# Determination 2007/35

# Refusal of a code compliance certificate for a house at 8A Cullen Place, Tawa

## 1 The matter to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("the Act") made under due authorisation by me, John Gardiner, Determinations Manager, Department of Building and Housing ("the Department"), for and on behalf of the Chief Executive of that Department. The applicants are the owners Mr and Mrs Turner ("the applicants"), and the other party is the Wellington City Council ("the territorial authority").

1.2 The matter for determination is whether the territorial authority's decision to decline to issue a code compliance certificate for the house is correct. The refusal arose because the building had been erected under the supervision of Nationwide Building Certifiers Ltd ("the building certifier"), which was duly registered as a building certifier under the former Building Act 1991 but which lost its registration as a building certifier before it had issued a code compliance certificate for the building.

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

1.3 In order to determine that matter, I must first decide whether the building complies with the Building Code.

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. I have evaluated the information in relation to the cladding using a framework that I describe more fully in paragraph 7.1.

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 a detached three-storey house situated on an excavated steeply sloping site, which is in a very high wind zone for the purposes of NZS 3604[2]. The house is of a relatively simple shape on plan but with some complex features. The low-pitched roofs are at varying levels and have internal gutters and some hip or valley junctions. The roofs are generally surrounded by parapet walls that have overhanging projections varying in width from 200mm to 500mm. Cantilevered box gutters of varying widths are situated on the south elevation at levels 1 and 2. The level 2 parapets and the box gutters on the south elevation are segmental on plan. The roofs are also extended over the lower level family room entrance and the upper-floor balcony. The extended roof areas are supported on timber posts and beams.

2.2 Apart from the block walls to the garage, the external wall construction is of conventional light timber frame built on either proprietary precast concrete or timber-framed floors. A timber-framed balcony is constructed outside the level 2 family room and kitchen, and this is constructed over a living space. The balcony has a balustrade constructed with timber balusters and handrails.

2.3 I have not received any evidence that establishes whether the external wall framing is treated to a level that is effective in helping resist decay if it absorbs and retains moisture.

2.4 The external cladding system to the main walls is generally 12mm thick "Shadowclad" plywood that has a stain finish. There is a section of unpainted fibre-cement cladding on the east elevation of level 2. The exterior faces of the parapets and independent box gutters are faced with "Colorsteel" fixed over a plywood backing and the interior faces of the parapets are lined with unpainted fibre-cement sheets. The claddings are fixed through the building wrap directly to the framing timbers.

## 3 Sequence of events

3.1 The building certifier was approved as a building certifier under section 53 of the Building Act 1991 on 5 January 1999.

[2] *New Zealand Standard NZS 3604:1999 Timber Framed Buildings*

3.2 The territorial authority issued a building consent on 30 June 2000, based on a building certificate issued by the building certifier dated 19 June 2000. The building certificate did not contain any exclusions from the building certifier's scope of engagement, nor was the work inconsistent with its approval at that time.

3.3 The building certifier carried out various inspections during construction and undertook a final inspection of the house on 12 April 2001.

3.4 The building certifier issued various "Building Certifier's Monthly Inspection Reports" from 8 November 2000 to 2 February 2001 and copies of these were forwarded to the territorial authority.

3.5 A "Building Certifier's Inspection Report" dated 30 April 2001 was issued by the building certifier. This noted that the building certifier was satisfied on reasonable grounds that the building work, up to and including the final inspection, had been undertaken in accordance with the plans and specifications attached to the building consent.

3.6 The building certifier issued an interim code compliance certificate dated 12 April 2001. This certificate noted that all aspects of the dwelling were complete apart from the handrail to the external stairs.

3.7 The building certifier's scope of approval was amended on 1 January 2003 to, in general terns, exclude claddings outside E2/AS1. The restrictions did not apply when the building certifier completed its final inspection and issued the interim code compliance certificate.

3.8 It appears that the building certifier's Wellington office was closed in May 2004. The building certifier's approval as a certifier expired on 30 December 2004.

3.9 On 18 July 2006, during a telephone conversation, the territorial authority informed the applicants that it was unable to issue a code compliance certificate.

3.10 The Department received the applicants' application for a determination on 26 July 2006.

## 4 The submissions

4.1 In a covering letter to the Department dated 18 July 2006, the applicants set out some of the background and stated that over the past 6 years there had been no correspondence from the territorial authority to say that there were problems with the house. The applicants noted that the territorial authority had refused to issue a code compliance certificate and that the interim code compliance certificate issued by the building surveyor was subject only to the installation of an external stair handrail.

4.2 The applicants forwarded copies of:

- the plans and specifications
- some consent and inspection information

- the interim code compliance certificate.

4.3 The territorial authority wrote to the Department on 31 August 2006, setting out the background to the dispute and listed the inspection documentation that it had received from the building certifier. The territorial authority stated that it had not carried out any inspections of the building work, nor had the building certifier notified the territorial authority that it was unable to inspect or certify the building work as required by section 57 (3) of the 1991 Act. As the building certifier had not supplied a building certificate under section 56 of the 1991 Act for the work or a code compliance certificate, it had insufficient grounds to be satisfied that the work was Code compliant. In addition, the territorial authority considered that the issuing of a certificate of acceptance under section 437 of the Act was the appropriate method to deal with the issues.

4.4 The territorial authority forwarded copies of:

- the inspection documentation forwarded by the building certifier
- the interim code compliance certificate issued by the building certifier.

4.5 Copies of the submissions and other evidence were provided to the applicants and the territorial authority.

4.6 A copy of the draft determination was issued to the parties for comment on 13 December 2006. The applicants accepted the draft.

4.7 The territorial authority responded in letter from its legal advisers dated 23 January 2007. The submission was largely in response to discussion in the draft determination about the transitional provisions in the Building Act 2004 and how a territorial authority might apply these in situations when a building certifier had been engaged but was not able to properly sign-off the completed work. The submission also noted some typographical errors in the draft determination.

4.8 Taking account of the submission from the territorial authority I prepared a second draft determination which was issued to the parties for comment on 8 March 2007. The applicants accepted the draft.

4.9 The territorial authority responded to the second draft by letter dated 15 March 2007 which said:

> Would you please confirm, if remedial work, as detailed in the Experts report . . . is carried out, the completed work will meet the requirements of the Building code and a Code Compliance Certificate can be issued.

I have responded to this request in paragraph 8.4 of this determination.

## 5 Grounds for the establishment of code compliance

5.1 I find that the available documentation, which includes the building certifier's inspection reports and the expert's report, allows me to form a view as to the code compliance of the building work as a whole. In this particular case, additional

reliance can be placed on the building certifier's inspections as it had issued an interim code compliance certificate which was within the building certifier's scope of approval at the time of issue (refer paragraph 3.7). The interim code compliance certificate had only one exclusion, being the omission of the handrail to the external stair.

5.2 Taken together, these sources of information provide reasonable grounds for me to form a view that the building as a whole will comply with the building code, once the defects noted in paragraph 6.4 have been fixed to the satisfaction of the territorial authority.

5.3 With specific regard to inaccessible building components, and in the absence of any evidence to the contrary, I take the view that the Department is entitled to rely on the inspections undertaken by the building certifier, along with other supporting evidence.

5.4 However, before deciding whether or not to rely on the building certifier's inspection reports, I consider it important to look for evidence that corroborates them. In this particular case, corroboration comes from the visual inspection of the accessible components by the expert, which can be used to verify whether the building certifier's inspections were properly conducted.

5.5 In this particular instance, the visual inspection of the accessible components has verified code compliance of those components. This provides grounds for me to form a view that the building work as a whole, including the inaccessible components, complies with the building code.

## 6. The Expert's report

6.1 As noted in paragraph 1.4, I engaged an independent expert to inspect the dwelling, and report on the compliance of the building work with the relevant requirements of the building code. The expert is a member of the New Zealand Institute of Building Surveyors.

6.2 The expert inspected the building's cladding on 15 September 2006 and furnished a report that was completed on 26 September 2006. The expert was of the opinion that, apart from minor exceptions, the standard of the cladding finish and flashings is good. The claddings, including their horizontal and vertical joints, are constructed in accordance with the manufacturer's instructions.

6.3 The expert took non-invasive moisture readings through the interior linings and invasive moisture readings into the exterior of the wall framing, and recorded the following higher invasive readings:

- 17% to 20% around the entrance door to the storage area.
- Over 20% at the northwest corner of the lounge roof parapet.
- Over 30% at the northwest corner of the lounge roof.

Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.

6.4 The expert made the following comments regarding the claddings and the roofing:

- The fibre-cement cladding and soffit linings require painting.
- There is cracking at one corner of the lounge roof internal parapet cladding.
- There is an inadequate detail at another corner of the lounge roof internal parapet cladding.
- The ends of the head flashings to the clerestory windows above the lounge and hallway, and above the doors to bedroom 2 and the middle-level storage area, are not sealed.
- There is no scriber or trim installed at the junction of the cladding and the block wall adjoining the middle-level storage door.
- No flashing is installed where a vent pipe penetrates a roof gutter.

6.5 Copies of the expert's report were provided to each of the parties on 2 October 2006. The territorial authority responded in a letter dated 12 October 2006, querying why the expert only considered the cladding as "the application for determination is made in respect of all work . . .". Attached to the letter was a copy of the PIM for the property that showed the wind zone rating to be "very high". The territorial authority also said:

> The expert states that the fibre cement soffit linings . . . require painting. [The expert] notes that the manufacturer of the fibre cement sheet determines that the cladding should be sealed within three months of installation. As the sheet has been installed since 2001 the Council questions whether the product is still suitable for painting and whether the manufacturer would support their product under these circumstances. The Council suggests that replacement of the sheet and timely sealing would be a better option.
>
> The assessor has not given any consideration to a number of other risk areas within the house. These include:
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> - Tanking and drainage in relation to the blockwalls [at] basement . . . and . . . level one.
> - The pitch of the roof and . . . installation of skylights in relation to roof pitch. . . . .the skylights were not shown on the plans approved under the building consent.
> - The flashing of the raking windows on the west elevation.

6.6 The expert was asked to comment on these specific matters. The expert noted that:

- there was no sign of water ingress to the block walls
- he was of the opinion that the skylights had been property installed
- the raking windows to the West elevation had not been installed.

6.7 With respect to the fibre-cement soffit, the expert confirmed that the manufacturer would not warrant fibre-cement board exposed to the elements for longer than the recommended three months period. The expert said board on the soffit under the

eave will have been "protected from dampness and sunlight". In his report the expert also noted that the fibre-cement clad parapet walls to the upper roof were also unpainted and "will have been exposed to all elements". The expert therefore suggested the fibre-cement board on the soffit be painted and the board on the inside of the parapet on the upper level be replaced. I concur with this opinion although I note that the soffit would not have been fully protected from dampness.

6.8 The above matters highlight changes made to the building that were not noted as amendments on the consented plans. I consider this matter also needs to be resolved to the satisfaction of the territorial authority.

# 7 Evaluation for code compliance

## 7.1 Evaluation framework: exterior cladding

7.1.1 In evaluating the design of a building and its construction, it is useful to make some comparisons with the relevant Acceptable Solution[3], in this case E2/AS1, which will assist in determining whether the features of the building 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.

7.1.2 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 determinations[4] (refer to Determination 2004/1 *et al*) relating to cladding and these factors are also used in the evaluation process.

7.1.3 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.

[3] 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.
[4] Copies of all determinations issued by the Department can be obtained from the Department's website.

## 7.2 Weathertightness risk

7.2.1 In relation to these characteristics I find that the house:

- is built in a very high wind zone
- is a maximum of three storeys high
- is relatively simple in plan and form but has some complex features
- has parapet wall and roof extensions that provide some protection to the cladding under them
- has one high-level balcony constructed over a living space
- has external wall framing that is likely to be untreated, so providing little resistance to the onset of decay if the framing absorbs and retains moisture.

7.2.2 When evaluated using the E2/AS1 risk matrix, two elevations of the house demonstrate a medium weathertightness risk and the other two elevations a high risk. 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.

## 7.3 Weathertightness performance

7.3.1 Generally the claddings appear to have been installed in accordance with good trade practice. However, some junctions, edges and penetrations are not well constructed, and these are as described in paragraph 6.4 and in the expert's report. I accept the expert's opinion that remedial work is necessary in respect of the following:

- The lack of painting to fibre-cement and soffit linings. Replacement of the fibre-cement cladding to the parapets.
- The cracking in the cladding at an internal corner of the lounge roof parapet cladding.
- At another internal corner of the lounge roof parapet cladding, the inadequately weatherproofed corner junction.
- The unsealed ends of the head flashings to the clerestory windows above the lounge and hallway, and above the doors to bedroom 2 and the middle-level storage area.
- The lack of scriber or trim to the junction of the cladding and the block wall adjoining the middle-level storage door.
- The lack of flashing at the penetration of a vent pipe through a roof gutter.

7.3.2 It is possible that, in the course of rectifying the defects observed by the expert, other associated defects will be discovered. These too will need to be fixed.

7.3.3 Notwithstanding the fact that the claddings are fixed directly to the timber framing, thus limiting drainage and ventilation behind the cladding, I have noted that, apart

from a few exceptions, the claddings are installed to good trade practice, which helps the performance of the claddings in this particular case and assists the building to comply with the weathertightness and durability provisions of the Building Code.

## 8 Discussion

8.1 I am satisfied that the current performance of the plywood and fibre-cement claddings is not adequate because they are allowing water penetration into the building at several locations at present. Consequently, I am not satisfied that the cladding systems as installed on the building comply with clause E2 of the Building Code.

8.2 In addition, the house is also required to comply with the durability requirements of clause B2. Clause B2 requires that building elements continues to satisfy all the performance requirements of the building code for specified periods, and that includes the requirement for a building to remain weathertight. Because the cladding faults on the building are likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.

8.3 I conclude that, because the faults that have been identified with the cladding systems occur in discrete areas, satisfactory rectification of the items outlined in paragraph 6.4, and of any other faults identified in the course of that rectification, will result in the building becoming and remaining weathertight and in compliance with clauses B2 and E2.

8.4 As I state in paragraph 7.3.2, other faults may become evident during the course of rectifying the faults outlined in paragraph 7.3.1, and therefore I cannot provide the confirmation sought by the territorial authority in its letter dated 15 March 2007. If the process described in paragraph 9.3 is followed the territorial authority will be able to satisfy itself, by appropriate inspection, that faults identified in the course of rectification are themselves rectified. The territorial authority may of course decline to issue a code compliance certificate if any of the faults described in paragraph 7.3.1, or associated faults that are discovered in the course of rectification, are not rectified to its satisfaction.

8.5 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.

8.6 Effective maintenance of claddings (in particular monolithic claddings) 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.

8.7 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.

8.8 As the external wall framing of the building is not likely to 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.

## 9 The Decision

9.1 In accordance with section 188 of the Building Act 2004, I determine that the plywood and fibre-cement claddings do not comply with clauses B2 and E2 of the Building Code and confirm the territorial authority's decision not to issue a code compliance certificate.

9.2 I note that the territorial authority has not issued a notice to fix. A notice to fix should be issued that requires the owners to bring the building into compliance with the building code, identifying the defects listed in paragraph 7.3.1 above and referring to the additional risk factors listed by the territorial authority and to any further defects that might be discovered in the course of rectification (refer paragraph 7.3.2). The notice to fix should not specify how the defects are to be rectified. 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

9.3 I suggest that the parties adopt the following process to meet the requirements of paragraph 9.2. Initially, the territorial authority should issue the 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.

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

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 29 March 2007.

John Gardiner
**Determinations Manager**