

Determination 2008/33

Determination regarding a code compliance certificate for 8-year-old additions to a house at 225 Adams Road, RD1, Christchurch



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 applicants are the owners of the property, G and B Purver (“the applicants”) and the other party is the Selwyn District Council (“the territorial authority”).
- 1.2 This determination arises from the decision of the territorial authority to refuse to issue a code compliance certificate for additions and alterations to a 100-year-old house, carried out over the past 7 years, because it is not satisfied that the building work complies with Clause B2 of the Building Code² (Schedule 1, Building Regulations 1992).

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

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

1.3 In order to reach a conclusion on the above, I need to consider whether there are other circumstances relevant to this particular situation. I note that the building work was completed in two stages, which I describe in section 2, that spanned a period of 7 years, with parts of the building work undertaken by the owners. Due to these particular factors, I take the view that it is appropriate to assess the building work's compliance with other relevant clauses of the building code and I therefore consider that the matters for determination are :

1.3.1 Matter 1: The claddings

Whether the claddings as installed to the walls and roof of the additions comply with Clauses B2 and E2 of the Building Code (see sections 177 and 188 of the Act). By "the claddings as installed" I mean the components of the systems (such as the backing materials, the flashings, the joints and the coatings) as well as the way the components have been installed and work together.

1.3.2 Matter 2: Other Building Code matters

Whether certain building elements in the additions, other than the claddings, comply with the relevant clauses of the Building Code.

1.3.3 Matter 3: The durability considerations for the Stage 1 work

Whether the building elements in the Stage 1 work, comply with Clause B2 "Durability" of the Building Code, taking into account the age of the Stage 1 work.

1.4 In making my decision, I have considered the submissions of the parties, the report of the expert commissioned by the Department to advise on this dispute ("the expert"), and the other evidence in this matter. I have evaluated the information on the claddings using a framework that I describe more fully in paragraph 6.1.

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 additions to an existing detached house situated on a large flat rural site which, although in a high wind zone for the purposes of NZS 3604³, is sheltered by well-established trees. The original house was built around 1910, and is a single-storey building constructed in a manner traditional for "villas" of that period, with light timber framing, suspended timber-framed floors, bevel backed weatherboard claddings, double-hung timber windows and 30° pitch corrugated steel hipped roofs, with two main gables that include an internal gutter at the junction. The original kitchen was a lean-to against the south wall, and a gable-roofed outbuilding to the west housed washhouse and storage facilities.

2.2 The additions

The additions and associated alterations are to three distinct areas at the western end of the house, and have been constructed in two stages spanning 7 years from 2000 to 2007.

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

Stage 1 (2000 to 2001)

2.2.1 The kitchen

The original lean-to kitchen has been demolished and replaced with an addition that fills in the southwest corner. The addition is roofed with an extension of the existing south gable and has a concrete perimeter foundation wall, timber piles and particle board flooring, with timber weatherboard cladding, re-used double-hung windows, and timber facings and eaves brackets to match the original house.

2.2.2 The porch

The detached shed/washhouse building has been upgraded and extended towards the south to provide a covered porch that meets the new kitchen addition at the southwest corner, with a covered walkway from south to north providing a link to the house. The porch roof is supported by a timber post at the southwest corner, with the gable end clad in timber weatherboards.

Stage 2 (2006)

2.2.3 The gazebo

A partly open “gazebo” structure forms an infill to the northeast internal corner between the existing north bay window and the original outbuilding, with the re-roofed walkway link providing external covered access from the house. The gazebo is square in plan, with a hipped roof incorporating a raised “lantern light” at the peak, and internal gutters at the junction with the other roofs to the south and west. The northeast corner is screened, with spaced boards along the base and timber steps to ground level. The screens incorporate timber-framed glazing with board and batten cladding below to match the existing north verandah.

2.3 The expert noted that he was unable to inspect any of the concealed timber framing, but the owner advised him that the framing timber used in the building work was H3 treated. I note that the drawings describe the framing timber as “H1 pinus radiata”. Given the lack of evidence, I am unable to conclude what level of treatment, if any, was applied to the framing timber.

2.4 The porch gable end and the kitchen are clad in bevel backed timber weatherboards fixed through the building wrap directly to the framing timbers.

3. Background

3.1 The territorial authority issued a building consent (No. 990995) on 14 January 2000 for the building work. Although the owners initially intended to complete all of the work as one stage, it seems that the task was greater than anticipated and it was decided to postpone the gazebo construction, with the kitchen and porch forming the first stage (“Stage 1”) and the gazebo with the re-roofed walkway the second (“Stage 2”).

3.2 Construction on stage one commenced in February 2000, with the owners continuing to occupy the house while working on the alterations, and the kitchen was apparently closed in by the end of 2000. The territorial authority carried out various inspections of the construction, including a preline inspection on 2 June 2001. I have no records

of any further inspections until the end of 2006, although it appears that Stage 1 was substantially completed during 2001.

- 3.3 Various difficulties experienced by the applicant meant that work on Stage 2 did not commence until 2006, and the walkway re-roofing and the gazebo foundations were completed in June 2006. However, the builder employed for this stage made no further progress and a replacement builder was sought to complete the work.
- 3.4 The territorial authority carried out a final inspection of Stage 1 only (which passed) on 14 December 2006, and the inspection record noted “all work looking OK” and indicated that no reinspection of stage one was required. The record also noted that the foundations to the gazebo (Stage 2) had been completed, but that no framing to this stage was in place.
- 3.5 Construction on Stage 2 recommenced in January 2007 and was apparently completed by June 2007. The territorial authority carried out a final inspection of Stage 2 on 18 October 2007. The inspection record noted that “all new work now completed – looking OK,” and indicated that no reinspection was required.
- 3.6 In a letter to the owners dated 9 November 2007, the territorial authority stated that, since 7 years had elapsed since the building consent was issued, a code compliance certificate could not be issued for the building work because:

...as a result of the time elapsed, the Council cannot now be satisfied on reasonable grounds that the building work and elements will continue to satisfy the durability provisions of the Building Code for the prescribed period after the Code Compliance Certificate has been issued.

- 3.7 The Department received an application for a determination on 17 December 2007.

4. The submissions

- 4.1 In a covering letter to the Department, dated 2 December 2007, the applicants outlined the history of the project and explained the circumstances leading to the staging of the building work and the prolonged construction time, noting:

We were aware that the project needed to be started within six months of the issue of the Consent. Perhaps it is our ignorance but at no stage were we aware that there was a completion date. While we had every intention of completing the work as quickly as possible events overtook us and the entire issue became very stressful.

- 4.2 The applicant forwarded copies of:

- some of the consent documentation
- the consent drawings
- some of the territorial authority’s inspection documents
- the letter from the territorial authority dated 9 November 2007
- various other information.

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

4.4 A draft determination was issued to the parties on 1 April 2008. The draft was issued for comment and for the parties to agree a date when all the building elements in the Stage 1 additions complied with Building Code Clause B2 “Durability”.

4.5 The applicants accepted the draft but requested the determination acknowledge that they has installed a vapour barrier membrane to the ground under the kitchen (refer paragraph 6.4.2). The territorial authority requested that the determination acknowledge the submissions it had made on the expert’s report.

I have amended the determination accordingly.

4.6 Both parties nominated 1 January 2002 as a date when the building elements on the Stage 1 work complied with Clause B2.

5. The expert’s report

5.1 As discussed in paragraph 1.4, I engaged an independent expert to provide an assessment of the condition of those building elements subject to the determination. The expert is a member of the New Zealand Institute of Building Surveyors.

5.2 The expert inspected the claddings on 28 January 2008 and furnished a report that was completed on 12 February 2008, which noted that, with the exception of some roof flashings, the construction quality was generally good. The weatherboards and window facings appeared to be “well fitted” with no visible “cracking, splits or twisting” and satisfactory paint finishes, and the internal linings and fittings to the kitchen had been completed to a “good standard”.

5.3 The expert noted that the windows were either re-used or from demolition sources and had been installed in a traditional manner, with timber facings and scribes and full-depth timber sills. The window and door installation appeared satisfactory, with metal head flashings extending over the top facing boards.

5.4 The expert noted that, while the roof flashings appeared to be well fitted, flashings were incomplete and various items were missing or unfinished.

5.5 The expert inspected the interior of the house (including the roof space) and no evidence of moisture was observed. The expert took non-invasive moisture readings through claddings and readings were all below 12%.

5.6 Commenting specifically on the roof claddings, the expert noted that:

- some necessary wall to roof flashings have not been installed
- some spouting has been temporarily removed and not re-installed
- internal gutters lack snow boards.

5.7 Commenting on compliance with other code clauses, the expert noted that:

- there are insufficient downpipes provided for the run-off produced by the size and pitch of the existing roof
- there are insufficient vents to the perimeter foundation

- no access has been provided to the subfloor space under the kitchen
 - the insulation to the ceiling space above the kitchen is incomplete.
- 5.8 With respect to the maintenance of the building, the expert noted the excessive build-up of debris in internal gutters.
- 5.9 The expert also noted that he could find no evidence that the necessary documentation had been provided for the electrical and drainage work.
- 5.10 The expert considered that the building work complied with other relevant clauses of the building code.
- 5.11 A copy of the expert's report was provided to each of the parties on 5 March 2008. The applicants responded in a letter dated 14 March 2008 which raised the following matters:
- Access to the subfloor could easily be provided, however the subfloor area was a very confined space.
 - The requirement for the additional subfloor is unreasonable. The new vents the match the existing and additional vents will be costly to install. The matter was discussed with the territorial authority's inspector and the extra vents mentioned in the notice to fix relate to vents on the north east side that were installed. The house is located in a high wind zone and the original house has not suffered from inadequate ventilation. The matter should have been picked up by the territorial authority before the foundation was completed.
 - Insulation over the kitchen would be installed shortly.
 - Snow boards have been installed. Roof wall flashing and the additional downpipes will be fitted shortly.
 - Producer statements for drainage and electrical work will be provided shortly.
 - As-built drainage plans should have been sought by the territorial authority at consent stage but were not. They will be difficult to provide now.

I acknowledge the submission and have amended the determination according.

- 5.12 The territorial authority responded to the expert's report on 2 April 2008. The territorial authority, in general, accepted the report and provided copies of the building consent, plans, and the inspection records. The territorial authority submitted that it required the ventilation of the subfloor as a whole to be made code compliant. The territorial authority also advised that the applicant had not called for the required inspections for the sewer drainage despite this being a requirement of the building consent.

6. Evaluation for code compliance

6.1 Evaluation framework

6.1.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solutions⁴, which will assist in determining whether the features of 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 some other provision to compensate for that in order to comply with the Building Code.

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

6.1.3 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 Weathertightness risk

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

- are built in a high wind zone moderated by local shelter
- are fairly simple, one-storey high shapes
- have several internal gutters at junctions with the original roofs
- have weatherboards fixed directly to the framing
- have external wall framing that may not be treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 The additions have been evaluated using the E2/AS1 risk matrix. The risk matrix allows the summing of a range of design and location factors applying to a specific building design. The resulting level of risk can range from 'low' to 'very high'. The

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.

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.

- 6.2.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.2.1 show that all elevations of the additions demonstrate a moderate weathertightness risk rating. I note that, if the details shown in E2/AS1 were adopted to show code compliance, the weatherboard claddings to the additions would not require a drained cavity.

6.3 Weathertightness performance: exterior claddings

- 6.3.1 Taking account of the expert's report, I conclude that remedial work is necessary in respect of:

- the incomplete and missing roof to wall flashings
- the temporarily removed spouting
- the lack of snow boards to the internal gutters.

I note that the applicants have acknowledged these faults and advised they will be fixed.

6.4 Other Building Code matters

- 6.4.1 Taking account of the expert's report, I conclude that remedial work is necessary in respect of:

- the inadequate provision of downpipes
- the inadequate provision ventilation to the sub-floor under the kitchen
- the lack of access to the sub-floor space under the kitchen
- the inadequate insulation to the ceiling space over the kitchen.

With the exception of the subfloor ventilation to the kitchen, I note that the applicants have acknowledged these faults and advised they will be fixed.

- 6.4.2 With respect to the subfloor ventilation to the kitchen, I note that while NZS 3604 is cited in the acceptable solutions, it is not the only means of establishing compliance with the Building Code. The inadequate ventilation may be alleviated by cross ventilation from adjacent spaces, or by reducing moisture ingress from the ground, which may be achieved by covering the ground with a vapour barrier membrane, or similar. I leave agreement as to the specific means of compliance to the applicants and the territorial authority.

Matter 1: The cladding

7. Discussion

- 7.1 I consider the expert's report establishes that the current performance of the claddings is adequate because they are preventing water penetration into the building at present. Consequently, I am satisfied that the building work complies with Clause E2 of the Building Code.
- 7.2 In addition, the building work is also required to comply with the durability requirements of Clause B2. Clause B2 requires that a building continues to satisfy all the objectives of the Building Code throughout its effective life, and that includes the requirement for the additions to remain weathertight. Because the roof faults on the additions are likely to allow the ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.
- 7.3 Because the faults identified with the roof cladding system occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.3.1 will result in the building work being brought into compliance with Clauses B2 and E2.
- 7.4 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).
- 7.5 I draw the attention of the applicants to the need for any maintenance programme to prevent excessive built up of debris in the internal gutter between the additions and existing building.

Matter 2: Other Building Code matters

8. Discussion

- 8.1 I consider the expert's report establishes that the provision of downpipes, subfloor access and ceiling insulation is inadequate. The ventilation of under floor area below the kitchen is not in accord with the guidelines and should be investigated to verify it is performing. Consequently, I am satisfied that, unless further investigation proves otherwise the building work does not comply with Clauses E1 and H1 of the Building Code.
- 8.2 Because the faults identified occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.4.1 will result in the building work being brought into compliance with Clauses E1 and H1.
- 8.3 I also consider the expert's report establishes that the building work complies with other relevant clauses of the Building Code.

Matter 3: The durability considerations for the Stage 1 work

9. Discussion

- 9.1 The territorial authority has concerns about the durability, and hence the compliance with the building code, of some parts of the additions taking into consideration the completion of Stage 1 of the building work (the kitchen and porch) in 2001.
- 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 The 7-year delay between the substantial completion of the Stage 1 work and the applicants’ request for a code compliance certificate raises the issue of when all the elements of these additions complied with Clause B2. I have not been provided with any evidence that the territorial authority did not accept that the elements in the Stage 1 work complied with Clause B2 when that building work was completed in 2001.
- 9.5 It is not disputed, and I am therefore satisfied, that all the building elements in the Stage 1 work complied with Clause B2 on 1 January 2002. This date has been agreed between the parties, refer paragraph 4.6.
- 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 territorial authority has the power to grant an appropriate modification of Clause B2 in respect of the building elements in the kitchen and porch additions only.
 - (b) it is reasonable to grant such a modification, with appropriate notification, because in practical terms the kitchen and porch are no different from what

they would have been if a code compliance certificate for those additions had been issued in 2002.

- 9.8 I strongly recommend that the territorial authority record this determination, and any modifications resulting from it, on the property file and also on any LIM issued concerning this property.
- 9.9 With regard to the Stage 2 work (the gazebo addition and associated walkway roof), I note that this work was constructed over one year and completed shortly before the applicants' request for a code compliance certificate in 2007. I therefore consider that there should be no concerns about compliance with Clause B2 for this part of the building.

10. What is to be done?

- 10.1 The territorial authority should issue a notice to fix that requires the owners to bring the additions and alterations into compliance with the Building Code, listing to the defects outlined in paragraphs 6.3.1 and 6.4.1 and referring to any further defects that might be discovered in the course of rectification, but not specifying how those defects are to be fixed. That is a matter for the owner to propose and for the territorial authority to accept or reject.
- 10.2 I would suggest that the parties adopt the following process to meet the requirements of paragraph 10.1. Initially, the territorial authority should issue the new notice to fix. The owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified issues. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

11. The decision

- 11.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the building work does not comply with Clauses B2, E1, E2, and H1 of the Building Code, and accordingly confirm the territorial authority's decision to refuse to issue a code compliance certificate.
- 11.2 I also determine that:
- (a) all the building elements installed in the Stage 1 work (being the kitchen and porch additions), apart from the items that are to be rectified, complied with Clause B2 on 1 January 2002.
 - (b) the building consent is modified as follows:

The building consent is subject to a modification to the Building Code to the effect that, Clause B2.3.1 applies from 1 January 2002 instead of from the time of issue of the code compliance certificate for all building elements, provided that the modification does not apply to the Stage 2 work or to those elements of the building which have been altered or modified as set out in Determination 2008/33.

- (c) the territorial authority is to issue a code compliance certificate in respect of the building consent, as amended in (b) above, once the matters set out in paragraph 6.3.1 have been fixed to its satisfaction.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 14 May 2008.

John Gardiner
Manager Determinations