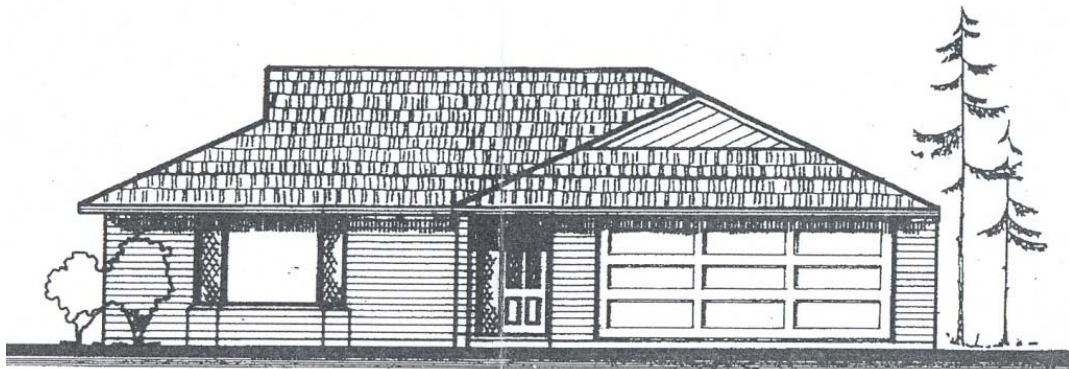


Determination 2006/128

Refusal of a code compliance certificate for a building at 8 Ashbury Street, Nelson



1. The matter 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, Determinations Manager, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicants are Mr and Mrs Marsh (“the applicants”), and the other party is the Nelson City Council (“the territorial authority”).
- 1.2 The matter for determination is whether the territorial authority’s decision is correct with regard to declining to issue a code compliance certificate for an 12-year-old house because it was not satisfied that:
- the monolithic cladding to the walls of the house comply with clauses B2 “Durability” and E2 “External Moisture” of the Building Code² (First Schedule, Building Regulations 1992)
 - other elements of the building comply with clause B2.

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 The matters to be determined are:

Matter 1: The cladding

Whether I am satisfied on reasonable grounds that the wall cladding as installed to the external walls of the building (“the cladding”), complies with the Building Code (see sections 177 and 188 of the Act). By “the wall cladding as installed” I mean the components of the system (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.

Matter 2: The durability considerations

The elements that make up the building work comply with clause B2, taking into account the age of the building.

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

2. The building

- 2.1 The building work consists of a single-storey house situated on a level site, which is in a low wind zone for the purposes of NZS 3604³. The house is of a relatively simple shape on plan and the pitched roofs have hip, valley, and wall to roof junctions. The roofs generally have 600mm wide eaves projections and the roof is also extended over the entrance. The external wall construction is of conventional light timber frame built on concrete floors.
- 2.2 The expert has noted that the external wall framing is Douglas Fir. Accordingly I accept that it is not treated to a level that is effective in helping resist decay if it absorbs and retains moisture.
- 2.3 The external cladding system is generally brick veneer but the south east elevation has a monolithic cladding. The monolithic cladding system is described as 30mm stucco plaster fixed through the building wrap directly to the framing timbers. The plaster is finished with a paint system.

3. Sequence of events

- 3.1 The territorial authority issued a building consent in mid-1994.
- 3.2 In response to the applicants’ request for a code compliance certificate for the building, the territorial authority wrote to the applicants on 4 July 2006. The territorial authority noted the following:

The period of time that has elapsed since the building works began does present Council with a problem when considering the issue of a [CCC] for some of the building consents. The Building Code states that durability of building elements commences from the time of issue of the Code Compliance Certificate . . .

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

As it is now approximately twelve years since construction commenced it would not be appropriate for this period to be added to the durability time frames identified in the [NZBC]. [Council] therefore cannot be satisfied on reasonable grounds that the work now meets all the requirements of the building code, especially B2 . . and . . . E2 . . .

Accordingly, the territorial authority considered it could not issue a code compliance certificate.

- 3.3 A summary of the inspection record for the building consent provided by the territorial authority showed some inspections were undertaken in 1994 but that not all inspections had been completed.
- 3.4 The territorial authority did not issue a notice to fix in terms of section 164 of the Act.
- 3.5 An application for a determination was received by the Department on 17 July 2006.

4. The submissions

- 4.1 In a covering letter to the Department dated 12 July 2006, the applicants noted that as they wished to sell the house, it was necessary for them to obtain a code compliance certificate.
- 4.2 The applicants forwarded copies of:
 - the plans and specifications
 - some of the consent documentation
 - the letter of 4 July 2006 from the territorial authority.
- 4.3 The territorial authority did not make a submission.
- 4.4 Copies of the submissions and other evidence were provided to each of the parties. Neither party made any further submission in response to the other.
- 4.5 A consultant acting on behalf of the applicants (“the consultant”) commented on the expert’s report in a letter to the Department dated 16 November 2006. The consultant expressed concern regarding the invasive testing carried out by the expert. In general, the expert accepted the expert’s findings and pointed out that the stucco plastered wall was sheltered by a fence and overhanging eaves. The consultant stated that he had not observed any evidence of timber deterioration or the presence of mildew. The consultant also recorded that the building was first occupied on 31 August 1994.
- 4.6 A copy of the first draft determination was sent to the parties on 1 November 2006 and a second draft determination was issued on 12 December 2006: the second draft determination was issued to assist clarity. The drafts were issued for comment and for the parties to agree a date when all the building elements installed in the house, apart from items that have to be rectified, complied with the Clause B2 Durability.
- 4.7 The applicants accepted the second draft determination subject to the Department acknowledging the consultant’s report. With respect to the parties agreeing a date when compliance with clause B2 was achieved, both the territorial authority and the applicants cited 31 August 1994.

Matter 1: The cladding

5 The expert's report

- 5.1 The expert inspected the cladding of the building on 6 September 2006 and furnished a report that was completed on 8 September 2006. The report stated that the plaster was dense, the building appears to be sound and true, and the workmanship was generally of a good standard. It was also noted that at many locations, there is a reliance on sealants as a "first line" barrier to the entry of moisture.
- 5.2 An area of stucco plaster was removed by the expert to examine the construction at one window jamb and sill junction. I accept that this example is representative and applies to similar details throughout the house. The expert also noted that the building paper is rotted away at the northern end of the stucco cladding. There is also stained insulation and signs of decay in the bottom plate at this location.
- 5.3 The expert took non-invasive moisture readings through the interior linings and no higher readings were recorded. Invasive moisture readings were also taken from the exterior of the wall framing at eight locations of the stucco cladding, and only one higher reading was recorded. This was 24% at the east elevation corner bottom plate where the ground level was non-compliant. Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.
- 5.4 The expert made the following comments regarding the monolithic cladding:
- There are cracks in the plaster, some of which have been effectively sealed and painted.
 - There is inadequate ground clearance between the base of the cladding and the ground levels at some locations but particularly along the southeast wall from bedrooms 2 to 4 where the plaster is run straight down to the existing raw surface levels with no edge finish or anticapillary gap. The bottom plate is at risk of becoming wet along this length of wall.
 - The exterior joinery units lack jamb and sill flashings and the head flashings do not carry past the jamb lines.
 - No sealant has been installed to the gap where the window heads abut the soffits.
 - The plaster is not continued beneath the garage side door.
- 5.5 The expert also noted that there was no evidence that vertical control joints had been installed.
- 5.6 The expert made the following comments regarding the brick veneer:
- There are gaps between the veneer and the jambs of the exterior joinery units at some locations.
 - The exterior joinery units lack sill flashings.
 - Vegetation is impeding some of the weep holes.
- 5.7 The expert also noted that two gully traps are flush with the ground and not the required 100mm minimum above ground level.

5.8 Copies of the expert's report were provided to each of the parties on 13 September 2006. As noted in paragraph 4.5, the consultant commented on the report in a letter to the Department dated 16 November 2006.

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 Solution⁴, in this case E2/AS1, which will assist in determining whether the named 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 may be necessary to add some other provision to compensate for that in order to obtain compliance 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 overall design of the building, the surrounding environment, the detailed 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 (refer to Determination 2004/1 et al)⁵ 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 the weathertightness characteristics, I find that the house:

- is situated in a low wind zone
- is single storey and is of a relatively simple shape on plan
- has 600mm wide eaves projections, which together with the roof overhang above the entry, provide good protection to the cladding beneath them
- has no attached decks or balconies
- has external wall framing that is unlikely to be treated to a level that is effective in helping resist decay if it absorbs and retains moisture.

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.

6.2.2 When evaluated using the E2/AS1 risk matrix, these weathertight features show that all the elevations of the building demonstrate a low weathertightness risk rating. The matrix is an assessment tool that is intended to be used at the time of application for consent, before the building work has begun and, consequently, before any assessment of the quality of the building work can be made. Poorly executed building work introduces a risk that cannot be taken into account in the consent stage but must be taken into account when the building as actually built is assessed for the purposes of issuing a code compliance certificate.

6.3 Weathertightness performance

6.3.1 Generally the stucco cladding and brick veneer appear to have been installed in accordance with reasonable trade practice despite the absence of some flashings as required in NZS 4521. Some junctions, edges and penetrations are also not well constructed, and these are as described in paragraphs 5.4, 5.5 and 5.6, and in the expert's report. I accept the expert's opinion that remedial work is necessary in respect of the following:

- There are cracks in the plaster, of which only some have been effectively sealed and painted.
- There is inadequate ground clearance between the base of the cladding and the ground levels at some locations but particularly along the southeast wall from bedrooms 2 to 4 where the plaster is run straight down to the existing raw surface levels with no edge finish or anti-capillary gap.
- The plaster is not continued beneath the garage side door.
- Vegetation is impeding some of the weep holes in the brick veneer.
- Any other building elements associated with the above that are consequently discovered to be in need of rectification.

6.3.2 As noted in paragraph 5.7 upstand surrounds are required to two gully traps to achieve compliance with clause G13 'Foul water'.

6.3.3 I note the expert's comment in paragraph 5.5 with regard to the possible lack of control joints in the stucco cladding. However, given the good standard of the plaster (with well-embedded reinforcing) and the absence of significant cracking in the southeast wall after 12 years, I am prepared to accept that the control joints may have been installed or may not have been necessary.

6.3.4 Notwithstanding the fact that the stucco cladding is fixed directly to the timber framing, thus limiting drainage and ventilation behind the cladding, I have noted certain compensating factors that have assisted or will assist its performance in this particular case:

- Apart from the noted exceptions, the stucco plaster is of demonstrable good quality.
- The house is situated in a low wind zone.
- The house is single storey and is of a relatively simple shape on plan.
- The house has 600mm wide eaves projections, which together with the roof overhang above the entry, provide good protection to the cladding beneath

them.

- The house has no attached decks or balconies.
- Apart from where defects have been noted, the cladding, including the exterior joinery, has demonstrated weathertightness performance for 12 years. The stucco cladding is on the south east face of the building where there is less exposure to the sun and this will have contributed to the absence of cracking. The stucco is of good quality with well imbedded reinforcing.

6.3.5 I consider that these factors help compensate for the lack of a ventilated cavity where both the brick veneer and the stucco cladding are installed and can assist the building to comply with the weathertightness and durability provisions of the Building Code.

7 Conclusion

- 7.1 I am satisfied that the current performance of the stucco cladding is not adequate because it is allowing water penetration into the building in at least one location at present. Consequently, I am not satisfied that this cladding as installed on the building complies with clause E2 of the Building Code.
- 7.2 I also consider that the expert's report establishes there is no evidence of external moisture entering the building where the brick veneer is installed, and accordingly, the veneer cladding does comply with clause E2 at this time.
- 7.3 In addition, the building 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 faults on the house regarding both the stucco cladding and the brick veneer are likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.
- 7.4 I conclude that, because the faults identified with the 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 remaining weathertight and in compliance with clause B2. I have given further consideration to the question of B2 compliance under matter 2 of this determination.
- 7.5 I also consider that fixing the items outlined in paragraph 6.3.1 to the approval of the territorial authority, along with any other faults that may become apparent in the course of that work, will consequently result in the house remaining weathertight and in compliance with clauses B2 and E2. Correction of the items in paragraph 6.3.2 will consequently result in the house also complying with respect to clause G13.
- 7.6 Effective maintenance of claddings (in particular monolithic cladding) 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.
- 7.7 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.

7.8 As 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, periodic checking of its moisture content should also be carried out as part of normal maintenance.

Matter 2: The durability considerations

8. Discussion

8.1 As set out in paragraph 3.2, the territorial 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 date of the building in 1994.

8.2 The building was substantially completed sometime in 1994. It was subject to various inspections during 1994 by the territorial authority, but it appears no further inspections were carried out.

8.3 The relevant provision of clause B2 of the Building Code recognises 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).

8.4 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.

8.5 It is not disputed, and I am therefore satisfied, that all the building elements installed in the house, apart from items that have to be rectified as described in paragraph 6.3.1 and 6.3.2, complied with clause B2 on 31 August 1994. This date has been confirmed by both the applicant and the territorial authority, refer paragraph 4.7.

8.6 In order to address these durability issues, I sought some clarification of general legal advice about waivers and modifications. I have now received that clarification and the legal framework and procedures based on this clarification are described in

previous determinations (for example, Determination 2006/85) and are used to evaluate the durability issues raised in this determination.

8.7 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 all of the elements of the building if the applicant applies for such a modification.
- (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 had been issued sometime in 1994.

8.8 I strongly recommend that the territorial authority record this determination and any modification resulting therefrom, on the property file and also on any LIM issued concerning this property.

9 The decision

9.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the stucco cladding does not comply with clauses B2 and E2 of the Building Code, and that the brick veneer does not comply with clause B2. Accordingly I confirm the territorial authority's decision to refuse to issue a code compliance certificate on these grounds.

9.2 I also determine that:

- (a) all the building elements installed in the house, apart from the items that are to be rectified, complied with clause B2 on 31 August 1994
- (b) should the applicant so request, the territorial authority must modify its decision to issue the building consent to the effect that the building consent is amended as follows:

The building consent is subject to a modification to the Building Code to the effect that, clause B2.3.1 applies from 31 August 1994 instead of from the time of issue of the code compliance certificate for all building elements except those elements set out in paragraphs 6.3.1 and 6.3.2 of Determination 2006/128.

- (c) once the defects set out in paragraphs 6.3.1 and 6.3.2 of this determination have been fixed to its satisfaction, and following the request and modification set out in (b) above, the territorial authority is to issue a code compliance certificate in respect of the building consent as amended.

9.3 I note that the territorial authority has not issued a notice to fix as required by section 435. A notice to fix should be issued that requires the applicants to bring the building into compliance with the Building Code, identifying the defects listed in paragraph 6.3.1 and 6.3.2, but not specifying how those defects are to be fixed. That is a matter for the applicants to propose and for the territorial authority to accept or reject. It is important to note that the Building Code allows for more than one method of achieving compliance.

9.4 I would suggest that the parties adopt the following process to meet the requirements of paragraph 9.3. Initially, the territorial authority should issue the new notice to fix,

listing all the items that the territorial authority considers to be non-compliant. 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.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 22 December 2006.

John Gardiner
Determinations Manager