

Determination 2005/118

Refusal of a code compliance certificate for a building with a “monolithic” cladding system: House 103

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 two joint-owners (referred to throughout this determination as “the owner”), and the other party is the Auckland City 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 6-year old house unless changes are made to its monolithic cladding systems.
- 1.2 The question to be determined is whether on reasonable grounds the monolithic wall cladding as installed to 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 work consists of a two-storey house, situated on a level site in a medium wind zone in terms of NZS 3604: 1999 “Timber framed buildings”. The external walls of the house are of conventional light timber frame construction built

on concrete block foundation walls, and are sheathed with monolithic cladding. The house is of a fairly complex shape, with the pitched roofs having hip, valley, and wall to roof junctions. There are no eaves or verge projections. A small flat roof is constructed over the main entrance. A timber balcony with a timber-framed balustrade is situated at the upper floor level, and is constructed partially over a habitable area. A monolithic-clad timber-framed chimney is constructed in one external wall. A timber pergola is constructed over the southwest elevation terrace.

- 2.2 The owner has produced invoices indicating that H1 treated timber was used on the wall framing of the house. However, I have not received evidence as to the type of treatment that was applied to the framing timber.
- 2.3 The new timber-framed external walls and columns of the house that are the subject of this determination are clad with a system that is described as monolithic cladding. In this instance it incorporates 4.5mm thick fibre-cement sheets fixed through the building wrap directly to the framing timbers, reinforcing mesh spaced off the backing, and a 20mm thickness of three-coat solid plaster finished with a paint system.

Sequence of events

- 2.4 The territorial authority issued a building consent in late 1997. The territorial authority listed notifiable inspections on the consented plans, and noted that stucco plastering was to be used.
- 2.5 The territorial authority carried out various inspections during the construction of the house, and passed the pre-line inspection on 6 May 1998, and the stucco/mesh inspection on 2 June 1998. The territorial authority carried out a final inspection on 1 October 1998, and only one item, which did not relate to the cladding, did not pass this inspection.
- 2.6 The territorial authority carried out an external cladding inspection on 2 March 2005. In a letter to the owner dated 10 March 2005, the territorial authority regretted that the building might not comply with the building code in a number of respects. The territorial authority attached a Notice to Rectify also dated 10 March 2005 to this letter, together with a set of photographs illustrating items of non-compliance. The "Particulars of Contravention" attached to the Notice to Rectify listed requirements under the following headings:
1. Items not installed per the manufacturer's specifications;
 2. Items not installed per the acceptable solutions of the building code, (no alternative solutions had been applied for, other than for the cladding system previously approved);
 3. Items not installed per accepted trade practice;
 4. Ventilated cavity system;
 5. Durability; and

6. Documentation required to help confirm compliance.

2.7 The owner applied for a determination on 29 March 2005.

3 THE SUBMISSIONS

3.1 In a covering letter to the Department received on 13 April 2005, the owner noted that the stucco plaster had passed inspection, and that the two outstanding non-cladding items identified in a final inspection were passed in a territorial authority “recheck”. The owner also described the relevant tradespersons who had constructed the house.

3.2 The owner also forwarded copies of:

- The plans;
- Some of the territorial authority’s inspection records;
- The Notice to Rectify;
- The correspondence with the territorial authority; and
- Invoices identifying the framing timber and other materials used on the project.

3.4 In a covering letter to the Authority dated 15 April 2005, the territorial authority described the Particulars of Contravention and the specific construction defects.

3.4 The territorial authority also forwarded copies of:

- The plans;
- Some of the consent documentation;
- Some of the territorial authority’s inspection records;
- The Notice to Rectify; and
- The correspondence with the owner.

3.5 Copies of the submissions and other evidence were provided to each of the parties.

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 compliance documents that have been approved under section 22 of the Act or under section 49 of the Building Act 1991 that cover this cladding. The current Acceptable Solution, E2/AS1, allows for solid plaster systems with fibre cement backing sheets, but requires that they be fixed on battens to create a 20mm cavity between the sheet and the framing. The previous acceptable solution E2/AS1, which was current when this consent was issued, allowed for mesh reinforced solid plaster to be applied to fibre cement backing sheets that were face fixed to the framing. 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 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 DISCUSSION

General

- 5.1 I have considered the submissions of the parties, 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.
- 5.2 I am of the opinion that the detailed information supplied in the Notice to Rectify, in this case, enables me to determine the issue without the need to appoint an independent expert to further investigate the cladding.

Weathertightness risk

- 5.3 In relation to the weathertightness characteristics, I find that the house:
- Has no eaves or verge projections that could provide protection to the cladding areas below them;
 - Is in a medium wind zone;

- Is 2 storeys high;
- Is fairly complex on plan, with roofs that have hip, valley, and wall to roof junctions;
- Has one external balcony that is constructed partially over a habitable space; and
- Has external wall framing that is likely to be treated to a level that would help prevent decay if it absorbs and retains moisture.

Weathertightness performance

- 5.4 The territorial authority's Notice to Rectify describes items of non-compliance as regards the cladding, and the photographs provided by the territorial authority further illustrate these.
- 5.5 Notwithstanding the fact that the backing sheets are fixed directly to the timber framing, thus inhibiting drainage and ventilation behind the cladding sheets, I do not accept that the lack of a drainage and ventilation cavity in itself prevents the house from complying with the weathertightness and durability provisions of the building code.
- 5.6 I note that one elevation of the house demonstrates a medium 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.

6 CONCLUSION

- 6.1 I am satisfied that the current performance of the cladding is not adequate because of the areas of non-compliance described by the territorial authority. Consequently, as I have received no evidence to the contrary, I am not satisfied that the cladding system as installed on the house complies with clause E2 of the building code.
- 6.2 In addition, the house 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 may at present, or eventually will, allow the ingress of moisture, the house does not comply with the durability requirements of clause B2 of the building code.
- 6.3 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.

6.4 I observe that the question as to whether building work has been properly completed and is code compliant requires careful inspection. I do not believe in this case that the territorial authority's inspections meet this standard. I note that the territorial authority's inspection recorded in a "Final Inspection Checklist Residential" dated 1 October 1998 passed the following items in respect of the exterior of the building:

- FFL above surface areas, street and rear boundary;
- Weather sealing of cladding; and
- In addition, the only item shown as requiring attention after this inspection was a barrier – nothing to do with the exterior cladding.

The Notice to Rectify issued on 10 March 2005 listed Particulars of Contravention that included reference to:

- Cladding coming down too close to paved and unpaved surfaces;
- Bottom edges of sheet cladding not being sealed;
- Cracking of the cladding;
- Flashings not installed correctly at junctions of surfaces;
- Window openings in the cladding not properly flashed;
- Flashings not installed at junctions of dissimilar materials;
- Junction between window head flashing and wall cladding sealed when it should not be sealed; and
- Cladding not taken up behind barge, facial (sic) boards and the like.

6.5 I am disturbed to note that these obvious departures from the building code were not discovered during the October 1998 final inspection. They are issues that are unrelated to the question of a cavity that the territorial authority has raised. In my view the failure to detect these defects in the building at the time of the final inspection in October 1998 calls into question the level of care with which that inspection was conducted. Further it is evident that since October 1998 and until March 2005, the owner was entitled to believe that the only matter obstructing the issue of a Code Compliance Certificate was the matter of a barrier to a deck.

6.6 In the circumstances, I decline to incorporate any waiver or modification of the building code in this determination.

7 THE DECISION

- 7.1 In accordance with section 188 of the Act, I hereby determine that the cladding system as installed on the house does not comply with clauses B2 and E2 of the building code. Accordingly, I confirm the territorial authority's decision to refuse to issue a code compliance certificate.
- 7.2 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 Building Industry Authority has 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 to fix should be issued that requires the owners to bring the cladding into compliance with the building code, without specifying the features (in particular a cavity, although the parties may conclude that this is the best system) that are required to be incorporated. The owner should then produce a response to the notice in the form of a technically robust proposal, produced in conjunction with an expert, as to the rectification or otherwise of the matters that arise in the notice. Any outstanding matters of disagreement between the owner and the territorial authority can then be referred to the Chief Executive for a further binding determination.
- 7.3 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 8 August 2005.

John Gardiner
Determinations Manager