

Determination 2009/93

Determination regarding the code compliance of 10-year-old alterations to a house at 10 Gladstone Road, Waihi



1. The matters to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicant is the owner, 777 Holdings Ltd represented by G Wallis (“the applicant”) and the other party is the Hauraki District 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 for a 10-year-old alteration to a house because it was not satisfied that the building work complied with certain clauses of the Building Code (First Schedule, Building Regulations 1992).

¹ The Building Act, Building Code, Compliance documents, past determinations and guidance documents issued by the Department are all available at www.dbh.govt.nz or by contacting the Department on 0800 242 243

1.3 The matter for determination² is whether the authority was correct to decline to issue a code compliance certificate. In making that decision I have considered the following matters:

1.3.1 Matter 1: The external envelope

Whether the external envelope of the altered house complies with Clause B2 – Durability and Clause E2 – External Moisture of the Building Code. The “external envelope” includes the weatherboard wall cladding as installed, the exterior joinery and the roof cladding, their configuration, components and junctions with other building elements. By “the weatherboard cladding as installed” I mean the components of the systems (such as the boards, the timber facings, the flashings and the paint 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 the alterations comply with the remaining relevant clauses of the Building Code. (I consider this matter in paragraph 8.)

1.3.3 Matter 3: The durability considerations

Whether the elements that make up the alterations comply with Building Code Clause B2 Durability, taking into account the age of the building work. (I consider this matter in paragraph 9.)

1.4 In making my decision, I have considered the applicant’s submission, 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 alterations to an existing house. The alterations include a lean-to addition, with associated alterations, and new claddings. The house is situated on a gently sloping site which is in a moderate wind zone for the purposes of NZS 3604³.

2.2 The original house

2.2.1 The original house was built prior to 1914, and was an L-shaped single-storey building constructed in a manner traditional for houses of that period, with light timber framing, suspended timber-framed floors, weatherboard claddings, double-hung timber windows and a 20° pitch corrugated steel hipped roof with eaves of about 300mm.

2.2.2 A lean-to formed an infill to the internal corner of the L-shape and accommodated the kitchen and bathroom, extending as a porch beyond the northeast corner of the original house. In common with houses of that period, part of the lean-to appears to have been added at some stage after the original construction of the house.

² In terms of sections 177(a), 177(b)(i) of the Act. In this determination, unless otherwise stated, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

2.3 The alterations

- 2.3.1 The original lean-to has been demolished and replaced (with plan dimensions unchanged), to provide a new bathroom, laundry and master bedroom. Associated work included the installation of a new kitchen in the original house.
- 2.3.2 Part of the original timber-framed floor to the lean-to is retained, with a concrete slab and foundation installed to the area beyond the east wall of the original house. The lean-to roof is 3° pitch corrugated steel, with no eaves or verge projections. A lean-to bullnose verandah has been attached to the south and west walls of the original house, with a timber deck added to part of the north elevation.
- 2.3.3 The windows and doors are timber to match the original house and are generally re-used or second-hand, with small panes of glass and timber mullions and timber sills. Timber facings and scribes are used, with metal flashings installed over the head facing and the jamb facings continuing past the sills. A small bay window to the north has a timber shingle roof.
- 2.3.4 New timber weatherboards were installed to the lean-to and to the original house. The bevel-backed weatherboards are rough-sawn 250 x 25mm boards fixed through the building wrap directly to the framing timbers. Timber facings and scribes are used at corners. The expert has described the timber as ‘tanalised pine’, which I take to be equivalent to H3 treated.
- 2.4 The expert noted that he was unable to inspect any of the concealed timber framing, and the drawings describe the framing timber as “H1 MG No1 KD”. However, given the date of construction of the lean-to in 1999 and the lack of other evidence, I am unable to determine the particular level and type of treatment described as H1 at the time the timber was treated. I therefore consider that the wall framing is unlikely to be treated to a level that will provide resistance to fungal decay if the framing becomes wet and is unable to dry.

3. Background

- 3.1 The authority issued a building consent for the alterations (No. 11083) to the original owner in December 1998, under the Building Act 1991. I have not seen a copy of the building consent. I note that the consent drawings included no details on the construction of the verandah, which was described as ‘future verandah subject to resource consent’.
- 3.2 The authority carried out the following inspections during construction:
- concrete slab on 7 January 1999 (which passed)
 - preline plumbing on 29 January 1999 (which passed)
 - preline bracing and insulation on 3 March 1999 (which passed)
 - preline roof cladding on 7 April 1999 (which passed)
 - preline building on 15 April 1999 (which passed).

3.3 The authority carried out a final inspection on 14 September 2000, which recorded the building work as incomplete and noted:

1. Fit head flashings over new windows and doors.
2. Fit approved soakers over all butted joints in weatherboards.
3. Provide all necessary flashings to the roof over the front and side verandahs.

(Based on the description of item 3, the verandah appears to have been constructed by that stage, although it is unclear when the wall cladding on the original house was replaced.)

3.4 No further inspections were carried out until the applicant was considering purchasing the property and, with the agreement of the original owner, arranged for the authority to carry out a final inspection of the house.

3.5 The authority carried out a final inspection on 7 November 2008, and issued two site instruction notices. One of the instructions listed 13 items requiring completion or remedial work and the other noted:

As there are areas where moisture ingress is occurring Hauraki District Council will not be able to ever issue Code Compliance Certificate for the following reasons:

- a) Age of consent
- b) Not meeting B2/AS1
- c) Not meeting E2/AS1 External moisture
- d) Not meeting E3/AS1 Internal moisture.

3.6 The applicant subsequently purchased the house in March 2009, and removed linings to investigate whether the lean-to was leaking. According to the applicant, there was no evidence of moisture revealed and the authority was approached in an attempt to resolve the outstanding issues. It appears that the authority refused to discuss the matter and referred the applicant to the Department.

3.7 The Department received an application for a determination on 26 June 2009.

4. The submissions

4.1 The applicant provided a submission in the form of a letter to the Department dated 22 June 2009 that outlined the background to the situation and stated that they believed that the house, in its current condition, complied with the building code requirements that applied at the time of construction.

4.2 The applicants forwarded copies of:

- the consent drawings
- the authority's inspection records.

4.3 The authority made a submission in the form of an email to the Department dated 3 July 2009, which confirmed that the concerns were as identified in the site instruction notices dated 7 November 2008. The authority added that it was most

concerned about the lack of window head flashings and the unpainted timber and stated that it:

...cannot be reasonably assured that durability issues have not been compromised and is therefore not prepared to issue a CCC.

4.4 The authority forwarded copies of:

- the consent drawings
- the inspection records of the final inspection.

4.5 A draft determination was issued to the parties on 17 September. The draft was issued for comment and for the parties to agree a date when the alterations or parts of them complied with Building Code Clause B2 Durability.

4.6 The parties accepted the draft without comment and agreed that compliance with B2 Durability was achieved on 15 April 1999.

5. The expert's report

5.1 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. The expert inspected the house on 22 July 2009 and provided a report dated 24 July 2009.

5.2 The expert noted that, at the time of his inspection, the applicant (who is also a builder) was working to complete various areas on the exterior and the interior of the house. The expert noted that the cladding was generally 'poorly detailed', with the timber joinery showing 'poor workmanship' and an apparent 'lack of attention to detail throughout the whole job'.

5.3 The windows and doors

5.3.1 The expert noted that the timber joinery was installed with timber facing boards at the head and jambs, with scribes fitted at the jambs. The facings and scribes continued past the timber sills, which were insufficiently wide to allow them to butt against in the traditional manner. Metal head flashings were being installed to the windows.

5.3.2 The expert noted that the double-hung windows in the original house were in 'fair' condition, although in need of maintenance. These were being re-glazed and repaired as required.

5.4 The expert inspected the interior of the lean-to addition, taking non-invasive moisture readings internally. Despite the amount of work required to bring the alterations up to compliance there was no evidence of moisture ingress or any signs that moisture had caused any damage. Confirmation of this was achieved where a section of lining had been removed below the east window of the new bedroom. There were no elevated moisture readings in the framing, with the wall insulation and building wrap dry and in good condition. I accept that this exposed area is typical of similar areas elsewhere in the lean-to.

5.5 Commenting specifically on the exterior envelope, the expert noted that:

The exterior walls

- the flashings and paintwork are incomplete, with bare timber in many areas
- there is insufficient clearance below the weatherboards and facing at the north east corner
- the scribes are poorly fitted, with gaps apparent in many areas
- the projecting bay window to the north of the lean-to is not weathertight, with gaps and poor or no flashings
- the lean-to windows are deteriorating, with joint cracks, missing putty, gaps, bare timber, no sill flashings and incomplete head flashings
- The bottom weatherboard is not packed out to provide the appropriate pitch to the board, and the overlaps to the weatherboards vary from 50mm to 100mm, and gaps at the overlaps are apparent in many areas.

The verandah

- the balustrades are unfinished, with loose balusters and gaps apparent
- the ends of the verandah roof are open, with no verge flashings and exposed rafters
- the bullnosed rafters have broken in some areas and are being repaired with plywood gussets screwed to both sides, with the work unfinished
- the top end of the verandah is not turned up under the apron flashing

the roof cladding

- the top ends of the lean-to roof are not turned up and are not adequately fixed to the purlin (which is in the wrong position)
- there is a horizontal overlap to part of the low-pitched lean-to roof, which is not fixed to a purlin so allowing deflection and likely ponding on the roof
- the roof underlay is not extended over the gutters in some areas, and bare timber is visible
- the valley to the new roof on the original house was cut roughly, and the edges are corroding.

5.6 Compliance with the remaining code clauses

5.6.1 The expert also assessed compliance with other Building Code clauses, and made the following comments on those clauses relevant to this house:

• **B1 Structure**

The foundations appear satisfactory and the authority passed the foundation and floor slab inspection. The expert also subsequently confirmed that earthquake restraint straps had been fitted to the hot water cylinder.

- **D1 Access routes**

The expert subsequently confirmed that the steps to the bedroom and bathroom were being altered to comply with the requirements.

- **E1 Surface water**

Surfacewater disposal appears satisfactory and is unchanged from the system prior to the alterations, with downpipes connected to the authority's disposal system.

- **E3 Internal moisture**

The bathroom and laundry areas are being refurbished, to include pre-finished linings to the shower above the new bath, with a sealed junction. The vanity unit is sealed to the wall and the laundry has laminate-finished linings. The hole to the floor has been repaired and new flooring has been laid. A fan vented to the outside is being installed as part of the bathroom refurbishment.

The kitchen floor is clear-finished timber. The bench top requires sealing to the wall.

- **F2 Hazardous building materials**

No shower doors are installed. The glazed doors are re-used, with small panes and are currently being re-glazed.

- **F4 Safety from falling**

The expert noted that the verandah balustrades had gaps more than 100mm.

I note however, that the expert describes the site as falling 'approximately 1m across the site from north to south'. Relative to the adjacent ground, the verandah floor is at its highest level at the south west corner, which is about four metres from the southern boundary. I am therefore satisfied that the verandah floor is less than 1m above the adjacent ground levels, so the barrier does not need to comply with Clause F4.

- **G1, G2 and G3 Personal hygiene, Laundering and Food preparation**

The expert noted that all facilities are in good working order and adequate provision has been made to comply with the requirements.

- **G4 Ventilation**

Requirements for natural ventilation are met, and a fan vented to the outside is to be installed as part of the bathroom refurbishment.

- **G12 and G13 Water Supplies and Foul Water**

Preline plumbing and drainage inspections were undertaken and passed, and all fixtures appear to be in good operating condition with no evidence of leaks.

The water supply and sewerage disposal is unchanged from the systems prior to the alterations, with water from mains supply, and foul water conveyed to a gully trap and into the authority's sewerage disposal system. The expert has confirmed that the gully traps and vents appear satisfactory.

- **H1 Energy Efficiency**

Satisfactory preline inspections of the walls and roof were undertaken. While insulation within the ceiling space could not be inspected, fibreglass wall insulation was observed where the bedroom lining had been removed.

- 5.7 The expert also made the following comments on the building exterior:
- The facings and scribes continue past the timber sills, which are insufficiently wide to allow them to butt against in the traditional manner.
 - The bottom weatherboard is not packed out to provide the appropriate pitch to the board, and the overlaps to the weatherboards vary from 50mm to 100mm, and gaps at the overlaps are apparent in many areas.
- 5.8 A copy of the expert's report was provided to the parties on 27 July 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 relevant code requirements.

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 Solutions⁴, 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

7.1.1 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 determinations⁵ (for example, Determination 2004/1) relating to cladding and these factors are also used in the evaluation process.

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.

- 7.1.2 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.
- 7.1.3 The building work to this house is a simple, single-storey lean-to, which demonstrates a low weathertightness risk that would not require a drained cavity in order to comply with the current requirements of E2/AS1.

7.2 Weathertightness performance

- 7.2.1 Taking account of the expert's report, I conclude that remedial work to the exterior of the lean-to is necessary in respect of:
- completion of the flashings and paintwork
 - the lack of clearance at the bottom of the northeast weatherboards
 - the poorly fitted scribes to corners and joinery
 - the lack of adequate weatherproofing to the bay window
 - the deteriorating windows and doors
 - completion of the ends of the verandah roof
 - the junction of the lean-to roof with the roof of the original house
 - the horizontal overlap to part of the lean-to roof
 - the junction of the roof with the gutters
 - the corroding roof edges at the original house roof valley gutter.
- 7.2.2 I note the expert's comments outlined in paragraph 5.7, but I consider that these items are of a cosmetic nature and unlikely to affect the weathertightness of the cladding on this low risk house. I note that the cladding and joinery have remained weathertight for the past 10 years and therefore I accept that, subject to satisfactory completion of the above items, these areas are adequate in the circumstances.

7.3 Weathertightness conclusion

- 7.3.1 I consider the expert's report establishes that the current performance of the cladding is adequate because it is preventing water penetration into the house at present. Consequently, I am satisfied that the building complies with Clause E2 of the Building Code.
- 7.3.2 However, the building work is also required to comply with the durability requirements of Clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the 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.

- 7.3.3 Because the faults identified with the cladding occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 7.2.1 will result in the house being brought into compliance with Clause B2.
- 7.3.4 Effective maintenance of claddings is important to ensure ongoing compliance with Clauses B2 and E2 of the Building Code and is the responsibility of the building owner. The Department has previously described these maintenance requirements, including examples where the external wall framing of the building may not be treated to a level that will resist the onset of decay if it gets wet (for example, Determination 2007/60).

Matter 2: The remaining Building Code clauses

8. Discussion

- 8.1 Taking account of the expert's report, as outlined in paragraph 5.5 and 5.6.1, I consider that the following items require attention (the associated clauses are shown in brackets):
- completion of the repairs to the broken verandah rafters (B1)
 - Satisfactory completion of the steps to the bathroom and bedroom (D1)
 - The sealing of the kitchen bench to the adjacent wall (E3)
 - Satisfactory completion of the bathroom refurbishment (E3, G4)
- 8.2 I consider that satisfactory resolution of the above items will result in the building work being brought into compliance with Clauses B1, D1, E3, and G4.
- 8.3 I also consider that the expert's assessment of visible components of the building, together with the authority's inspection records, allow me to conclude that the building work is likely to comply with the remaining relevant clauses of the Building Code.

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 1999.
- 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 These durability periods are:
- 5 years if the building elements are easy to access and replace, and failure of those elements would be easily detected during the normal use of the building

- 15 years if building elements are moderately difficult to access or replace, or failure of those elements would go undetected during normal use of the building, but would be easily detected during normal maintenance
 - the life of the building, being not less than 50 years, if the building elements provide structural stability to the building, or are difficult to access or replace, or failure of those elements would go undetected during both normal use and maintenance.
- 9.4 In this case the delay between the completion of the building work in 1999 and the applicant's request for a code compliance certificate has raised concerns that various elements of the building are now well through or beyond their required durability periods, and would consequently no longer comply with Clause B2 if a code compliance certificate were to be issued effective from today's date.
- 9.5 It is not disputed, and I am therefore satisfied, that all the building elements, with the exception of the matters that are to be rectified as described in paragraphs 7.2.1 and 8.1, complied with Clause B2 on 15 April 1999. This date has been agreed between the parties, refer paragraph 4.5.
- 9.6 In order to address these durability issues when they were raised in previous determinations, I sought and received clarification of general legal advice about waivers and modifications. That clarification, and the legal framework and procedures based on the clarification, is described in previous determinations (for example, Determination 2006/85). I have used that advice to evaluate the durability issues raised in this determination.
- 9.7 I continue to hold that view, and therefore conclude that:
- (a) the authority has the power to grant an appropriate modification of Clause B2 in respect of all the building elements
 - (b) it is reasonable to grant such a modification, with appropriate notification, because in practical terms the building is no different from what it would have been if a code compliance certificate for the house had been issued in 1999.
- 9.8 I strongly recommend that the authority record this determination and any modifications resulting from it, on the property file and also on any LIM issued concerning this property.

10. What is to be done now?

- 10.1 A notice to fix should be issued that requires the owners to bring the building work into compliance with the Building Code, identifying the items listed in paragraph 7.2.1 and paragraph 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.
- 10.2 However, I note that the applicant is in the process of undertaking work to the house and there are many unfinished items and areas. This adds unnecessary complexity to

accessing the compliance of those areas, and I therefore suggest that the authority should re-inspect the alterations when the current work is complete. This will allow the authority to modify the items required to be included in the notice to fix according to the assessment of the completed building work.

- 10.3 I would suggest that the parties adopt the following process to meet the requirements of paragraph 10.1. Initially, the authority should issue the notice to fix. The applicant should then produce a response to this in the form of a detailed proposal, based on further investigation as necessary (including investigation of the 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.
- 10.4 Once the matters set out in paragraph 7.2.1 and paragraph 8.1 have been rectified to its satisfaction, the authority may issue a code compliance certificate in respect of the building consent as amended.

11. The decision

11.1 In accordance with section 188 of the Building Act 2004, I hereby determine that:

- the external envelope does not comply with Clause B2 of the Building Code
- of the remaining building elements:
 - the broken verandah rafters do not comply with Building Code Clause B1
 - the bathroom does not comply with Building Code Clauses E3 and G4
 - the kitchen bench does not comply with Building Code Clause E3,

and I accordingly confirm the authority's decision to decline to issue a code compliance certificate.

11.2 I also determine that:

- (a) all the building elements installed in the house, apart from the items that are to be rectified as described in this determination, complied with Clause B2 on 15 April 1999.
- (b) the building consent is hereby modified as follows:

The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 15 April 1999 instead of from the time of issue of the code compliance certificate for all the building elements, except the items to be rectified as set out in paragraph 7.2.1 and paragraph 8.1 of Determination 2009/93.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 23 October 2009.

John Gardiner
Manager Determinations