

Determination 2006/19

Refusal of a code compliance certificate for a block of four townhouses with a monolithic cladding system at 94 Battery Road, Ahuriri, Napier

1 The dispute 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, for and on behalf of the Chief Executive of that Department. The applicants are the joint-owners, A A and M R Beattie acting through an agent (“the applicants”), and the other party is the Napier City Council (“the territorial authority”).
- 1.2 The dispute for determination is whether the territorial authority’s decision to decline to issue a code compliance certificate on a 3-year-old block of 4 townhouses comprising Units 1 to 4 (“the building”) because it was not satisfied that the monolithic cladding complied with clauses B2 “Durability” and E2 “External Moisture” of the Building Code² (First Schedule, Building Regulations 1992) is correct.
- 1.3 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. In this instance the expert is the same individual as that referred to in paragraph 3.3 as the “building consultancy firm” engaged by the applicant. However, I am satisfied that in this instance there was no issue of conflict of interest in my using the expert’s report as part of the evidence I needed to consider. I have evaluated this information using a framework that I describe more fully in paragraph 6.1. I have not considered any other aspects of the Act or the Building Code.

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

2 The building

- 2.1 The building work consists of a block of 4 three-storey townhouse apartments situated on an excavated steeply sloping site that is reasonably protected from the weather. The building is of a relatively simple shape on plan and the low-pitched roof has parapet walls to three sides and discharges into a face fixed gutter. The front parapet capping has had an additional fibreglass matting membrane fixed under the metal cappings. The exterior walls are of either concrete blockwork or of conventional light-timber frame construction built on concrete ground floor slabs or intermediate proprietary concrete floors and sheathed with monolithic cladding. I note that the interior work to Unit 3 is yet to be completed.
- 2.2 Each unit has an exterior balcony situated at each of the two upper levels and these have curved timber-framed monolithic-clad balustrades. The roof has corresponding projections, which together with the parapets, match the curved profiles of the upper balconies. The specified steel balustrade cappings have been replaced by plastered “Hardibacker” and a fibreglass matting membrane. An external timber deck is also constructed at the upper level outside each unit.
- 2.3 The independent expert commissioned by the Department to inspect the building (“the expert”) noted that apparently 3 different brands of timber were used in the external wall framing. Two of these were H1.2 treated and the remaining brand was untreated. However, I have not received any evidence as to where the variously treated and untreated timbers were used to construct the external wall framing.
- 2.4 The timber-framed external walls of the building that are the subject of this determination are clad with a system that is described as monolithic cladding. In this instance it incorporates a three coat reinforced solid plaster coating laid over 4.5mm “Hardibacker” sheets that are fixed through the building wrap directly to the framing timbers.

3 Sequence of events

- 3.1 The territorial authority issued two building consents, both dated 12 June 2003.
- 3.2 The territorial authority carried out various inspections of the property during its construction and carried out a final inspection on 7 September 2005. Following this inspection, the territorial authority wrote to the applicants on 8 September 2005 and stated:

The Inspection revealed the following faults:

A Code of Compliance Certificate cannot be issued as the exterior cladding does not meet the requirements of the New Zealand Building Code “E2 External Moisture”.

- 3.3 Following discussions with the territorial authority, the applicants engaged a building consultancy firm to carry out a survey of the exterior cladding, the parapet flashings, and the internal moisture ingress relating to the building. The consultants were also

to advise on remedial work and ensure that such work complied with the relevant Building Code requirements. The consultants inspected the building on 2 and 13 September 2005 and prepared a report. The report required remedial work to be carried out in regard to the:

- front parapets
- moisture within the external walls
- corner flashing to Units 1 and 4.

3.4 The consultants were of the opinion that the completed remedial work carried out to these 3 areas would enable the building to comply with clause E2 of the Building Code.

3.5 The applicant made an application for a determination that was dated 30 September 2005.

3.6 In a revised letter to the applicants dated 1 December 2005, the territorial authority noted:

The Inspection revealed the following faults:

A Code of Compliance Certificate cannot be issued as the exterior cladding does not meet the requirements of the New Zealand Building Code B2 Durability and E2 External Moisture.

4 The submissions

4.1 In a covering statement to the Department, the applicants stated that the territorial authority was not prepared to make a decision on the work that had been rectified. The applicants noted that following a recommendation from the territorial authority, a building consultant had been engaged to inspect the building and ensure that the remedial work complied with clause E2 of the Building Code. The applicants were of the opinion that the building work now complied with clause E2. The owner also attached a time-line covering the background to the application for a code compliance certificate. This also indicated the territorial authority's concern with the deck waterproofing membrane and the solution approved by the consultant.

4.2 The applicants also forwarded copies of the:

- plans
- building consent
- consultant's report
- correspondence with the territorial authority.

- 4.3 In a letter to the Department dated 1 December 2005, territorial authority noted that it had advised the applicants that it would not issue a code compliance certificate or a notice to fix. The territorial authority also attached a letter to the applicants dated 8 September 2005 that amended its previous letter of this date. The amendment added “B2 Durability” as a compliance concern regarding the exterior cladding.
- 4.4 Copies of the submissions and other evidence were provided to each of the parties. Neither the applicants nor the territorial authority made any further submissions in response to the submissions of the other party.

5 The expert’s report

- 5.1 The expert inspected the cladding of the building on 30 November 2005 and 2 December 2005 and furnished a report that was completed on 9 December 2005. The expert noted that the plaster coatings are applied in accordance with good trade practice and are in accordance with NZS 4251³. Generally, the construction and finish throughout the units is good. The expert noted that certain remedial work had been undertaken subsequent to the applicants’ consultant’s report. The expert did not raise any issues of non-compliance with regard to the cladding.
- 5.2 The expert took non-invasive readings through the interior linings of the exterior walls and two elevated moisture levels of 24% were found in Unit 4. The expert took further invasive readings and no elevated readings were obtained. Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.
- 5.3 The expert also noted that following the ingress of moisture into Units 1 and 4, the building was surveyed by the applicants’ consultant. The applicants were then advised to open up the interior affected walls, remove the fibreglass batts, allow the timber framing to dry out, then replace the batts, linings and trim. Some of these recommendations had been carried out by the applicants.
- 5.4 The expert noted that the higher moisture readings that were obtained in the report to the Department related only to the gibraltar board internal linings and not to the framing itself. Further invasive investigation revealed that the batts were damp and the gibraltar board backing layer was moist. The expert recommended that the gibraltar board wall linings and the batts adjacent to the front windows of Units 1 and 4 be removed, the timber framing dried out and the batts, linings and trim be replaced.
- 5.5 The expert also observed that a number of the fixing rows to the roofing were incomplete.
- 5.6 Copies of the expert’s report were provided to each of the parties.

³ New Zealand Standard NZS 4251 Solid Plastering, Part 1: 1998 Cement plasters for walls, ceilings and soffits

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, which in this case is E2/AS1, 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; and
- 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 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 antecedents, the Building Industry Authority, have also described weathertightness risk factors in previous determinations (refer to Determination 2004/1 et al) 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 will need to be less robust. In any event, there is a need for both the design of the cladding system and the quality of its installation to be carefully carried out.

6.2 Weathertightness risk

6.2.1 In relation to the weathertightness characteristics, I find that the building:

- has no eaves or verge projections. However, the balconies and roof extensions provide some protection to the cladding areas below them
- is on a site that is reasonably protected from the weather
- is of a relatively simple shape on plan
- has two balconies constructed at the outside of each unit

⁴ An Acceptable Solution is a prescriptive design solution approved by the Department that provides one way of complying with the Building Code. The Acceptable Solutions are available from The Department's Website at www.dbh.govt.nz.

- has external wall framing that in part is unlikely to be treated to a level that is effective in helping resist decay if it absorbs and retains moisture.

6.2.2 When evaluated using the E2/AS1 risk matrix, these weathertight features show that three elevations of the building demonstrate a medium weathertightness risk rating and one elevation a high 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 cladding appears to have been installed according to good trade practice and the higher moisture readings obtained by the expert relate to damp fibreglass batts being reinstalled during the remedial work that was undertaken.

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

- the cladding generally appears to have been installed according to good trade practice
- the building is on a site that is reasonably protected from the weather
- the building is of a very simple shape.

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

7 Conclusion

7.1 I consider that the expert's report establishes there is no evidence of external moisture entering the building, and accordingly, that the monolithic cladding does comply with clause E2 at this time. In making this decision, I have taken into account that the moisture present in Units 1 and 4 can be attributed to the wet re-installed insulation batts and not to the ingress of external moisture.

7.2 However, 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 building to remain weathertight. Because the wet batts would, in the future, release moisture into Units 1 and 4, the building does not comply with the durability requirements of clause B2.

- 7.3 Subject to further investigations that may identify other faults, I consider that having found that the insulation batts are the cause of the higher moisture readings obtained by the expert, I can conclude that satisfactory replacement of the batts in Units 1 and 4, together with the satisfactory drying out of the adjoining framing timbers is likely to result in the building being in compliance with clauses B2 and E2.
- 7.4 I note that effective maintenance of monolithic claddings is important to ensure ongoing compliance with clause B2 of the Building Code. That maintenance is the responsibility of the building owner. The Building Code assumes that the normal maintenance necessary to ensure the durability of the cladding is carried out. For that reason clause B2.3.1 of the Building Code requires that the cladding be subject to “normal maintenance”. That term is not defined and I take the view that it must be given its ordinary and natural meaning in context. In other words, normal maintenance of the cladding means inspections and activities such as regular cleaning, re-painting, replacing sealants, and so on.
- 7.5 As at least some of the external wall framing is untreated, periodic checking of its moisture content should be carried out as part of normal maintenance.
- 7.6 It is emphasized that each determination is conducted on a case-by-case basis. Accordingly, the fact that a particular cladding system has been established as being code compliant in relation to a particular building does not necessarily mean that the same cladding system will be code compliant in another situation.
- 7.7 I decline to incorporate any waiver or modification of the Building Code in this determination.

8 The decision

- 8.1 In accordance with section 188 of the Act, I determine that the building is weathertight now and therefore the cladding complies with clause E2. However, as there is a concern regarding the insulation batts in Units 1 and 4 and therefore the durability requirements of the Building Code, I find that the building does not comply with clause B2. In addition, there is work required to complete the interior of Unit 3. Accordingly, I confirm the territorial authority’s decision to refuse to issue the code compliance certificate.
- 8.2 I also find that rectification of the wet insulation batts and the drying out of the adjoining framing timber to Units 1 and 4 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 building being in compliance with clauses B2 and E2, notwithstanding the lack of a ventilated cavity. When remedial work is undertaken the opportunity should be used to confirm that the parapet leaks have been successfully addressed and that the only remaining defects are the wet insulation batts.
- 8.3 I note that the territorial authority has not issued notices to fix. The territorial authority should now issue a notice to fix in relation to each consent, and the owner

is then obliged to bring the building up to compliance with the Building Code. It is not for me to decide directly how the defects are to be remedied and the cladding brought to compliance with the Building Code. That is a matter for the owner to propose and for the territorial authority to accept or reject.

- 8.4 I would suggest that the parties adopt the following process to meet the requirements of paragraph 8.3. Initially, the territorial authority should issue the 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 technically robust 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 14 March 2006.

John Gardiner
Determinations Manager