

Determination 2008/45

Refusal to issue a code compliance certificate for a house at 4 Highland Lass Place, Langs Cove, Whangarei



1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004¹ (“the Act”) made under due authorisation by me, John Gardiner, Manager Determinations, Department of Building and Housing (“the Department”), for and on behalf of the Chief Executive of that Department. The applicants are C Paterson and J Monaghan (“the applicants”), and the other party is the Whangarei District Council (“the territorial authority”). I have treated Harmony Homes Ltd (“the builder”) as a person with an interest in the matter.
- 1.2 This determination arises from the decision of the territorial authority to refuse to issue a code compliance certificate for a five-year-old house because it was not satisfied that it complied with certain clauses of the Building Code² (First Schedule, Building Regulations 1992).
- 1.3 I consider that the matter for determination is whether the cladding as installed to the walls of the house, together with the waterproofing of the walls below ground level

¹ The Building Act 2004 is available from the Department’s website at www.dbh.govt.nz.

² The Building Code is available from the Department’s website at www.dbh.govt.nz.

(“the waterproofing”), comply with Clauses B2 and E2 (see sections 177 and 188 of the Act). By “the cladding as installed” I mean the components of the systems (such as the backing materials, the flashings, the joints and 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 (“the expert”) commissioned by the Department to advise on this dispute, and the other evidence in this matter. I have evaluated this information using a framework that I describe more fully in paragraph 6.
- 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 situated on an excavated steeply sloping site that is in a high wind zone for the purposes of NZS 3604³. The house is reasonably complex in plan and form and is of timber-framed construction on concrete slabs and timber-framed floors, with some blockwork retaining walls at the lower level. The steeply pitched roofs have hip, valley, and wall-to-roof junctions, together with 300mm wide eaves and verge projections. The upper floor is cantilevered from the building line for part of the east elevation and this extension is supported on textured-finished timber-framed columns.
- 2.2 A large timber deck, which is partly built over the garage and partly cantilevered, is situated at the upper level of the house on the west elevation. The deck has both monolithic-clad and metal balustrades, and is partly protected by an extension of the roof where it adjoins the main building. A timber framed pergola extends from that extension over part of the deck. The deck, the pergola, and the roof projection are supported on textured-finished columns. A timber-framed monolithic-clad chimney is built against one wall and this is inset into the roofing.
- 2.3 I have received no written evidence as to the treatment, if any, of the external wall framing timber.
- 2.4 The timber-framed walls of the house are clad with a texture-coated fibre-cement sheet system that is directly fixed to the framing over a building wrap.

3. Sequence of events

- 3.1 On 24 May 2001, the territorial authority issued building consent No 50241, under the Building Act 1991.
- 3.2 I have been provided with records relating to inspections of the building work that were carried out from July 2001 to January 2002 by a firm of consultants acting on behalf of the territorial authority.
- 3.3 On 25 February 2002, the territorial authority issued a Notice to Rectify in regard to restoring ground that had moved as a result of site excavations.
- 3.4 A “Field Advice Notice – Final Inspection” notice was issued by the territorial authority on 21 January 2006 (the notice is actually dated 21 January 2009, but I believe, having regard to context, that the date shown is an error).

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

- 3.5 On 16 February 2006, the territorial authority and the builder held a site meeting to discuss repairs to the front deck. The builder wrote to the territorial authority on 17 October 2006, setting out proposals for repairing the deck beam and pillars.
- 3.6 Following a further inspection of the property on 6 November 2007, the territorial authority wrote to the builder on 9 November 2007, stating that it did not believe that the building complied with Clauses B2 and E2. The territorial authority also noted that there was a leak in the basement wall and listed 6 further items that it considered to be non-compliant. The territorial authority also requested certain producer statements and certificates.
- 3.7 On 8 November 2007, the territorial authority issued a notice to fix and the particulars of contravention or non-compliance were:
- Non-compliance with B2 (Durability) and E2 (External Moisture) of New Zealand Building Code (i.e. numerous cracks apparent in Harditex cladding direct fixed to framing and leak through basement blockwall) on building consent 50241.
- 3.8 On 6 December 2007, the builder wrote to the territorial authority stating that a building consent had been issued by the territorial authority for the remedial work discussed at the site meeting of 16 February 2006. The builder also noted that the work was already underway and that the territorial authority had carried out an inspection of that work. The builder required confirmation that re-cladding of the deck, handrail and beam would not be reviewed as part of the determination process.
- 3.9 On 17 December 2007 the territorial authority wrote to the builder, stating that it had not issued a building consent for the remedial work. The territorial authority had inspected the work and provided advice and some suggested details. The work was approved subject to certain waterproofing measures being undertaken. The territorial authority could not guarantee that the rectified work would not be included in the determination process as it was still “effectively under the original building consent”. The territorial authority went on to say that “applying for a determination is not mandatory”, and the builder could consider applying for a building consent to replace the cladding.
- 3.10 On 24 January 2008, the builder emailed the applicants setting out recommendations on how to proceed with the determination process.
- 3.11 The Department received the application for a determination on 22 February 2008.

4. The submissions

- 4.1 In a submission to the Department dated 18 February 2008, the applicants gave some background to the dispute and noted that the basement was still leaking. The applicants also stated that remedial work on the front deck pillars and handrails had commenced but had been halted pending the issuing of the determination.
- 4.2 The applicants forwarded copies of:
- the plans and specification
 - the building consent and associated documentation
 - some inspection records
 - the Notice to Rectify and the notice to fix
 - the correspondence between the builder and the territorial authority.

- 4.3 The territorial authority noted that it did not wish to make a submission.
- 4.4 Copies of the submissions and other evidence were provided to the parties. Neither party made any further submissions in response to the information that was provided.
- 4.5 A copy of the draft determination was sent to the parties and the builder for comment on 15 April 2008. Both parties accepted the draft without comment. The builder made no submission.

5. The expert's report

- 5.1 As discussed in paragraph 1.4, I engaged an independent expert, who is a member of the New Zealand Institute of Building Surveyors, to provide the Department with a report on the elements subject to the determination.
- 5.2 On 20 March 2008, the expert inspected the claddings and waterproofing of the house and furnished a report dated 26 March 2008. The expert noted that the cladding has a rustic texture completed to a satisfactory finish and that the localised repairs to the deck pillars are unfinished. The expert removed small sections of the cladding at various locations and I am prepared to accept that the details revealed at these locations would apply to similar situations throughout the building.
- 5.3 The expert took non-invasive moisture readings throughout the house and, with the exception of the ground floor rumpus room, these were generally within acceptable limits. Invasive testing was also carried out around the house and one reading of 27% was above the base line equilibrium moisture levels indicated by the other readings. The expert also noted signs of water ingress at two locations in the rumpus room and decaying timber at one covered entrance pillar.
- 5.4 Commenting specifically on the cladding and the leaking in the rumpus room, the expert noted that:
- there are no horizontal or vertical control joints formed in the cladding
 - extensive cracking is evident in the cladding at some locations
 - there are no jamb or sill flashings or “inseal” strips installed to the exterior joinery units
 - there is inadequate fixing of the rail at the front entrance
 - the replaced fixings to the deck pillars are not satisfactory
 - some penetrations through the cladding are ineffectually sealed
 - the damp-proofing membrane to the exterior of the lower floor block wall has failed and the ground is hard up against the wall surfaces at these locations.
- 5.5 A copy of the expert's report was provided to each of the parties on 28 March 2008.

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 Solution⁴, 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 are written conservatively to 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 one or more other provisions 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 determinations⁵ (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 a two-storey dwelling
- is in a high wind zone
- is reasonably complicated in plan and form
- has eaves that offer a degree of protection to the walls
- has external wall framing that is not likely to be treated to a level that provides resistance to the onset of decay if the framing absorbs and retains moisture.

6.2.2 The house has been evaluated using the E2/AS1 risk matrix. The risk matrix allows the summing of a range of design and location factors applying to a specific building design. The resulting risk rating can range from 'low' to 'very high'. The risk rating is applied to determine what claddings can be used on a building in order to comply with E2/AS1. Higher levels of risk will require more rigorous weatherproof

⁴ 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.

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

detailing; for example, a high risk level is likely to require particular types of cladding to be installed over a drained cavity.

- 6.2.3 When evaluated using the E2/AS1 risk matrix, the weathertightness features outlined in paragraph 6.2.1 show that the elevations of the house demonstrate a low, medium and high weathertightness risks. I note that, in order to comply with current E2/AS1, the monolithic cladding of this building would require a drained cavity to the elevations with medium and high risk scores.

7 Discussion

- 7.1 I consider the expert's report establishes that the current performance of the cladding and waterproofing is not adequate because they are allowing some water penetration into the building at several locations at present. Consequently, I am satisfied that the building does not comply with Clause E2 of the Building Code.
- 7.2 In addition, 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. There is also some evidence of decaying timber. Because the faults on the building are likely to continue to allow the ingress of moisture in the future, the house does not comply with the durability requirements of Clause B2.
- 7.3 While the list of faults in the cladding and waterproofing described in paragraph 5.4 is not extensive, those relating to the lack of control joints and exterior joinery flashings and the ineffective waterproofing will require extensive remediation.
- 7.4 I find that, because of the extent and apparent complexity of the faults that have been identified with the cladding and waterproofing, I am unable to conclude, with the information available to me, that remediation of the identified faults, as opposed to partial or full reinstatement, could result in compliance with Clauses B2 or E2. I consider that final decisions on whether code compliance can be achieved by either remediation or rectification, or a combination of both, can only be made after a more thorough investigation of the cladding. This will require a careful analysis by an appropriately qualified expert. Once that decision is made, the chosen repair option should be submitted to the territorial authority for its comment and approval. If the territorial authority chooses to reject the proposal, then the applicants are entitled to seek a further determination on whether the proposed remedial work will led to compliance with the requirements of Clauses B2 and E2.
- 7.5 In making this determination, I have accepted the territorial authority's statement that it did not issue an additional building consent for the remedial work undertaken on the deck. I base my conclusion on the fact that I have not been supplied with a copy of such a consent.
- 7.6 Effective maintenance of claddings (in particular monolithic cladding) is important to ensure ongoing compliance with clauses B2 and E2 of the Building Code and is the responsibility of the building owner. The Department has previously described these maintenance requirements, including examples where 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 (for example, Determination 2007/60).

8. What is to be done now?

- 8.1 I note that the territorial authority has issued a notice to fix. I suggest that the territorial authority withdraw the notice, dated 25 February 2002, and issue a new notice to fix that requires the owners to bring the house into compliance with the Building Code, referring to the defects listed in paragraph 5.4, and to any further defects that might be discovered in the course of the rectification work. The notice to fix should not specify how the defects are to be remedied. That is a matter for the owner to propose and for the territorial authority to accept or reject.
- 8.2 I would suggest that the parties adopt the following process to meet the requirements of paragraph 8.1. Initially, the territorial authority should issue the notice to fix. 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.

9. The Decision

- 9.1 In accordance with section 188 of the Building Act 2004, I confirm the territorial authority's decision to refuse to issue a code compliance certificate.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 3 June 2008.

John Gardiner
Manager Determinations