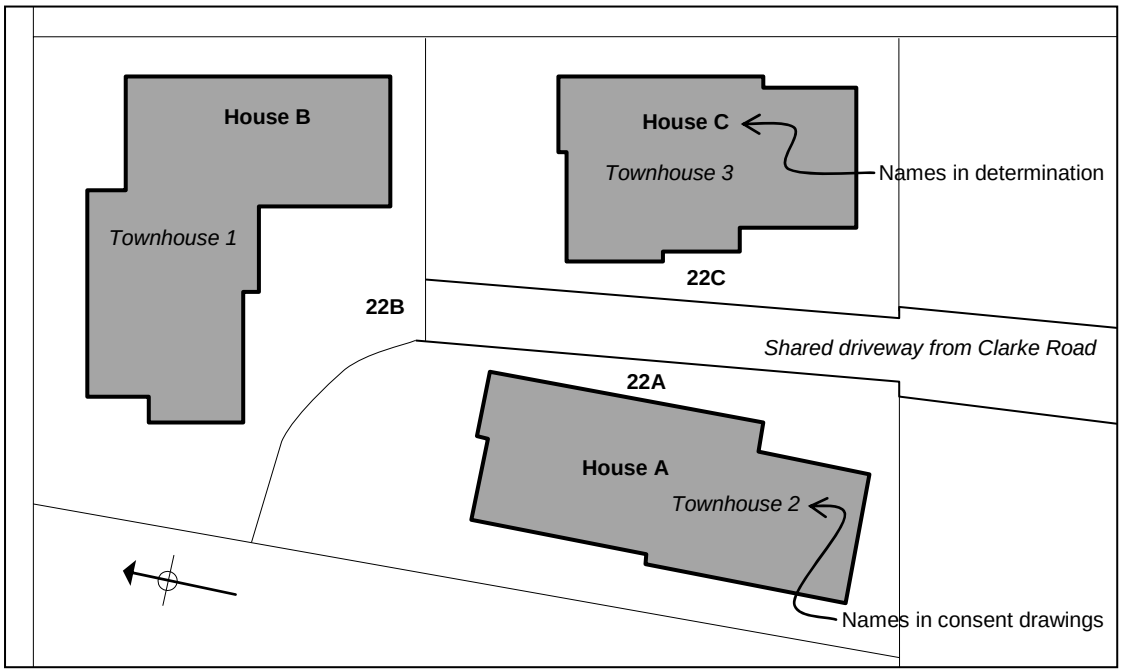

Figure 1: Site plan

2.5 Most of the walls are clad in brick veneer, with monolithic cladding to some garage walls, entrance canopies, above several windows, and to the upper walls of house C.

2.6 The expert has noted that he found no evidence of treatment on timber he was able to inspect. Given the date of construction in 2000 and the lack of other evidence, I consider that the wall framing is not treated.

2.7 House A

2.7.1 House A is a single storey building, with a fairly simple rectangular form. Part of the hipped roof projects to the north to form a dutch gable, while the garage roof to the south is set at a lower level to the main roof.

2.7.2 The eaves projections are about 700mm overall, except above a west bathroom wall and the main entry to the east. An area of flat membrane roof extends above the main entry to form an entry canopy, with monolithic-cladding to parapets to three faces.

2.7.3 The south and west garage walls and the dutch gable end wall are clad in monolithic wall cladding, with the remaining walls clad in brick veneer.

2.8 House B

2.8.1 House B is also a single storey building, with a more complex “L-shaped” form. Part of the hipped roof projects to the west to form a dutch gable, while the garage roof on the south wing is set at a lower level to the main roof.

2.8.2 The eaves projections are about 700mm overall, except above the main entry to the south. An area of flat membrane roof extends above the main entry to form a canopy in the internal corner of the "L", with monolithic cladding to two parapet wall faces.

2.8.3 The south garage wall, the dutch gable end wall, and the wall areas above three windows are clad in monolithic wall cladding, with the remaining walls clad in brick veneer.

2.9 House C

2.9.1 House C is two storeys high in part, with lower level hipped roofs forming lean-tos against the upper walls and the main entry recessed beneath the southwest corner of the upper level.

2.9.2 The eaves projections above upper level walls vary from gutter width only on the south and east to about 500mm elsewhere. The eaves projections above the lower walls are about 700mm overall.

2.9.3 The south and east garage walls of House C are clad in the same type of monolithic cladding as used in the other houses, while the upper level walls are clad in a different type of monolithic wall cladding, as outlined in paragraph 2.10.3.

2.10 The monolithic cladding systems

The flush-finished fibre-cement cladding system

2.10.1 The monolithic cladding to some of the ground floor walls of all three houses 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.

2.10.2 The coating supplier has provided an undated producer statement, which states that the coating system to the fibre cement sheets has been installed in accordance with the manufacturer's specifications and will meet the relevant requirements of the Building Code.

The EIFS[4] cladding system

2.10.3 The monolithic wall cladding to the upper walls of House C only is a proprietary EIFS system, with purpose-made flashings to windows, edges and other junctions. The 40mm polystyrene backing sheets are fixed directly to the framing and are finished with a mesh-reinforced plaster system and an acrylic paint coating system.

2.10.4 The cladding supplier has provided an undated producer statement, which identifies the proprietary EIFS system installed and states that it has been installed in accordance with the manufacturer's specifications and will meet the relevant requirements of the Building Code.

3. Background

3.1 The authority issued a building consent (No. BLD 36000069501) on 15 February 2000, under the Building Act 1991. The consent was issued to a developer to 'erect

[4] External Insulation and Finish System

2 single level townhouses and 1 two level townhouse dwellings'. I have not seen a copy of the consent.

3.2 The authority carried out various inspections during construction, including pre-line inspections of each house from May to July 2000. A final inspection of the houses was carried out on 1 September 2000, which passed.

3.3 In a letter to the developer dated 12 September 2000, the authority advised that a code compliance certificate would be issued for the building work when two items of outstanding documentation were provided.

3.4 According to the applicants, these were supplied by the end of October 2000 and the houses were sold and occupied by early 2001. I am not aware of any correspondence with the authority until the end of 2003 when applicant A approached the authority to resolve the matter.

3.5 The authority inspected the three houses on 18 December 2003 and wrote to applicant A on 5 February 2004, explaining its general concerns about the weathertightness of monolithic claddings installed without a cavity and stating that the direct-fixed monolithic wall cladding identified on the houses would require further investigation, which would involve an additional inspection.

3.6 The authority subsequently reinspected the three houses and wrote to each of the applicants on 22 April 2004 stating that it could not be satisfied that the monolithic cladding met the requirements of Clause E2 of the Building Code. The authority attached individual Notices to Rectify for each house, which included (in summary) the following defects:

Common to all three houses:

- the lack of window sill flashings
- the lack of a drainage gap at the window sill flanges
- the lack of a drainage gap or back seal at the window head flashings.

House A only:

- the lack of clearance below the cladding in one area.

House C only:

- the lack of information on the EIFS cladding installed to the upper walls
- the lack of a spreader to a downpipe discharging onto the lower roof
- the lack of ventilation, drainage and vapour dissipation to the EIFS cladding.

3.7 Correspondence between the parties continued over the next year without resolution. In a letter dated 7 June 2005 to the applicants' lawyer, the authority acknowledged that the required documentation had been received and stated that the "Code Compliance file" was 'on hold awaiting resolution of the cladding issues'. The authority added that, although the reason the certificate had not been issued in 2000

was the missing documentation, the situation regarding monolithic claddings had changed since that time and:

> To issue a Code Compliance Certificate in the knowledge that there are areas of doubt for non compliance, which we believe there is, would be negligent of Council, and in breach of the statutory obligations that the Council have under the Building Act.

3.8 I am not aware of further correspondence between the parties until the authority wrote to the applicants on 23 June 2008 requesting that they explain their intentions with respect to rectifying the issues identified in the Notices to Rectify (refer paragraph 3.6).

3.9 The applicants responded in letters dated 16 July and 3 November 2008, stating that the authority had not responded to issues previously raised by their lawyer and noting that they wished to resolve the situation.

3.10 In a letter to the applicants dated 5 November 2008, the authority attached copies of past correspondence and suggested that 'a determination is the best way to resolve the situation'.

3.11 The Department received applications for a determination from applicant A on 27 November 2008, applicant B on 1 December 2008 and applicant C on 3 December 2008.

4. The submissions

4.1 The applicants made individual submissions, each describing the background to the situation and their individual house, and each noting that there had been no signs of moisture penetration over the past 8 years. Applicant C stated:

> My neighbours and I all believe that the design of the structures, which incorporates eaves, is sound and the quality of installation is professional. Neither I nor any of my neighbours have experienced any problems with moisture or leaks through the cladding; all of us are the first and only occupants of the dwellings to date and have all been in residence for 8 years or more.

4.2 The applicants submitted copies of:

- the correspondence between the parties
- the Notices to Rectify for each house, dated, 22 April 2004
- technical data about the flush-finished fibre-cement cladding
- various certificates, producer statements and other information.

4.3 The authority submitted a CD-Rom, entitled "Property File", which contained documents pertinent to this determination, including:

- the consent drawings
- the inspection summary for the building work
- the Notices to Rectify for each house, dated, 22 April 2004.

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.

Submissions to the first draft determination

4.5 The first draft determination was issued to the parties for comment on 19 March 2009.

4.6 The authority and Applicant C accepted the draft determination.

4.7 Applicant A accepted the draft determination subject to comment noted as non-contentious. I have summarised the comments below:

- The weathertightness of the house is not affected by the performance of the canopy and a Code Compliance Certificate should be granted.
- The leak is not caused by the performance of the monolithic cladding but rather by a blocked gutter, and overflow, where the water has backed up over the fascia board and run along the soffit and into the garage.

4.8 In response to applicant A's submissions, I note:

- The canopy is part of the structure and as such is required to comply with Clauses B2 and E2 of the Building Code. I have addressed the matter of the code compliance certificate further in paragraph 8.
- While the leak appears to be due to the gutter and overflow detail, the detail is causing water to enter the framing. The expert noted that there were stains and cracks in the cladding, and that remediation, including alteration and repair of the gutter, would be necessary.

4.9 Applicant B did not accept the draft determination. I have summarised the comments below and amended the draft to take account of the comment provided.

- The sheltered, low wind site and overhanging eaves mitigates the risk of the lack of drainage gap at the sill flanges of the window.
- The same features mitigate the risks of the lack of sealed junctions between the brick veneer and the fibre cement cladding.
- Where the parapet cladding meets the columns there is no junction that can allow water to enter the entrance canopy or the house.
- House B should be designated a low rating with respect to the E2/AS1 risk matrix.
- Remediation only is required, not re-cladding.
- The authority has refused to issue a code compliance certificate 'retrospectively'. Clause B2 should be able to apply from the time of original construction.

4.10 In response to applicant B's submissions, I note:

- The expert's report notes that the window sill flanges are not in accordance with the Manufacturers Specifications but also that these details are currently performing. I have amended my comments.
- The expert's report notes that the junctions between the fibre cement cladding and the brick veneer cladding are not in accordance with the Manufacturers Specifications. I accept the expert's comments that the junctions are currently performing, however, I note that the expert does not refer to the risk being mitigated for these joints and in fact comments that remedial work at these joints would be prudent.
- I consider that the expert's report has established there is evidence that remediation work is required to ensure compliance with Clause B2.
- House B has been designated a low rating with respect to the E2/AS1 risk matrix, refer to paragraph 6.4.
- I consider that final decisions on whether compliance with B2 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, as discussed in Paragraph 7.2.2.
- The authority has the power to grant an appropriate modification to the Building Code to the effect that Clause B2.3.1 applies from the date when all the building elements were installed in the house (apart from the items that are to be rectified). I have addressed this further in paragraph 8.

Submissions to the second draft determination

4.11 The second draft determination was issued to the parties for comment on 28 April 2009.

4.12 The authority and each of the applicants accepted the second draft without comment.

5. The expert's report

5.1 As discussed 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 Architects.

5.2 The expert inspected the three houses on 19 February 2009 and furnished a report that was completed on 26 February 2009. The expert noted that the buildings appeared to accord with the consent drawings.

5.3 The expert noted that the largest area of wall cladding on each house was brick veneer, which generally appeared satisfactory. Although there were some areas where clearances from the bottom of the brick to the internal floor level were reduced, these areas are well drained and sheltered under wide soffits. The expert

could not confirm the presence of window sill back flashings, but noted that there was no evidence of associated moisture penetration.

5.4 The expert noted that, except for the items outlined in paragraph 5.8, the two types of monolithic cladding appeared to be 'well finished with a uniform surface, free from discolouration or other signs of premature aging'.

5.5 Windows

Windows in the flush-finished fibre-cement garage walls

5.5.1 The expert noted that the windows within the flush-finished fibre-cement walls were face-fixed, with metal head flashings and no sill flashings. The expert probed behind the jamb flange of one window and noted that there was no evidence of seals behind the flanges, with the windows installed directly against the backing sheets and the coating applied after installation.

Windows in the EIFS cladding to the upper walls of House C

5.5.2 The expert noted that the windows within the EIFS cladding are recessed by the thickness of the cladding and have metal head flashings. The expert removed a small section of cladding at the sill to jamb junction of a bedroom window, and noted that the junction was in accordance with the manufacturer's instructions at the time of installation, with uPVC jamb and sill flashings and sealant at the junction. The expert saw no sign of moisture penetration. I accept that the window junction exposed in House C is typical of similar locations in House C.

5.6 Moisture testing

5.6.1 The expert inspected the interiors of the houses, taking non-invasive moisture readings internally, and no evidence of moisture penetration was noted.

5.6.2 The expert took 14 invasive moisture readings at the three houses (either through the cladding or with deep probes from the inside) at areas considered at risk, and noted two very high moisture readings as follows:

- 100% at the south end of the canopy soffit framing at House A, below the security alarm and the apron flashing
- 100% at the top of the southwest corner stud at House A adjacent to a gutter leak.

5.6.3 The expert noted that the framing in the vicinity of the above readings is likely to be affected by decay, and may need replacement.

5.7 The entrance canopies to House A and House B

5.7.1 Commenting specifically on the entrance canopies, the expert noted that:

General

- The wide plastered flat tops to the parapets lack cap flashings and are cracked.

- The horizontal junctions of the parapet tops with the metal roof tiles rely on deteriorating sealant for weathertightness.
- There are no kickouts at the bottom of the apron flashings at the ends of the parapets, with the junctions reliant on sealant for weathertightness.
- There are no flashings between the parapet cladding and the support columns, and cracks are apparent at some junctions.

House A

- There are water stains apparent below the security alarm at the south end of the parapet cladding, indicating water entry through the penetration and high moisture levels are apparent in the wall framing.

House B

- There are cracks in the coating over a decorative scotia feature at the top of the parapet faces.
- The roof membrane on the canopy is ponding, and a nail head is showing through the membrane.

5.8 Commenting specifically on the two types of monolithic wall claddings installed to some of the walls of the houses, the expert noted that:

The flush-finished fibre-cement garage walls

- The junction between the brick veneer and the cladding is unsealed.
- The meter boxes and some penetrations through the cladding are unsealed.
- The gutter has leaked into the soffit and wall framing at the southwest corner of the House A garage, with water dripping from the soffit and very high moisture levels recorded in the wall framing. The expert noted that the gutter/fascia system was fitted to all three houses, and alteration and repair would be required.

The EIFS cladding to upper walls of House C only

- there are some cracks in the coating at window reveals
- there are also cracks above the living room roof on the west elevation, which require further investigation
- the cladding appears to stop at the underside of the fascia gutters to the south and east elevations, where there is no shelter from eaves projections.

5.9 The expert made the following additional comments on the flush-finished fibre-cement garage walls to the houses:

- Although the windows lack jamb seals and clearance above the head flashings, and there are no drainage gaps provided beneath the sill flanges of the

windows, the windows are directly beneath wide soffits and are unlikely to be exposed to moisture penetration.

- Although there are no control joints installed, the maximum wall lengths (at 6m) are just beyond the 5.4m limit specified by the manufacturer, the 6m walls are unlikely to suffer thermal stress, and there are no signs of cracking as a result after more than eight years.

- Although the apron flashings at the junctions of the garage roofs of House A and House B lack kickouts at the bottom, these areas are sheltered beneath the wide soffits of the upper roof and are unlikely to be exposed to moisture.

- In House A, the bottom of the cladding has been trimmed to provide about 50mm clearance from the concrete driveway and this area is well-drained and sheltered by a deep soffit.

5.10 A copy of the expert's report was provided to the parties on 3 March 2009.

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 Solutions[5], 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.

6.2 Evaluation of the cladding systems

6.2.1 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 determinations[6] (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.

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

6.2.2 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.

6.2.3 Each 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 claddings 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.

6.3 Weathertightness risk: House A

6.3.1 House A has the following environmental and design features which influence its weathertightness risk profile:

Features tending to increase risk

- the building has two different types of wall cladding
- the walls have some monolithic cladding fixed directly to the framing
- the external wall framing is not treated to a level effective in resisting decay if it absorbs and retains moisture.

Features tending to decrease risk

- the building is one storey high
- the building is built in a low wind zone
- the building is fairly simple in shape, with limited complex junctions
- eaves and verge projections are more than 600mm above most walls
- the building has a timber deck area only at ground level.

6.3.2 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.3.1 show that all elevations of House A 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 areas to this building would not require a drained cavity.

6.4 Weathertightness risk: House B

6.4.1 House B has the following environmental and design features which influence its weathertightness risk profile:

Features tending to increase risk

- the walls have some monolithic cladding fixed directly to the framing

- the building has two different types of wall cladding
- the building is complex in shape, with some complex junctions
- the external wall framing is not treated to a level effective in resisting decay if it absorbs and retains moisture.

Features tending to decrease risk

- the building is one storey high
- the building is built in a low wind zone
- eaves and verge projections are more than 600mm above most walls
- the building has a timber deck area only at ground level.

6.4.2 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.4.1 show that all elevations of House B 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 areas to this building would not require a drained cavity.

6.5 Weathertightness risk: House C

6.5.1 House C has the following environmental and design features which influence its weathertightness risk profile:

Features tending to increase risk

- the building is two storeys high
- the building is fairly complex in shape, with some complex junctions
- the building has three different types of wall cladding
- the walls have monolithic cladding fixed directly to the framing
- there are no eaves or verge projections above some walls
- the external wall framing is not treated to a level effective in resisting decay if it absorbs and retains moisture.

Features tending to decrease risk

- the building is built in a low wind zone
- eaves and verge projections are more than 600mm above most lower walls
- the building has a timber deck area only at ground level.

6.5.2 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.5.1 show that all elevations of House C, when taken as a whole, demonstrate a high weathertightness risk rating. However, when only considering

the upper level elevations walls clad with EIFS, these elevations demonstrate a medium weathertightness risk rating. The medium weathertightness risk rating would now require the incorporation of a drained cavity. However, this was not a requirement of E2/AS1 at the time of construction.

6.6 Weathertightness performance: the monolithic wall claddings

6.6.1 Generally the monolithic claddings appear to have been installed in accordance with good trade practice. However, taking account of the expert's comments in paragraph 5.8, I conclude that remedial work is necessary in respect of the following:

The flush-finished fibre-cement garage walls

- the unsealed junctions between the brick veneer and the cladding
- the unsealed meter boxes and some penetrations through the cladding
- the severe water penetration and likely timber damage to the framing at the southwest corner of the House A garage that was from the gutter/fascia system (of which the system is the same on all three houses as discussed in paragraph 5.8).

The EIFS cladding to upper walls of House C only

- the cracks in the coating at the window reveals
- the cracks above the living room roof on the west elevation, which require further investigation
- the top of the cladding at the underside of the fascia gutters to the south and east elevations, which requires further investigation.

6.6.2 I note the expert's comments in paragraph 5.9, and accept that these areas are adequate in the particular circumstances.

6.6.3 In the case of House C, notwithstanding the fact that the EIFS backing sheets are fixed directly to the timber framing, thus inhibiting drainage and ventilation behind the cladding sheets, I have noted certain compensating factors that assist the performance of the cladding in this particular case:

- The claddings generally appear to be installed according to good trade practice.
- There is no evidence of moisture penetration after more than eight years.

These factors can assist House C to comply with the weathertightness and durability provisions of the Building Code.

6.7 Weathertightness performance: the entrance canopies

6.7.1 Although the monolithic claddings to the walls of the houses appear to have been installed in accordance with good trade practice, it is clear from the expert's report that the entrance canopies installed on House A and House B are unsatisfactory, for House A in terms of its weathertightness and durability, and for House B in terms of

its durability. Considerable work is required to make the canopies code-compliant, which in the case of House A may need to include replacement of decayed timber and associated cladding.

6.7.2 Taking into account the expert's report and comments as outlined in paragraph 5.7, I conclude that the following areas in the canopies require rectification with respect to weathertightness:

- the flat plastered tops of the parapets
- the junctions of the parapet tops with the metal roof tiles
- the bottom of the apron flashings
- the cracks in the parapet cladding
- the junctions of the parapet cladding with the columns
- the severe moisture penetration into the canopy framing of House A.

6.7.3 Further investigation is necessary, including the systematic survey of all risk locations, to determine the full extent of the repairs required to the canopies.

7. Conclusions

7.1 The monolithic wall claddings (excluding the entrance canopies)

7.1.1 I consider the expert's report establishes that the current performance of the monolithic wall claddings to House B and House C is adequate because it is currently preventing water penetration through the cladding and therefore the cladding to House B and House C complies with Clause E2 of the Code.

7.1.2 However the current performance of the monolithic wall claddings to House A is not adequate because it is currently allowing water penetration through the cladding. Consequently, I am satisfied that House A does not comply with Clause E2 of the Building Code.

7.1.3 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 Houses A, B and C are likely to allow the ingress of moisture in the future I conclude the building work does not comply with the durability requirements of Clause B2.

7.1.4 Because the faults identified with the cladding systems occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.6.1 will result in the wall claddings (excluding the entrance canopies) being brought into compliance with Clause B2.

7.1.5 It is emphasised that each determination is conducted on a case-by-case basis. Accordingly, the fact that a particular cladding system has been established as being

code compliant in relation to a particular building does not necessarily mean that the same cladding system will be code compliant in another situation.

7.1.6 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).

7.2 The entrance canopies to House A and House B

7.2.1 The entrance canopies have not been installed according to good trade practice. I consider the expert's report establishes the entrance canopies demonstrate the key defects listed in paragraph 6.7.2, and I am therefore satisfied that the canopies do not comply with Clause B2 of the Building Code. I also consider the expert's report establishes that the current performance of the entrance canopy to House A is not adequate because there is evidence of moisture penetration into the canopy, and therefore the canopy does not comply with Clause E2 of the Building Code.

7.2.2 With respect to the entrance canopies, I consider that the defects found in the canopies mean that the 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 comment and approval.

7.3 The Notices to Rectify

7.3.1 The following table summarises conclusions on the items listed within the Notices to Rectify dated 22 April 2004 (refer paragraph 3.6), referring to related paragraphs within this determination:

Defects identified in the Notices to Rectify	My conclusion about the remedial work required	Paragraph reference
Common to all three houses		
Lack of flashings to the window sills	Adequate in the circumstances and not a manufacturer's requirement at the time	5.5.1
Lack drainage gaps to the window sills	Adequate in the circumstances	5.9
Lack of drainage gap or back seal at the window head flashings	Adequate in the circumstances	5.9
House A only		
Lack of clearance below the cladding in one area	The bottom of the cladding has since been trimmed and the clearance provided is adequate in the circumstances	5.9

Defects identified in the Notices to Rectify	My conclusion about the remedial work required	Paragraph reference
House C only		
Lack of information on EIFS cladding to upper walls	The EIFS cladding has been identified as a common proprietary product, and the supplier has provided a producer statement.	2.10.4
Lack of spreader to downpipes from the upper roof	The expert reports that a spreader has since been fitted.	
Lack of ventilation, drainage and vapour dissipation to the cladding	The direct-fixing of the EIFS cladding is adequate in the circumstances.	6.6.3

7.3.2 As I am satisfied that the building work does not comply with the Building Code, I am satisfied that the authority made an appropriate decision to issue the Notices to Rectify.

7.3.3 However, the notices did not include significant defects that have been identified by the expert, and contained errors including:

- The notices incorrectly cited breaches of Clauses B1, E3, G4 and H1.
- With respect to the EIFS cladding, the notice for House C sought specific remedies in terms of the Acceptable Solutions without having first established that the work did not comply with the Building Code.

8. What is to be done now?

The notice to fix

8.1 Under the Act, a notice to fix (the equivalent of a Notice to Rectify under the previous Act) can require the owner to bring the house into compliance with the Building Code, but in previous determinations I have formed the view that a notice to fix cannot specify how compliance is to be achieved.

8.2 The authority should withdraw the Notices to Rectify. Notices to fix are to be issued in their place, which require the owners to bring the houses into compliance with the Building Code. The notices to fix may identify the matters listed in paragraphs 6.6.1 and 6.7.3 that require investigation and/or remedial work. The notices to fix should refer to any further defects that might be discovered in the course of investigation and rectification. It is not for the notices to stipulate directly how the defects are to be remedied and the houses brought to compliance with the Building Code. 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.

8.3 In response to the notices to fix, the owners should produce a response 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.

The code compliance certificate

8.4 Once the matters set out in the notices to fix have been rectified to its satisfaction, the authority may issue a code compliance certificate. Consideration of a code compliance certificate will raise the matter of when all the elements of the building complied with Clause B2, given the age of the building work.

8.5 The authority has the power to grant an appropriate modification to the Building Code to the effect that Clause B2.3.1 applies from the date when all the building elements were installed in the house, apart from the items that are to be rectified as described in this determination. A date from 12 September 2000 would appear to be appropriate (refer paragraph 3.3).

Splitting the building consent

8.6 Houses A, B and C are completely separate buildings that have been constructed under a single building consent. This means that a single code compliance certificate is issued in respect of all three houses under the building consent.

8.7 I note that in Determination 2008/70 I recommended the applicant request an amendment of the building consent and that, on receipt of a written request from the applicant, the authority could modify the building consent to create separate building consents in respect of each individual building. The owners of each building can then apply for a final code compliance certificate in respect of their building.

9. The decision

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

(a) the cladding as installed on House A does not comply with Clauses B2 and E2 of the Building Code

(b) the cladding as installed on Houses B and C do not comply with Clause B2 of the Building Code

(c) the authority is to withdraw the Notices to Rectify, dated 22 April 2004, and issue notices to fix to take into account of the findings of this determination.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 9 June 2009.

John Gardiner
Manager Determinations.