

## *Determination 2005/61*

# *Refusal of a code compliance certificate for a building with a “monolithic” cladding system: House 53*

## **1 THE DISPUTE TO BE DETERMINED**

1.1 This is a determination by the Chief Executive of the Department of Building and Housing (“the Chief Executive”) under section 17 of the Building Act 1991 (“the Act”), as amended by section 424 of the Building Act 2004. The applicant is the owner and the other party is the territorial authority. The builder has also been included as an appropriate person in terms of section 19 of the Act. The application arises from the refusal by the territorial authority to issue a code compliance certificate for a 3-year old house unless changes are made to its monolithic cladding system.

1.2 My task in this determination is to consider whether I am satisfied on reasonable grounds that the external monolithic wall cladding as installed (“the cladding”) on the majority of the walls of the house complies with the building code (see sections 18 and 20 of the Act). By “external monolithic wall cladding as installed”, I mean the components of the system (such as the backing sheets, the flashings, the joints and the plaster and/or the coatings) as well as the way the components have been installed and work together.

1.3 This determination is made under the Building Act 1991 subject to section 424 of the Building Act 2004. That section came into force (“commenced”) on 30 November 2004, and its relevant provisions are:

“. . . on and after the commencement of this section,—

“(a) a reference to the Authority in the Building Act 1991 must be read as a reference to the chief executive; and

“(b) the Building Act 1991 must be read with all necessary modifications to enable the chief executive to perform the functions and duties, and exercise the powers, of the Authority”

It should be noted that the new legislation does not amend the determination process set out under the 1991 Act, other than to transfer the power to make a determination from the Building Industry Authority (“the Authority”) to the Chief Executive.

- 1.4 This determination refers to the former Authority:
- (a) When quoting from documents received in the course of the determination, and
  - (b) When referring to determinations made by the Authority before section 424 came into force.
- 1.5 No other aspects of the Act or the building code have been considered in this determination.

## **2 PROCEDURE**

### **The building**

- 2.1 The building is a single-storey house situated on a level site in a medium wind zone in terms of NZS 3604: 1999 “Timber framed buildings”. The house is of conventional light timber frame construction on a concrete slab and blockwork foundations. The majority of the timber-framed external walls of the building are lined with monolithic cladding, with the remainder faced with a brick veneer. The house is of a relatively simple shape with the pitched roofs having hip and valley junctions. Apart from one short length of verge, the eaves and verges have 450mm wide projections. An open boarded timber deck is constructed against the cladding to the north elevation.
- 2.2 The expert commissioned by the Department notes that the exterior walls are framed with “Lazer” framing. I have not received any further evidence of the treatment, if any, of the timber used in the construction of the exterior walls.
- 2.3 The cladding system incorporates 7.5mm backing sheets fixed through the building wrap directly to the wall framing and finished with a spray texture exterior coating system. The system has been subject to an independent Appraisal.

### **Sequence of events**

- 2.4 The territorial authority issued a building consent on 6 July 2001. There were no conditions attached to the consent in relation to the cladding.
- 2.5 The territorial authority made various inspections during the course of construction, passed the pre-lining inspection on 20 August 2001, and carried out final inspections on 16 April 2002, 8 August 2002, 3 May 2004 and 20 May 2004.
- 2.6 On 5 May 2004, the territorial authority wrote to the owner listing outstanding items requiring attention. The territorial authority also noted that the pergola required to be rectified and that the territorial authority needed to be assured that the monolithic cladding met certain criteria.

- 2.7 The territorial authority wrote to the owner on 1 June 2004, requiring the builder to attend to 3 items that concerned the cladding. (These concerns were also subject of a letter sent to the builder by the territorial authority on 1 June 2004). The owner was to attend to ground levels, and was to make application for a determination and for a safe and sanitary report in regard to the pergola. The territorial authority also listed remedial work required to make the pergola safe.
- 2.8 The territorial authority issued a Notice to Rectify dated 5 July 2004. The “Particulars of Contravention” attached to the Notice listed certain items that led the territorial authority to believe that the house did not comply with clauses B2 and E2 of the building code. One of these related to the lack of a drainage cavity. The Particulars also noted that the pergola did not comply with clause B1 of the building code.
- 2.9 The owner’s application for a Determination, dated 13 September 2004, was forwarded to the Authority by the territorial authority on 4 October 2004.
- 2.10 Following a visit to the site, the backing sheet manufacturer wrote to the owner on 16 September 2004, noting that it had an independent appraisal supporting the use of the direct fixed named fibre-cement. The fixing and coating application of the cladding had been completed in a good tradesman-like manner. The writer was of the opinion that, subject to the insertion of approximately 8 control joints, the cladding would meet the requirements of the product’s technical literature.
- 2.11 The territorial authority wrote to the owner on 4 October 2004, acknowledging receipt of the backing sheet manufacturer’s letter to the owner, and requested that the builder attend to the insertion of control joints and other outstanding items as set out in the Notice to Rectify. The territorial authority would also comply with the owner’s instructions and forward an application for a determination to the Authority.

### **3 THE SUBMISSIONS**

- 3.1 The territorial authority in a letter to the Department dated 4 October 2004, described certain defects that it required to have rectified. Copies of the following documents were also provided:
- The building plans and specification;
  - The consent documentation;
  - The territorial authority’s inspection sheets;
  - The Notice to Rectify;
  - The correspondence between the owner and the territorial authority; and
  - The cladding manufacturer’s letter of 16 September 2004.

3.2 The copies of the evidence were provided to each of the parties and neither party made a further response.

#### **4 THE RELEVANT PROVISIONS OF THE BUILDING CODE**

4.1 The dispute for determination is whether the territorial authority's decision to refuse to issue a code compliance certificate because it was not satisfied that the cladding complied with clauses B2 and E2 of the building code (First Schedule, Building Regulations 1992) is correct.

4.2 There are no Acceptable Solutions that have been approved under section 49 of the Act that cover this cladding. The cladding is not accredited under section 59 of the Act. I am therefore of the opinion that the cladding system as installed must now be considered to be an alternative solution.

4.3 In several previous determinations, the Authority has made the following general observations, which in my view remain valid in this case, about acceptable solutions and alternative solutions.

- Some acceptable solutions cover the worst case, so that in less extreme cases they may be modified 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 will be necessary to add some other provision to compensate for that in order to comply with the building code.

#### **5 THE EXPERT'S REPORT**

5.1 The Department commissioned an independent expert ("the expert") to inspect and report on the cladding. The expert inspected the building on 16 March 2005, and furnished a report that was completed in April 2005. The expert noted that there was shading of the paintwork at the cladding joints. The expert's report made the following specific comments on the cladding:

- There is a lack of control joints as required by the manufacturer's recommendations;
- There are numerous cracks to all elevations of the building and the cladding is bulging above the kitchen window;
- The base of the cladding is not sealed;
- The window head flashings on the north elevation are poorly detailed and gaps are evident at the flashing ends;

- The external window and doors are sealed at their edges and the surface of the cladding and the textured spray is applied over the sealant. Some cracks are visible at these junctions;
  - There are no kickouts installed to the ends of the apron flashings and unsatisfactory repairs have been undertaken at these locations; and
  - The timber deck is fixed hard up against the cladding with no provision for drainage. The expert also noted that there is no ventilation under the deck as it is built down onto the ground.
- 5.2 The expert took moisture readings though both the interior and the exterior of the monolithic-clad external walls throughout the house using a non-invasive meter. No elevated readings were recorded.
- 5.3 Copies of the expert's report were provided to each of the parties.

## 6 DISCUSSION

### General

- 6.1 I have considered the submissions of the parties, the expert's report and the other evidence in this matter. The approach in determining whether building work complies with clauses B2.3.1 and E2.3.2, is to examine 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 Authority and the Department have described the weathertightness risk factors in previous determinations (Refer to Determination 2004/01 *et al*) relating to monolithic cladding and I have taken these comments into account in this determination.

### Weathertightness risk

- 6.2 In relation to the weathertightness characteristics, I find that the house:
- With one minor exception, has 450mm wide eaves and verge projections that provide good protection to the cladding areas below them;
  - Is in a medium wind zone;
  - Is single storey;
  - Is of a relatively simple shape on plan, with roofs that have hip and valley junctions;
  - Has a deck at ground level, but no balconies; and
  - Has external wall framing, which is likely to be untreated, and less able to resist decay if it absorbs and retains moisture.

## **Weathertightness performance**

- 6.3 I find that, generally, some aspects of the cladding appear to have been installed according to good trade practice and to the manufacturer's instructions, but some junctions and edges are not well constructed. These areas are:
- The lack of control joints as required by the manufacturer's recommendations;
  - The numerous cracks to all elevations of the building and the bulging cladding above the kitchen window;
  - The unsealed base of the cladding;
  - The poorly detailed window head flashings on the north elevation;
  - The edge sealed external window and doors and the cracking at some of these locations;
  - The lack of kickouts to the ends of the apron flashings and the unsatisfactory repairs that have been undertaken at these locations; and
  - The timber deck being fixed hard up against the cladding, together with the lack of ventilation under the deck.
- 6.4 Notwithstanding the fact that the backing sheets are fixed directly to the timber framing, thus inhibiting drainage and ventilation behind the cladding sheets, I find that there are 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 house is single storey, and has 450mm wide eaves and verge projections that provide some protection to the cladding below them;
  - The house has no balconies; and
  - There is no moisture evident in the external wall cavities at this time.
- 6.5 I consider that these factors help compensate for the lack of a drainage and ventilation cavity, and can allow the house to comply with the weathertightness and durability provisions of the building code, providing that corrective measures are undertaken.
- 6.6 I note that the territorial authority has expressed concerns as to the structural stability of the pergola attached to the house. However, as I have been informed by the expert that the pergola is in the process of being demolished, I consider that this is no longer an issue.
- 6.7 I note that all elevations of the house demonstrate a low weathertightness risk rating, as calculated using the E2/AS1 risk matrix. 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 CONCLUSION**

- 7.1 I consider that the expert's report establishes there is no evidence of external moisture entering the house, and accordingly, that the monolithic cladding does comply with clause E2 at this time.
- 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 additions to remain weathertight. Because the cladding faults on the house are likely to allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2.
- 7.3 I also consider that because the faults in the house's cladding occur in discrete areas, I am able to conclude that rectification of the identified faults will consequently bring the cladding into compliance with the code. Once the cladding faults listed in paragraph 6.3 have been satisfactorily rectified, the house will consequently be able to remain weathertight and thus comply with both clauses E2 and B2.
- 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 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 I emphasise that each determination is conducted on a case-by-case basis. 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.
- 7.6 I decline to incorporate any waiver or modification of the building code in this determination.

## **8 THE DECISION**

- 8.1 In accordance with section 20 of the Act, I determine that the house is weathertight now and therefore the cladding complies with clause E2. However, as there are a number of items to be remedied to ensure it remains weathertight and thus meets the durability requirements of the code, I find that the house does not comply with clause B2. Accordingly, I confirm the territorial authority's decision to refuse to issue the code compliance certificate.
- 8.2 I find that once the items of non-compliance that are listed in paragraph 6.3 are rectified to the approval of the territorial authority, together with any other instances of non-compliance that become apparent in the course of rectification, the cladding as installed on the house will consequently comply with the building code, notwithstanding the lack of a drainage cavity.
- 8.2 I note that the territorial authority has issued a Notice to Rectify requiring provision for adequate ventilation, drainage and vapour dissipation. Under the Act, a Notice to Rectify can require the owner to bring the house into compliance with the building code. The Authority has already found in a previous determination (2000/1) that the Notice to Rectify cannot specify how that compliance can be achieved. I concur with that view. A new Notice should be issued that requires the owners to bring the cladding into compliance with the building code, without specifying the features that are required to be incorporated. It is not for me to dictate how the defects described in paragraph 6.3 are to be remedied. How that is done is a matter for the owner to propose and for the territorial authority to accept or reject, with either of the parties entitled to submit doubts or disputes to the Chief Executive for another determination.
- 8.4 Finally, I consider that the cladding will require on-going maintenance to ensure its continuing code compliance.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 4 May 2005.

John Gardiner  
**Determinations Manager**