Determination 2007/84

Refusal of a code compliance certificate for a house at 94 Waiewe Street, Whakatane

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, 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 building, Mr and Mrs Fisk, acting through a firm of legal advisers ("the applicants") and the other party is the Whakatane 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 a 11-year-old house because it had concerns about the durability of the building, taking into account the time that has elapsed since the building consent was issued.

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

1.3 The durability of the building has to be considered in the context of clauses B2 "Durability" of the Building Code[2] (First Schedule, Building Regulations 1992). However, based on the correspondence provided on behalf the applicants, I am of the opinion that the primary matter to be determined is whether the cladding as installed on the building complies with clauses B2 and E2 "External Moisture" (see sections 177 and 188 of the Act). By "the cladding" 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.

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. With regard to the cladding, I have evaluated this information 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 a single-storey detached house with a basement containing a double garage and laundry, situated on a sloping site, which is in a high wind zone for the purposes of NZS 3604[3]. The house is relatively complex in plan and form and the basement has blockwork external walls. Construction of the main storey is conventional light timber frame constructed on concrete or timber-framed floors. The metal tiled pitched roofs have hip, valley, and wall-to-roof junctions, and 600mm wide eaves. However, there are no verge projections.

2.2 A porch with a pitched roof is constructed over the front entrance and this is supported on monolithic-clad timber-framed columns and beams. Boarded decks supported on timber posts and beams are constructed at elevations 3 and 4, and a timber balustrade protects the edges of these decks.

2.3 I have not received any information as to the treatment, if any, of the external wall framing that was ultimately used in the construction of the house. However, I observe that the plan notes require that all framing timbers are to be No 1 treated Radiata Pine.

2.4 The upper-storey walls of elevation 1 (the front elevation) and part of elevations 2 and 4 have a brick-veneer facing. The remainder of the external upper-storey walls, including the gables above the brickwork on elevations 2 and 4, are clad with a monolithic cladding comprising 7.5 mm thick "Harditex" fibre-cement sheets fixed through the building wrap to the framing, and finished with sprayed texture and paint coatings.

[2] The Building Code is available from the Department's website at www.dbh.govt.nz.
[3] New Zealand Standard NZS 3604:1999 Timber Framed Buildings

3. Sequence of events

3.1 The territorial authority issued a building consent on 26 September 1995.

3.2 I have not been provided with any detailed information as to the inspections carried out on the building by the territorial authority. Investigation by the expert has established that work commenced on the house in 1995 and that a final inspection took place on 5 November 2004. The territorial authority apparently refused to issue a code compliance certificate following a request from the applicants in 2005.

3.3 Correspondence took place between the applicants' legal advisers and the territorial authority between 28 February 2005 and 16 March 2006 as to the issuing of a code compliance certificate or a certificate of acceptance. In summary, the territorial authority refused to issue either of these certificates.

3.4 The territorial authority did not issue a notice to fix in accordance with section 164(2) of the Act.

3.5 An application for a determination was received by the Department on 19 April 2007.

4. The submissions

4.1 The applicants' legal advisers wrote to the Department on 17 April 2007, noting that the territorial authority "is concerned about the adequacy of the building exterior to last a reasonable time and the potential liability of Council if it issues a certificate in 2007".

4.2 The applicants forwarded copies of:

- the plans and specifications
- the building consent information
- the correspondence between the parties.

4.3 Copies of the evidence were forwarded to each of the parties.

4.4 A copy of the draft determination was sent to the parties for comment on 21 June 2007. Part of the objective in issuing the draft was to ensure that I will establish some clarity from the parties regarding the matter in dispute, as the lack of a submission and other material from the territorial authority did not establish the territorial authority's concerns. Based on the submissions made on behalf of the applicants, the territorial authority is apparently only concerned about the durability of the cladding and not the durability of any other building elements.

4.5 As the applicants and the territorial authority have both accepted the draft determination without further comment, I now issue the document as a final determination.

5. The expert's report

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

5.2 The expert inspected the cladding of the house on 21 May 2007 and furnished a report that was completed on 31 May 2007. The expert noted that the cladding straightness and "fairness" of finish is of good quality, as is the overall standard of workmanship and painting. The brick veneer is "well executed with raked perpends providing ventilation and drainage". The expert removed a section of the cladding at one window sill/jamb junction to examine the construction. I am prepared to accept that the details revealed by this inspection apply to similar situations throughout the building.

5.3 The expert took non-invasive moisture readings internally around the house and no elevated readings were found. Subsequently, invasive moisture readings were taken through the cladding. Elevated readings were noted at the rear deck level (21.9%), at the front deck level (24.2%), at the elevation 1 fascia (38.4%), and at the elevation 2 fascia (22.4%). Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.

5.4 Commenting specifically on the monolithic cladding, the expert noted that:

- the minimal cracks evident in the cladding are generally where the cladding abuts the exterior joinery units
- there is no evidence that control joints are installed
- there is no clearance between the base of the cladding and the apron flashings
- the metal fascias are butted up to unsealed cladding
- no Inseal strips or flashings have been installed to the jambs and sills of the external joinery units
- the ends of the apron flashings lack kick-outs
- the timber decks are fitted hard against the cladding.

5.5 Copies of the expert's report were provided to each of the parties on 12 June 2007.

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 Solution, in this case 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.

- 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 determinations[4] (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 the house:

- is built in a high wind zone

- is generally single storey

- is relatively complex in plan and form

- has 600mm wide eaves projections but the verges lack projections

- has a roofed-over front porch

- has timber decks to two elevations

- has external wall framing that may not be treated to a level that provides much resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 The house has 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 risk rating can range from ‘low’ to ‘very high’. The risk rating 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

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

detailing; for example, a high risk level is likely to require particular types 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 one elevation of the house demonstrates a low weathertightness risk, one elevation a medium risk, and the remaining two elevations a high risk. I note that, in order to comply with E2/AS1, the monolithic cladding of this building would require a drained cavity.

6.3 Weathertightness performance

6.3.1 Generally the monolithic cladding appears to have been installed in accordance with good trade practice. However, based on the expert's opinion, I accept that remedial work is necessary in respect of the following:

- the cracks evident in the cladding
- the apparent lack of control joints
- the lack of clearance between the base of the cladding and the apron flashings
- the metal fascias being butted up to unsealed cladding
- the lack of Inseal strips and flashings to the jambs and sills of the external joinery units
- the lack of kick-outs to the ends of the apron flashings
- the timber decks being fitted hard against the cladding.

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

- Apart from the noted exceptions, the cladding is installed to reasonable trade practice.
- The house has 600mm wide eaves projections that protect the cladding below them.
- The house has no balconies.

6.3.3 I consider that these factors help compensate for the lack of a drained cavity and can assist the building to comply with the weathertightness and durability provisions of the Building Code.

7 Discussion

7.1 I consider the expert's report establishes that the brick veneer is code-compliant. However, the current performance of the monolithic cladding is not adequate

because it is allowing water penetration into the building at some locations at present. Consequently, I am satisfied that the building does not comply with clause E2 of the Building Code.

7.2 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 house to remain weathertight. Because the cladding faults on the building are likely to continue to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.

7.3 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 clauses B2 and E2.

7.4 I emphasise 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.

7.5 I decline to incorporate any waiver or modification of the Building Code in this determination.

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 fully 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.

8 The Decision

8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the building work does not comply with clauses B2 and E2 of the Building Code, and accordingly confirm the territorial authority's decision to refuse to issue a code compliance certificate.

8.2 I note that the territorial authority has not issued a notice to fix. 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 including any associated defects discovered during the course of that work, 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. It is important to note that the Building Code allows for more than one method of achieving compliance.

8.3 I would suggest that the parties adopt the following process to meet the requirements of paragraph 8.2. Initially, the territorial authority should issue the notice to fix. The owner should then produce a response to this in the form of a 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 1 August 2007.

John Gardiner
Manager Determinations