

Determination 2005/131

Refusal of a code compliance certificate for a house with a “monolithic” cladding system at 28 Avonbrook Lane, Pukekohe – House 112

1 THE DISPUTE TO BE DETERMINED

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004 (“the Act”) made under due authorisation by me, John Gardiner, Determinations Manager, Department of Building and Housing, for and on behalf of the Chief Executive of that Department. The applicants are the owners Mr and Mrs Kathnaur (referred to throughout this determination as “the owner”), and the other party is the Franklin District Council (referred to throughout this determination as “the territorial authority”). 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 The question to be determined is whether I am satisfied on reasonable grounds that the monolithic wall cladding as installed to the upper areas of the timber-framed external walls of the house (“the cladding”), complies with the building code (see sections 177 and 188 of the Act). By “the 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 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 is a single-storey house situated on a level site that is in a low wind zone in terms of NZS 3604: 1999 “Timber framed buildings”. The house is of a relatively simple shape on plan with pitched roofs at varying levels that have hip, valley, and wall-to-roof junctions. The exterior walls are of conventional light-timber frame construction built on concrete ground floor slabs. The lower sections of the external walls are faced with a brick veneer and the wall areas above the veneer are sheathed with monolithic cladding. Apart from one short length, there are 350mm wide eaves and verge projections to the roofs. The roof is extended over the main entrance and this extension is supported on two circular columns and infilled with a gable end.
- 2.2 I have not been provided with any evidence of the treatment, if any, of the external wall framing.
- 2.3 The cladding system to the upper areas of the exterior walls is what is described as monolithic cladding and consists of 7.5mm “Eterpan” fibre-cement backing sheets fixed directly to the framing over the building wrap. Over this, a 60mm thick “Insulclad” plastered polystyrene system has been applied. The plaster is finished with a paint coating system. According to the builder, the “Insulclad” was applied to accommodate shortcomings in the fibre-cement backing sheet application. This amendment does not appear to have been referred to by the territorial authority.
- 2.4 Plaster Systems Ltd provided a “Producer Statement” dated 19 March 2004 for the “Insulclad” system.

Sequence of events

- 2.5 The territorial authority issued a building consent on 15 January 2002.
- 2.6 The territorial authority carried out various inspections throughout the construction of the units and passed the pre-line building inspection on 21 March 2002. Final inspections were undertaken by the territorial authority up to 24 September 2003 and none of these resulted in the house being passed as fully compliant.
- 2.7 The territorial authority issued an interim code compliance certificate on 3 July 2002. This was issued with a condition that “the grounds to be completed in accordance with the building code”.
- 2.8 A further final inspection took place on 4 February 2004. The territorial authority wrote to the owner on 9 February 2004, stating that the February final inspection was unable to determine what type of monolithic cladding had been applied to the house, nor whether a drainage cavity had been installed. The territorial authority noted that recent information had indicated that monolithic cladding without a cavity might not meet the appropriate clauses of the building code.
- 2.9 The territorial authority did not issue a Notice to Rectify as required by section 43(6) of the Building Act 1991.

2.10 The owner applied for a determination on 10 May 2005.

3 THE SUBMISSIONS

3.1 In a covering letter to the Department, the owner described some of the events leading up to this determination. The owner was of the opinion that the territorial authority was at fault for not inspecting the building properly during its construction.

3.2 The owner provided copies of:

- the building plans
- some territorial authority inspection documentation
- the territorial authority’s letter to the owner dated 9 February 2004
- the interim code compliance certificate
- the “Insulclad” producer statement
- a memorandum from the builder dated 1 December 2004, which described the amended cladding system and stated that the carpentry work was carried out in line with the best building practices current at the time of construction
- two photographs showing the house.

3.3 The territorial authority provided copies of:

- some inspection documentation
- its letter to the owner dated 9 February 2004.

3.4 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 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 22 of the Act or section 49 of the Building Act 1991 that cover the cladding. The cladding is not currently certified under section 269 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 Department has made the following general observations, which remain valid in this case in my view, about acceptable solutions and alternative solutions.

- 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.

5 THE EXPERT'S REPORT

5.1 The expert inspected the cladding of the building on 29 July 2005 and furnished a report that was dated 1 August 2005. It was the expert's opinion that, apart from some minor cracking, the exterior finish is of good quality and the plaster is of a consistent thickness and is evenly applied. The expert considered that control and expansion joints are not required for this house. The expert made the following comments regarding the cladding:

- the top of the cladding outside the ensuite bathroom is exposed and does not have adequate protection against the intrusion of moisture
- there is minor cracking along the edges of the jambs of the exterior joinery units and also where the base of the cladding adjoins the sill of the brick veneer
- the remedial work carried out to the base of the cladding outside the family room is unsatisfactory
- the garage door opening lacks a head flashing. However, the expert does not consider this to be a problem as the opening is 150mm below the eaves and as a consequence is adequately protected
- there are no flashings around the meter box and the gas heating unit.

5.2 The expert took invasive readings through the interior linings of the exterior walls and readings between 10.5% and 16.8% were obtained. Moisture levels above 18% recorded after cladding is in place generally indicate that external moisture is entering the structure.

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 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 Building Industry 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, apart from one small length, 350mm eaves and verge projections, which, together with the entrance roof overhang, provide some protection to the cladding areas below them
- is in a low wind zone
- is one storey high
- is of a simple shape on plan with roofs that have hip, valley, and wall-to-roof junctions
- has no decks or balconies
- has external wall framing that is not likely to be treated to a level that is effective in helping 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, 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 top of the cladding being exposed outside the ensuite bathroom
- the minor cracking along the edges of the jambs of the exterior joinery units and also where the base of the cladding adjoins the sill of the brick veneer
- the unsatisfactory remedial work carried out to the base of the cladding outside the family room
- the lack of flashings around the meter box and the gas heating unit.

6.4 I accept the expert's opinion that, as the garage door opening is protected by the

eaves projection immediately above it, the lack of a head flashing over the garage door is acceptable.

6.5 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 as:

- the cladding generally appears to have been installed according to good trade practice
- the house is single storey and is situated in a low wind zone
- the house has no decks or balconies
- the base of the external walls have an almost continuous brick veneer that could assist in the drainage and ventilation of the upper sections of the walls.

These are compensating factor assisting the performance of the cladding in this particular case. These factors also help to compensate for the lack of a full drainage and ventilation cavity and can assist the house to comply with the weathertightness and durability provisions of the building code.

6.5 I note that all elevations of the building 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 house 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.

7.1 Subject to further investigations that may identify other faults, I consider that, because the faults that have been identified with this cladding by the expert 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 building being weathertight and in compliance with clauses B2 and E2.

- 7.2 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, repainting, replacing sealants, and so on.
- 7.3 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.
- 7.4 I decline to incorporate any waiver or modification of the building code in this determination.

8 THE DECISION

- 8.1 In accordance with section 188 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 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.
- 8.3 I note that the territorial authority has not issued a Notice to Rectify. The territorial authority should now issue a notice to fix, and the owner is then obliged to bring the building 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.
- 8.4 I would suggest that the parties adopt the following process to meet the requirements of clause 8.3. Initially, the territorial authority should issue the notice to fix, listing all the items that the territorial authority considers to be non-compliant. 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. As indicated earlier in this determination, the Chief Executive might already have decided upon some of the issues that may be raised by the territorial

authority in its notice to fix, including the territorial authority's requirement, if any, for a ventilated and drained cavity or equivalent. Under subsection 179(2)(c) of the Act, "the Chief Executive may refuse an application if the Chief Executive has made a determination...on the same matter"

- 8.5 Finally, I consider that the cladding will require ongoing maintenance to ensure its continuing code compliance.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 6 September 2005.

John Gardiner
Determinations Manager