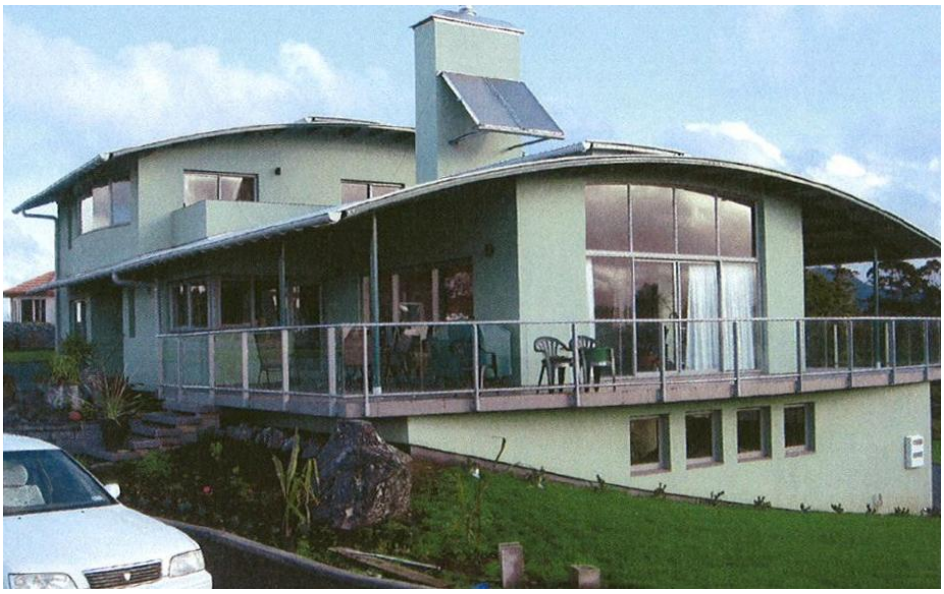
Determination 2007/123

Determination regarding a code compliance certificate for a house at 99 Koutunui Road, Athenree Heights, Waihi Beach



1. The matter 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 Mr and Mrs Ryan ("the applicants"), and the other party is the Western Bay of Plenty District Council ("the territorial authority").

1.2 The matter for determination is whether the territorial authority's decision to decline to issue a code compliance certificate for a 1-year old house is correct. The refusal arose because the building work had been undertaken under the supervision of Bay Building Certifiers ("the building certifier") which was duly registered as a building

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

certifier under the former Building Act 1991, but which lost its approval as a building certifier before it had issued a code compliance certificate for the building work. The territorial authority considers that the appropriate certificate to be issued is a certificate of acceptance, as it cannot be satisfied that the building work as a whole complies with the Building Code[2] (First Schedule, Building Regulations 1992).

1.3 In order to determine that matter, I must address the following questions:

a) Is there sufficient evidence to establish whether the building work as a whole complies with the Building Code?

i) If yes, a code compliance certificate can be issued.

b) If not, are there sufficient grounds to conclude that, once any outstanding items are repaired and inspected, a code compliance certificate can be issued?

i) If yes, a code compliance certificate can be issued in due course.

ii) If no, are there sufficient grounds for a certificate of acceptance to be issued?

I address question a) in paragraph 5.1 and question b) in paragraph 10.

1.4 In making my decision, I have considered the submissions of the parties, the report of the independent expert ("the expert") commissioned by the Department to advise on this dispute (refer paragraph 6.1), and the other evidence in this matter.

1.5 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.

2. The building

2.1 The building work consists of a large detached house situated on a sloping site, which is in a high wind zone for the purposes of NZS 3604[3]. The house is 3-storey in part and the construction is specifically engineered, with concrete foundations, concrete slabs to all levels, concrete block walls, and aluminium windows. The curved profiled metal roofs are at two levels, with 1m deep eaves and verge projections.

2.2 A large deck, with metal and glass balustrades wraps around the north and part of the west and east sides of the middle level, with a similar deck extending to the north from the upper level. Both decks sit above enclosed spaces below.

2.3 The exterior walls of the house are similar to those used in the "Sto concrete block" proprietary wall system. In the case of this house, the walls are 200mm concrete masonry, with a "Polyclad/Fosroc" system applied to the exterior faces, which consists of a rough-textured plaster applied over 40mm polystyrene sheets. The plaster is finished with a flexible acrylic paint system. The concrete blocks

[2] The Building Code is available from the Department's website at www.dbh.govt.nz.
[3] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

surrounding windows and doors incorporate rebates at the openings. The interior faces of the masonry walls are lined with plasterboard fixed over timber battens.

3. Background

3.1 The territorial authority issued a building consent (No. 70688) on 28 April 2004, based on a building certificate issued by the building certifier. I have not seen copies of the building consent or building certificate. It appears that the window head detail in the consent drawing was marked in red by the building certifier as requiring head flashings (refer paragraphs 3.6 and 3.9). The building's construction took place between February 2005 and June 2006.

3.2 The building certifier carried out a total of 4 inspections during construction. This included an inspection of the "footing" on 10 March 2005, the "underfloor" on 5 April 2005, and its last inspection ("block fill") on 7 June 2005.

3.3 The building certifier lost its approval to operate as a certifier on 30 June 2005.

3.4 It appears the remaining inspections were carried out by Bay Inspections Ltd (refer paragraph 3.5), which carried out 14 inspections. Its first inspection (a "slab" inspection) was carried out on 4 July 2005. It appears that the architect and engineer for the project each made inspections during construction.

3.5 In a pro-forma letter to the applicants, dated 20 June 2006, the territorial authority advised that when the building certifier ceased operating an agreement had been made between Bay Inspections Ltd ("the regulatory agent") and the territorial authority, to complete outstanding inspections on the building certifier's projects and make recommendations regarding the issuing of code compliance certificates. The territorial authority went on to explain its need to be satisfied as to the compliance of such projects and the liability for building work imposed by the Act, noting that the

> …lack of satisfactory inspection detail puts Council in the position where it is unable at this time to accept liability for these deficient projects or issue Code Compliance Certificates.

The territorial authority explained that further inspections were therefore required to determine the code compliance of the building in order to determine future options.

3.6 The territorial authority carried out an assessment of the house on 5 December 2006 and, in a letter to the applicants dated 20 December 2006, raised the following items:

1. No graspable hand rail on exterior stair to upper floor deck.
2. There is no evidence of head flashings over the exterior joinery even though they were marked in red on the plans or no 'drip' formed at the exterior of the plaster over the joinery rebates.
3. The seismic restraint straps on the hot water cylinder are not tight enough and the cylinder is not hard up against the wall at the top because of pipes between it and the wall at the bottom . . .
4. Are the fixings securing the straps to the wall sufficient for this size of cylinder?

3.7 The territorial authority also said, on completion of outstanding matters, that:

> ...Council will not issue a Code Compliance Certificate for the building. That being the case, Section 91 of the [Act] requires that you apply for a Certificate of Acceptance...
>
> If Council then decides it is able to issue a Certificate of Acceptance it will only cover those elements of the building that can be readily inspected and compliance with the Building Code determined.

3.8 In a letter to the territorial authority dated 31 March 2007, the builder confirmed that "protecto" flashing tape had been used around the rebates of all openings, which had been approved as satisfactory during a site inspection carried out by the regulatory agent on 3 November 2005.

3.9 In a letter to the architect dated 24 April 2007, the regulatory agent noted that the windows had been conventionally installed into the concrete block rebates and, while lacking drip edges at the lintel, the windows were well protected by the recessed rebates in the blockwork. On comparing the flashings noted in red on the consent drawings (refer paragraph 3.1) with the as-built window details, the regulatory agent noted:

> I would expect that, had this detail been supplied at the time of consent, the endorsement relating to the flashing would not have been, and still is not, deemed necessary.

3.10 According to the architect, three of the outstanding items noted in paragraph 3.6 had been satisfactorily completed by May 2007, with the only remaining matter of the requirement for window head flashings considered to be unnecessary. I have not had confirmation of this from the territorial authority and will assume it is correct unless advised to the contrary.

3.11 The Department received an application for a determination on 28 May 2007.

4. The submissions

4.1 Within the application, the applicants noted that the matters for determination were the "need for head flashings and drips" and the territorial authority's refusal to issue a code compliance certificate for the house. In the statement accompanying the application, the architect outlined the history of the project and described the construction and window detailing used in the house, concluding:

> We believe that the building complies with the building code and the WBOPDC should issue a CCC on reasonable grounds that the building complies with the building code.

4.2 The applicants forwarded copies of:

- the consent drawings
- the as-built window head detail
- the "Sto concrete block" window detail dated February 2006
- the building certifier's inspection summary
- the correspondence from the territorial authority

- the letter from the regulatory agent dated 24 April 2007
- various other details and statements.

4.3 The territorial authority made no submission.

4.4 Copies of the applicants' submission and other evidence were provided to the other parties, who made no submissions in response.

5. Grounds for the establishment of code compliance

5.1 In order for me to form a view as to code compliance, I need to establish what evidence is available and what can be obtained considering that the house is completed and some of the building elements are not able to be cost effectively inspected.

5.2 In this case the evidence consists of the summary of inspections carried out by the building certifier and by the regulatory agent, the final inspection by the territorial authority, the statements by the architect and the builder, as well as the report of the expert I commissioned to provide additional evidence.

5.3 The territorial authority believes that any decision it makes with respect to compliance of the house is limited by what items it is able to inspect. I first need to decide if I can rely on those inspections that were undertaken by the building certifier and by the regulatory agent, particularly in regard to inaccessible building components.

5.4 In the absence of any evidence to the contrary, I take the view that I am entitled to rely on the inspections undertaken by the building certifier and by the regulatory agent. However, before deciding whether or not to rely on their inspection reports, I consider it important to look for evidence that corroborates it. In this particular case, corroboration comes from the inspections carried out by the architect and the engineer for the project (refer paragraph 3.4).

5.5 I note that the inspection summary indicates that 18 inspections were required for the project, and 18 inspections were carried out, although the final inspection was not undertaken.

5.6 I also note that the window head details are the only remaining issue to be resolved for the house, and the territorial authority's requirement for head flashings is disputed by the architect. The following documentation allows me to form a view as to the compliance of the windows:

- The architect's submitted details
- The regulatory agent statement regarding the window details
- The expert's inspection of the visible components of the window installation

5.7 In addition to the matter outlined in paragraph 5.6, I find that the following documentation allows me to form a view as to the code compliance of the building work as a whole:

- The summary of inspections carried out by the building certifier and by the regulatory agent which indicates satisfactory inspections of the inaccessible components
- The additional inspections undertaken by the architect and the engineer
- The territorial authority's additional final inspection

6. The expert's report

6.1 As mentioned 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 Building Surveyors.

6.2 The expert visited the house on 22 June 2007, and furnished a report that was completed on 7 July 2007. The expert noted that the purpose of the visit was limited to the assessment of the window installation. The expert noted that the windows appeared to be installed in accordance with the as-built detail supplied by the architect.

6.3 The expert noted that the inspection was visual only, as no invasive investigation was possible due to the nature of the concrete masonry construction. The expert took interior non-invasive moisture readings beneath and beside all windows and doors, and no evidence of moisture penetration was noted.

6.4 The expert made the following comments on the window installation:

- Windows are installed into the rebates in the concrete blocks, with the joinery recessed 135mm back from the face of the walls
- Most windows are well sheltered beneath deep eaves or decks
- Windows beneath the central part of the end walls are less sheltered by the deep (but higher level) verges
- Several windows have recessed polystyrene panels above, with metal head flashings
- Most windows heads lack flashings, with sealant used at the heads and jambs

6.5 The expert noted that, while the window installation generally accorded with the Sto concrete block installation detail of February 2006, drainage gaps were not provided below the window sill flanges.

6.6 The expert also noted that the windows do not include a drip edge at the edge of the head reveal of the wall as shown in the Sto detail. (I note that the Sto detail shows the drip edge as optional). The expert considered that the provision of drip edges would have been a sound practice to give added protection.

6.7 The expert concluded that head flashings were not necessary for the windows in this house, "given the depth of the recess and ample soffit protection".

6.8 A copy of the expert's report was provided to each of the parties on 11 July 2007.

6.9 On behalf of the applicant, the architect responded to the expert's report in a letter to the Department dated 20 July 2007, which attached a photograph of the drainage holes below what appears to be the sliding door sill and a sketch of the window sill detail. The architect discussed the background, the house construction and the window installation, including the following points:

- The only matter raised by the territorial authority was the window head
- The window sill is a new issue not previously in contention
- The windows and doors incorporate drainage holes at the bottom of the sill section, which sits above the sloping sill tile to allow moisture to drain away at the gap between the sill section and the sill tile

6.10 I have considered the architect's comments in the preparation of this determination, and I address the matter of the sill drainage in paragraph 8.3.2.

7. The draft determination

7.1 I forwarded copies of a draft determination to the parties on 21 August 2007 and the territorial authority accepted the draft without comment.

7.2 The applicants wrote to the Department on 31 August 2007 noting that they accepted the draft "in the main' but also made the following comments, which I have summarized:

- The applicants disputed that remedial work is required regarding the windows and an invasive inspection indicated that moisture was not entering the building at the window locations.
- While agreeing that the window sills could be drained through inserted drainage holes, the existing applied sealant would not impede such drainage.
- The gap between the window sill flanges and the tile sill could be opened up by removing a small section of the sealant bead at these locations.
- The applicants contended that the building is code-compliant and the exterior walls prevent the penetration of moisture.

7.3 I have noted the applicants' submission and have commented as I deem to be appropriate.

8. Evaluation for code compliance

8.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solution[4], in this case, E2/AS1. However, E2/AS1 does not include the type of the construction used in this house, which must therefore be assessed as an alternative solution.

8.1.1 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, and the window installation. The Department and its antecedent, the Building Industry Authority, have also described weathertightness risk factors in previous determinations[5] (for example, Determination 2004/1) relating to cladding and some of these factors are relevant for evaluating the window installation to this house.

8.1.2 The consequences of a building element 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 window details and their installation to be carefully carried out.

8.2 Weathertightness risk: windows

8.2.1 In relation to these characteristics I find that the windows to this house:

- are installed in a high wind zone
- are in a house that is a maximum of three-storeys high
- are recessed within concrete masonry walls
- are generally protected by eaves projections of more than 1m.

8.2.2 When assessed according to the weathertightness features listed in paragraph 8.2.1, I consider that the majority of the windows and doors in this house demonstrate a low weathertightness risk, with the few remaining (more exposed) windows having a moderate risk.

8.3 Weathertightness performance: windows

8.3.1 Generally the windows appear to have been installed in accordance with good trade practice. However, I accept the expert's opinion that remedial work is necessary in respect of the lack of a drainage gap beneath the window sill sections.

8.3.2 I note the architect's comments in paragraph 6.9 with regard to the provision of holes beneath the window sill section, and accept that this is a satisfactory method of providing drainage from the metal windows. However, I also note that the window photograph in the expert's report shows that the gap between the outer face of the sill

[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.

section and the sloping sill tile appears to have been filled with sealant, so preventing the moisture draining from the sill holes from dissipating to the outside.

8.3.3 I note the expert's comments in paragraph 6.6 with regard to the lack of a drip edge to the lintels, and I accept that the provision of drip edges is generally prudent for protection against the risk of moisture migrating across the underside of the reveal to the window head. However, with regard to the particular window heads in this house, I consider that the following factors compensate for the lack of drip edges:

- The Sto window details note that a drip edge is optional
- The window heads are set back from the wall face by 135mm
- Most windows are sheltered beneath generous roof overhangs or projections
- The plaster to the walls and reveals is rough textured, which will discourage water from clinging to the underside of the plastered reveal and moving across to the window head

I therefore consider that, due to the particular characteristics of this building, the window heads are adequate, without the retrofitting of drip edges.

9. Discussion

9.1 Taking into account the expert's report, I am satisfied that the current performance of the windows and doors is adequate because they are preventing water penetration into the building at present. Consequently, I am satisfied that the window installation complies with clause E2 of the Building Code.

9.2 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 fault in the window installation is likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.

9.3 Because the fault identified with the window installation occurs in discrete areas, I am able to conclude that satisfactory rectification of the item outlined in paragraph 8.3.1 will result in the building remaining weathertight and in compliance with clauses B2 and E2. In this respect, I have noted the applicant's response to the draft determination and I am still of the opinion that such remedial work is required to ensure the future code-compliance of the building.

9.4 I emphasise that each determination is conducted on a case-by-case basis. Accordingly, the fact that a particular window system has been established as being code compliant in relation to a particular building does not necessarily mean that the same system will be code compliant in another situation.

9.5 Effective maintenance of claddings (including windows) is important to ensure ongoing compliance with clauses B2 and E2 of the Building Code and is the responsibility of the building owner. Clause B2.3.1 of the Building Code requires

that the cladding be subject to" normal maintenance", however that term is not defined in the Act.

9.6 I take the view that normal maintenance is that work generally recognised as necessary to achieve the expected durability for a given building element. With respect to the cladding, the extent and nature of the maintenance will depend on the material, or system, its geographical location and level of exposure. Following regular inspection, normal maintenance tasks should include but not be limited to:

- where applicable, following manufacturers' maintenance recommendations
- washing down surfaces, particularly those subject to wind-driven salt spray
- re-coating protective finishes
- replacing sealant, seals and gaskets in joints.

10. The appropriate certificate to be issued

10.1 Having found that the window installation can be brought into compliance with the Building Code, I must now determine whether the territorial authority should issue either a code compliance certificate or a certificate of acceptance once the item outlined in paragraph 8.3.1 is satisfactorily rectified.

10.2 Section 437 of the Act provides for the issue of a certificate of acceptance where a building certifier is unable or refuses to issue either a building certificate under section 56 of the former Act, or a code compliance certificate under section 95 of the current Act. In such a situation, a territorial authority may, on receipt of the appropriate application, issue a certificate of acceptance or a code compliance certificate. In this instance the latter provision applies.

10.3 In the case of this house, the building certifier's inspection records, the additional inspections undertaken by the architect and the engineer, the territorial authority's final inspection, the expert's assessment of the window installation and the other evidence have provided grounds for me to form a view that the building work as a whole, including the inaccessible components, complies with the building code. I therefore consider that, once the outstanding matters are satisfactorily resolved, the territorial authority will be in a position to issue a code compliance certificate for the building.

11. The Decision

11.1 In accordance with section 188 of the Building Act 2004, I determine that while the building work complies with clause E2 of the Building Code, it does not comply with clause B2. Accordingly I confirm the territorial authority's decision to refuse to issue a code compliance certificate.

11.2 I note that the territorial authority has not issued a notice to fix as required by section 164. A notice to fix should be issued that requires the applicants to bring the building work into compliance with the Building Code, identifying the defect

outlined in paragraph 8.3.1. If any remaining outstanding matters exist (refer paragraphs 3.6 and 3.10) they should be included as necessary.

11.3 The territorial authority shall issue a Code Compliance Certificate once the items listed in the notice to fix have been fixed to its satisfaction.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 24 October 2007.

John Gardiner
Manager Determinations