

Determination 2005/75

Refusal of a code compliance certificate for a building with a “monolithic” cladding system: House 65

1 THE DISPUTE TO BE DETERMINED

- 1.1 This is a determination of a dispute referred to 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 applicants are the joint-owners (referred to throughout this determination as the “owner”), and the other party is the North Shore City Council (“the territorial authority”). The application arises from the refusal by the territorial authority to issue a code compliance certificate for a 4-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 cladding as installed (“the cladding”), which is applied to the external walls of this house complies with the building code (see sections 18 and 20 of the Act). By “external 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 In making my decision, I have not considered any other aspects of the Act or the building code.

2 PROCEDURE

The building

- 2.1 The building work is a two-storey detached house, with a basement garage, situated on an excavated sloping site, which is in a high wind zone in terms of NZS 3604: 1999 “Timber framed buildings”. The external walls are of conventional light timber frame construction built on concrete block foundation and retaining walls, and sheathed with monolithic cladding. The house is of a fairly complex shape, and the pitched roofs are at varying levels with some hip and wall to roof junctions. Apart from the metal gutters and fascias, there are no eaves or verge projections.
- 2.2 An enclosed balcony with a timber-framed balustrade is constructed over a habitable space at the upper floor level. A high-level close-boarded timber deck with associated access steps and metal balustrades and handrails is situated at the southwest elevation. A shaped cantilevered canopy is constructed over the main entrance, and a monolithic clad chimney is built against an external wall and set through a roof line.
- 2.3 The specification calls for all wall framing to be H1 treated. However, I have not received any evidence to confirm what treatment, if any, has been applied to the external wall framing.
- 2.4 The cladding system is what is described as monolithic cladding, and is “Insulclad” as manufactured by Plaster Systems Ltd, and is finished with a textured coating. The system has been subject to a BRANZ appraisal.
- 2.5 The plaster system supplier provided a “Producer Statement” dated 22 May 2003 2003, covering the plaster system.

Sequence of events

- 2.6 The territorial authority issued a building consent on 21 December 2000, based on a certificate supplied by Approved Building Certifiers Ltd (“the building certifier”), dated 8 December 2000.

- 2.7 The building certifier carried out inspections during the course of construction and approved the “Preline Building Inspection” on 6 April 2001, and the final building inspection on 16 September 2003.
- 2.8 The building certifier issued an interim code compliance certificate dated 29 September 2003, for all building work, with the exception of the “outer cladding”.
- 2.9 The territorial authority wrote to the building certifier on 17 November 2003, stating that its officers had visited the site and noted that the house was “high risk”, and that there were areas of concern that prevented the territorial authority from issuing a code compliance certificate on reasonable grounds.
- 2.10 In a letter dated 2 December 2003, the building certifier asked the territorial authority to clarify the reasons why it declined to issue a code compliance certificate. The territorial authority responded by letter on 10 December 2003. The territorial authority stated that it could not issue a code compliance certificate as the building was of a face-sealed construction with no cavity.
- 2.11 The building certifier wrote to the territorial authority again on 16 December 2003, requesting the territorial authority to state what were the reasonable grounds for its decision not to issue a code compliance certificate, and also for it to issue a Notice to Rectify.
- 2.12 The territorial authority wrote to the building certifier on 23 December 2003, referring to an adjudication that established that a more rigorous approach to inspections was required by territorial authorities. The territorial authority also listed items of non-compliance and stated that it was of the view that a Notice to Rectify was not appropriate at this stage.
- 2.13 The building certifier responded by letter on 30 January 2004, noting that it had carried out appropriate inspections, responded to the non-compliance issues raised by the territorial authority, and again asked for reasons why the territorial authority considered that the cladding system was non-compliant.
- 2.14 The territorial authority did not issue a Notice to Rectify as required under section 43(6) of the Act.
- 2.15 The owner applied for a determination on 11 October 2004.

3 THE SUBMISSIONS

- 3.1 The territorial authority made a submission in the form of a letter to the Authority dated 23 November 2004, which summarised the consent and inspection processes relating to the house. The territorial authority also noted that no specific cladding inspections had been undertaken for the external cladding system. The owner had been informed that, due to the type of monolithic cladding applied to the house, together with its attendant risk factors, the territorial authority was unable on reasonable grounds to accept the compliance of the cladding. The territorial authority noted that the matters of doubt were:

- Whether the installed cladding system complies with clauses B2.3.1 and E2.3.2 of the Building Code.

3.2 The territorial authority supplied copies of:

- The consent documentation;
- The building certifier's inspection documentation;
- The plaster system supplier's producer statement; and
- The correspondence with the owner and the building certifier.

3.3 The owner supplied copies of:

- The plans and specifications;
- The consent documentation; and
- The building certifier's inspection documentation; and.
- The correspondence with the territorial authority and the building certifier.

3.4 The copies of the submissions and other evidence were provided to each of the parties. Neither the owner nor the territorial authority made any further submissions in response to the submissions of the other party.

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 B2.3.1 and E2.3.2 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 Authority commissioned an independent expert ("the expert") to inspect and report on the cladding. The expert inspected the building on 14 March 2005, and furnished a report dated April 2005. It noted that the textured finish, with one exception, is in good condition throughout. The expert removed the plaster coating to reveal the window perimeter details at two locations, and noted that the windows were fully flashed and installed in accordance with the manufacturer's recommendations. The expert was of the opinion that control joints were not required for a house with the dimensions of the one in question. The expert also made the following comments regarding the cladding:

- The recommended clearances are not achieved at two locations where the base of the wall cladding adjoins roofing;
- The base of the cladding is in close proximity to the paved ground on the southeast and northeast elevations;
- There is horizontal cracking evident in the cladding at the garage door location;
- The textured coating is not continuous behind the barge boards to the stairwell roof, nor where the end deck timbers penetrate the wall;
- The deck construction penetrates the cladding and thereby lacks the required 40mm gap recommended by the manufacturer; and
- Some penetrations through the cladding are inadequately sealed.

5.2 The expert took non-invasive readings at the interior linings of the external walls throughout the house and no raised moisture levels were recorded. The expert also took invasive moisture readings and obtained the following high level results:

- 25.5% and 34.5% adjacent to the garage feature parapet; and
- 40.0+% (At two locations) above the garage door opening.

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

5.3 The expert also referred to the reasons given by the territorial authority for their non-issue of a code compliance certificate that related to the building work. The expert agreed with 5 of the territorial authority's concerns, but noted that the house had building paper installed behind the cladding and that proprietary flashings are installed to the windows.

5.4 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 and E2, 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:

- Has no eaves or verge projections that would provide protection to the cladding areas below them. However, the wide deck affords protection to the southwest wall cladding;
- Is in a high wind zone;
- Is two storeys high;
- Is of a fairly complex shape on plan, with roofs that have hip and wall to roof junctions;
- Has one external deck, and one enclosed balcony built over a habitable space;
- Has windows and doors that are fully flashed;
- Has lower level roof spaces that assist in the ventilation of the external wall cavities above them; and
- Has external wall framing that is unlikely to be treated to a level that would help prevent decay if it absorbs and retains moisture.

Weathertightness performance

6.3 Generally, the cladding appears to have been installed according to good trade practice and to the manufacturer's instructions, but some junctions, edges, and penetrations are not well constructed. These areas are described in paragraph 5.1, and in the expert's report, as being:

- The recommended clearances not being achieved at two locations where the

base of the wall cladding adjoins roofing;

- The base of the cladding being in close proximity to the paved ground on the southeast and northeast elevations;
- The horizontal cracking evident in the cladding at the garage door location;
- The non-continuous textured coating behind the barge boards to the stairwell roof, and where the end deck timbers penetrate the wall;
- The lack of the required 40mm gap where the deck construction penetrates the cladding; and
- The inadequately sealed penetrations through the cladding.

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 external doors and windows are fully flashed; and
- The house has lower level roof spaces that assist in the ventilation of the external wall cavities above them.

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.

6.6 I note that one elevations of the house demonstrates a moderate weathertightness risk rating and the remaining elevations a high 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 am satisfied that the current performance of the cladding is not adequate because it is allowing water penetration into the wall framing at several locations. Consequently, I am not satisfied that the cladding system as installed on the house complies with clause E2 of the building code.

7.2 In addition, the house 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 house will allow the ingress of moisture in the future, the house does not comply with the durability requirements of clause B2 of the building code.

- 7.3 I consider that, because the faults that have been identified with this cladding occur in discrete areas, I am able to conclude that satisfactory rectification of the items outlined in paragraph 6.3 is likely to result in the house being weathertight and in compliance with clauses B2 and E2, notwithstanding the lack of a ventilated cavity.
- 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 It is emphasised 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.
- 7.6 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 Building Act 1991, I hereby determine that the cladding system as installed on the house does not comply with clause E2 of the building code. There are also a number of items to be remedied to ensure that the house remains weathertight and thus meet the durability requirement of the code. Consequently, I find that the house does not comply with clause B2. Accordingly, I confirm the territorial authority's decision to refuse to issue a code compliance certificate.
- 8.2 I also find that rectification of the items outlined in paragraph 6.3 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 house being weathertight and in compliance with clauses B2 and E2, notwithstanding the lack of a ventilated cavity.
- 8.3 I note that the territorial authority has not issued a Notice to Rectify. The territorial authority should do so and the owner is then obliged to bring the house 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, 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 19 May 2005.

John Gardiner
Determinations Manager