

## Determination 2007/40

### Refusal of a code compliance certificate for a house at 21 George Gee Drive, Lower Hutt



#### 1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004<sup>1</sup> (“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 applicant is a legal adviser (“the applicant”) acting for the owners, P and K Channtha, and the other party is the Hutt City 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 9 year old house because it was not satisfied that it complied with clauses B2.3.1 “Durability” and E2.3.2 “External Moisture” of the Building Code<sup>2</sup> (First Schedule, Building Regulations 1992).

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<sup>1</sup> The Building Act 2004 is available from the Department’s website at [www.dbh.govt.nz](http://www.dbh.govt.nz).

<sup>2</sup> The Building Code is available from the Department’s website at [www.dbh.govt.nz](http://www.dbh.govt.nz).

- 1.3 The matter to be determined is whether the cladding as installed on the building (“the cladding”) complies with clauses E2 and B2 (see sections 177 and 188 of the Act). By the “the cladding as installed” I mean the components of the system (such as the backing materials, the flashings, the joints, and the plaster and/or 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. As regards 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 two-storey detached house in a very high wind zone for the purposes of NZS 3604<sup>3</sup>. The house is relatively complex in plan and form. The construction is a combination of structural steel members and conventional light timber framing constructed on concrete slabs and timber-framed floors. The house is built on multiple levels with mono-pitch skillion roofs and 520mm eaves to most elevations. There are 5 balconies to the upper level, 3 of which are cantilevered, there are parapets above the roof in some locations. Equis Dextx membranes are used on the roof and balcony floors.
- 2.2 I have not received any information as to the treatment, if any, of the external wall framing timber.
- 2.3 The external walls of the house are clad partly with an externally finished insulation system (EIFS) and partly with horizontal corrugated Colorsteel. Both types of cladding have a painted finish and are fixed directly through the building wrap to the framing.
- 2.4 No producer statements or guarantees have been provided in relation to either of the cladding systems although warranties have been provided for the deck membranes and the paint system.

## **3. Sequence of events**

- 3.1 The territorial authority issued building consent number 971287 on 1 October 1997.
- 3.2 The dwelling was inspected by the territorial authority during the course of construction in 1997 and 1998.

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<sup>3</sup> New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 3.3 The owners apparently made an application for a code compliance certificate which the territorial authority declined to issue. I have not seen that correspondence but I believe it was dated 29 August 2005.
- 3.4 On 18 July 2006 the applicant wrote to the territorial authority advising that he was acting for the owners and requesting the territorial authority to reconsider its decision not to issue a Code Compliance Certificate. In subsequent correspondence between the parties the applicant asked the territorial authority to explain why it considered the dwelling did not comply with the building code.
- 3.5 In a letter dated 15 August 2006 the territorial authority confirmed it had declined to issue a code compliance certificate because it was not satisfied that the cladding complied with clauses B2.3.1 and E2.3.2 of the Building Code.
- 3.6 The territorial authority has not issued a notice to fix as required by section 435.
- 3.7 Advice was received from the applicant that he was acting for the owner and was making an application for a determination which was received by the Department on 14 September 2006.

#### **4. The submissions**

- 4.1 The applicant forwarded copies of:
- the plans and specifications, engineers reports and consent documentation
  - the correspondence with the territorial authority.
- 4.2 In a letter dated 4 October 2006 the applicant sought advice as to whether any building method or product subject to a warning or ban under section 26 (2) of the Act had been used in the building. I can confirm that no product or system has been subject to a warning or ban under the 2004 Building Act.
- 4.3 In a letter to the Department dated 12 October 2006 the applicant suggested the matter to be determined was not whether the house complies with clauses E2 and B2 but whether the building was completed in accordance with the building consent issued by the Hutt City Council and consequently the territorial authority was legally obliged to issue a Code Compliance Certificate. I replied on 20 October 2006 to the effect that compliance with the Building Code was a prerequisite in any process to issue a Code Compliance Certificate.
- 4.4 In a letter to the Department dated 25 October 2006, the territorial authority confirmed the consent details and confirmed inspections at the following stages:
- Siting / ground / foundation – undertaken 5 November 1997.
  - Floor slab / subfloor – undertaken 27 November 1997.
  - Pre-clad – undertaken 6 April 1998.

It advised there were no recorded inspections subsequent to the Pre-clad inspection date and no Advice of Completion notification as required by the Building Act 1991.

A “status” inspection was carried out on 28 August 2005. This highlighted concerns relating to the cladding, and associated maintenance programme. An application for code compliance certificate was received by the territorial authority (Form 278) on 30 June 2006. After further consideration, and further correspondence, the territorial authority submitted:

“The Council does not believe, in this instance, that it is able to be reasonably satisfied that the external cladding, as installed, complies with the New Zealand Building Code. Further the cladding would be subject to a normal and effective maintenance programme, to ensure the ongoing compliance. Any established maintenance programme has not been demonstrated, with confidence, to Council.

Therefore Council believes that compliance with clauses B2.3.1 and E2.3.2 of the Building Code First Schedule Building Regulation 1992) cannot be satisfied”

- 4.5 Copies of the submission and other evidence were provided to each of the parties.
- 4.6 A copy of the draft determination was forwarded to the parties for comment on 16 January 2007. Both parties accepted the draft, the last response being received on 9 March 2007.

## **5. The expert’s report**

- 5.1 The expert inspected the house on 17 November 2006, and furnished a report that was completed on 6 December 2006. The expert noted that the cladding was neatly finished and the flashings and trim were neat and tidy and were of a high standard.
- 5.2 The expert took internal non-invasive moisture readings throughout the building. A high reading was obtained beside the laundry door. Vulnerable locations were checked for moisture with invasive tests of the external wall framing and two relatively elevated readings of 30% and 25% were recorded, one beside the laundry door and one immediately below the drainage outlet from the balcony to bedroom 4. Moisture levels above 18% recorded after cladding is in place generally indicate that moisture is entering the structure.
- 5.3 The expert made the following specific comments on the cladding and building envelope:
- There are no overflows, as described by the Acceptable Solution E2/AS1, fitted to the decks.
  - There is a defective head flashing above the laundry door.
  - There is a leak from the damaged membrane to the rainwater discharge on the deck outside bedroom 4. The water is consequently pooling on the soffit lining below.
  - The exhaust vents above the laundry door were not sealed or protected.

- 5.4 Copies of the expert's report were provided to each of the parties on 20 December 2006.
- 5.5 In a letter to the Department dated 21 December 2006, the applicant said the report was "accepted . . . in its entirety". The letter also advised that the owners had, or would shortly, complete the remedial work outlined in the report.

## **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<sup>4</sup>, 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<sup>5</sup> (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 very high wind zone

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<sup>4</sup> 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](http://www.dbh.govt.nz).

<sup>5</sup> Copies of all determinations issued by the Department can be obtained from the Department's website.

- has two cladding types, one of which is monolithic
- is two storeys high and has several floor levels
- is relatively complex in plan and form with monoplane roofs at different levels
- generally has 520mm wide eaves projections, which offer a degree of protection to the walls under them
- has several balconies
- has external wall framing that is unlikely to be treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 When evaluated using the E2/AS1 risk matrix, the house demonstrated a high weathertightness risk at all elevations. 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 claddings appear to have been installed in accordance with good trade practice. However, taking account of the expert's opinion, I accept that remedial work is necessary in respect of the following:

- The absence of overflows fitted to the decks.
- The defective head flashing above the laundry door which has allowed water to penetrate the wall.
- The leak from the damaged membrane to the rainwater discharge on the deck outside bedroom 4. The water is consequently pooling on the soffit lining below.
- The lack of seals or protection for exhaust vents above the laundry door.
- Any other building elements associated with the above that are consequently discovered to be in need of rectification.

6.3.2 Notwithstanding the fact that the 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 good trade practice and is well flashed and sealed.

- The house generally has 520mm wide eaves projections that provide a degree of protection to the cladding below them.

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 that the expert's report establishes that the current performance of the monolithic cladding is not adequate because it is allowing water penetration into the building in at least 2 locations at present. Consequently, I am not satisfied that the cladding system as installed on the building complies with clause E2 of the Building Code.

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 cladding faults as described have allowed the ingress of moisture, the building does not comply with the durability requirements of clause B2.

7.3 Because 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 becoming 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 and is the responsibility of the building owner. Clause B2.3.1 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.

## **8 The decision**

8.1 In accordance with section 188 of the Building Act 2004, I determine that the cladding on the building 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. If the items requiring attention have not yet been repaired to the territorial authority's satisfaction 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, 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.

8.3 I would suggest that the parties then adopt the following process to meet the requirements of paragraph 8.2. Initially, the territorial authority should, if necessary, 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.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 13 April 2007.

John Gardiner  
**Determinations Manager**