



Determination 2012/010

Regarding the refusal of code compliance certificates for a 12-year-old house with monolithic cladding and a 7-year-old pergola addition at 12 Diana Avenue, Gisborne



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 the owners, Ms P and Mr R Feyen (“the applicants”), and the other party is the Gisborne District Council (“the authority”), carrying out its duties and functions as a territorial authority or building consent authority.
- 1.2 This determination arises from the decision of the authority to refuse to issue code compliance certificates for a 12-year-old building (“the building”) and 7-year-old pergola addition (“the pergola addition”) because it was not satisfied that the building work complied with the Building Code (First Schedule, Building Regulations 1992). The authority’s concerns regarding compliance of the building work relate primarily to the weathertightness of the building (refer paragraph 3.9).

¹ The Building Act, Building Code, Compliance documents, past determinations and guidance documents issued by the Department are all available at www.dbh.govt.nz or by contacting the Department on 0800 242 243

- 1.3 The matter to be determined² is therefore whether the authority was correct to refuse to issue the code compliance certificates. In deciding this, I must consider whether the external envelope of the building and the addition comply with the Clauses E2 External Moisture and B2 Durability of the Building Code³. The “external envelope” includes the cladding, its configuration and components, junctions with other building elements, formed openings and penetrations; 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 expert commissioned by the Department to advise on this dispute (“the expert”), and the other evidence in this matter.

2. The building

- 2.1 The building is a single storey house with an attached garage, located on a flat-to-sloping section in a relatively new residential hilltop suburb. The section has been classified as a very high wind zone and a ‘1’ corrosion zone for the purposes of NZS 3604⁴.
- 2.2 The building has lightweight timber framing, is founded on a solid concrete slab foundation, and is relatively simple in plan and form. The cladding is direct-fixed fibre-cement and the joinery is aluminium throughout.
- 2.3 The roof of the main part of the building is a hip-style roof that has been partially enclosed within perimeter parapet walls with internal gutters. External guttering has been installed along part of the east and north elevations of the building. The garage and entry porch both have low-pitched skillion roofs, and are each enclosed on three sides by perimeter parapet walls with internal gutters. All roofs, apart from the pergola addition, have been clad with a proprietary metal roofing material, and there are no eaves to any elevation.
- 2.4 The expert was unable to establish whether or not the timber framing in the walls and roof of the building had been treated. Given the date of construction in 1999 and lack of other evidence I consider that the wall framing is most likely to be untreated.
- 2.5 The timber pergola addition was constructed over an existing timber deck on the west and south elevations of the building, and is roofed with a polycarbonate roofing material.
- 2.6 I have not seen evidence as to whether the timber used in the construction of the pergola has been treated, although I note that H3 treated timber was specified in the consented plans.

² Under sections 177(1)(b) and 177(2)(d) of the Act

³ 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.

⁴ New Zealand Standard NZS 3604:1999 Timber Framed Buildings.

3. Background

- 3.1 The authority issued building consent BCS9900582 (“the first building consent”) for the house and garage on 26 July 1999, under the Building Act 1991.
- 3.2 The authority carried out seven inspections of the building work, including a pre-line inspection, between 13 August 1999 and 16 November 1999, all of which passed. The authority carried out a ‘final’ inspection of the building work on 11 February 2002, which failed, with the authority noting
- [h]ouse completed ok, but problem with two corners of rooms that have [been] shown to have leaks and wet is getting through and has swelled the skirting etc. Will need to get this sorted before CCC
- 3.3 The authority carried out a second ‘final’ inspection of the building on 1 August 2002, which also failed, with the authority noting there was ‘[s]till water coming in around windows. Owner to rectify.’
- 3.4 It appears that the owner sought rectification from the builder at this time and that an assessment was undertaken by a ‘property and maintenance services’ company. I have not seen a copy of that report. The applicants have advised that the builder installed jamb flashings to the windows, however other than those areas noted by the expert (refer paragraph 5.4.1) I am not aware of any further remedial work.
- 3.5 The authority issued building consent BCS3209 (“the second building consent”) for the pergola addition to the original building on 18 May 2004, under the Building Act 1991.
- 3.6 The authority’s documents show that a siting/foundation inspection of the pergola addition was carried out on 3 June 2004, which passed; however it appears that a final inspection was not carried out and no code compliance certificate has been issued.
- 3.7 In an email to the applicants dated 28 September 2011, the authority mentioned the applicants’ request for an inspection ‘to check out the house and pergola’, and proceeded to explain it had concerns regarding the house having a monolithic cladding system, with internal gutters and no soffits.
- 3.8 The applicants and the authority exchanged a number of emails between 28 September 2011 and 18 October 2011. In the emails, the applicants and the authority discussed the items of concern and the process of resolving these concerns in order that code compliance certificates could be issued for the building work.
- 3.9 In a letter to the applicants dated 7 October 2011, the authority restated its refusal to issue code compliance certificates for the building and the pergola addition noting the age of the building work and stating that
- [the authority] cannot be sure that this dwelling will meet the requirements as outlined in the Build Code (sic) under B2 and E2.
- 3.10 It appears that a further ‘final’ inspection of the building work and pergola addition was undertaken by the authority, at the applicants’ request, on 6 October 2011. Although I have not seen the inspection record, I note that in an email to the

applicants dated 17 October 2011 the authority provided a list of items that ‘stood out during the inspection’ as follows:

- Water damage on some of the window jambs.
- Water damage to part of the garage ceiling.
- Roof flashings, internal gutter capping.
- Replaced/repaired bit of cladding by spa.

The authority further noted that ‘the age, cladding type, design and construction all contribute to us not being able to issue a [code compliance certificate] at this time’.

3.11 The applicants applied for a determination which was received by the Department on 25 October 2011.

4. The submissions

4.1 The applicants forwarded copies of

- the building consents
- plans and specifications for the building and the pergola addition
- inspection records for the first building consent
- various correspondence between the parties

4.2 The authority acknowledged the application for determination but did not make a submission in response.

4.3 A draft determination was issued to the parties for comment on 12 January 2012. The authority accepted the draft, clarifying the date of the final inspection, which has subsequently been amended. The applicants accepted the draft without further comment, with the final response received by the Department on 17 February 2012.

5. The expert’s report

5.1 As mentioned in paragraph 1.4, I engaged an independent expert, who is a member of the New Zealand Institute of Building Surveyors, to assist me. The expert inspected the house on 6 December 2011, and furnished a report that was completed on 12 December 2011.

5.2 The expert noted that the building work as constructed differed from the consented drawings as follows:

- (a) No 100mm step between the garage and main building was provided
- (b) The layout of the Bathroom was altered
- (c) The size and type of garage and bedroom 1 windows amended
- (d) The parapet polystyrene capping was amended
- (e) The Butynol lining to the internal gutters was omitted and replaced with a colorsteel lining

- (f) The low level pitched roof above the garage is constructed to a lesser pitch than the 4° illustrated on the consent drawings
- (g) The rainwater discharge from the roof is via galvanized scuppers into rain heads and differs from that consented
- (h) The overlap of the parapet flashing with the Pergola roof flashing is significantly less than shown
- (i) The Pergola roofing differs from that stated on the consented drawings
- (j) Spouting omitted at perimeter of Pergola roof

5.2.1 The expert noted that the internal and external cladding surfaces are generally 'reasonably straight and true' and that the exterior cladding has been finished with adequate ground clearance on most elevations.

5.3 Moisture testing

5.3.1 The expert inspected the interior of the building and took invasive moisture readings at several locations. Though no 'significantly elevated readings' were recorded the expert observed a number of areas where moisture ingress was evident as follows:

House

- swollen plasterboard in the lounge ceiling directly adjacent to the position of the coach bolt fixings for the pergola ribbon plate (see paragraph 5.4.1), with the damage in line with an overflow hole to the fascia and beneath a stain confirming that moisture had entered between the gutter and fascia above

Garage

- signs of moisture entry in the ceiling of the garage, including moisture staining above the side door
- visibly rotten jamb linings and inner sill to the garage side door
- areas of water staining evident on the internal linings of the south wall of the garage, including mold growth above the skirting level
- in the garage: swollen coving at ceiling level and skirting at ground level, and a sagging ceiling lining

5.3.2 The expert also noted bulging of the skirting and deterioration of the inner sill lining below the windows in the bedrooms and dining room, and considered this was likely due to inadequate provision for drainage of condensation moisture.

5.3.3 The expert took three invasive moisture readings through the exterior cladding at areas considered at risk, and noted the following elevated readings or signs of moisture:

- 24% in the bottom plate adjacent to the garage door on the east elevation
- 24% in the bottom plate adjacent to the garage door below scupper and repaired upstand
- 28% in the bottom plate below the kitchen window on the north elevation.

- 5.3.4 I note that moisture readings above 18%, or which vary significantly, generally indicate that moisture is entering the structure, and further investigation is needed.

5.4 The external envelope

- 5.4.1 Commenting specifically on the envelope of the building addition the expert noted:

House and Garage

- the metal capping to the parapet above an area of moisture damage in the main bedroom, and also where top fixings had been provided in the past, has been repaired using sealant at the corner junction
- the lap to the metal capping provided to the parapet directly above the garage side door is raised, and fixings through the top surface have been filled with sealant
- the inadequate fall on the garage roof is not in accordance with consented plans and is less than the minimum 3° required by the manufacturer, and water is holding at the ends of the guttering
- open gaps are visible where a sealant repair to the metal upstand of an internal gutter is deteriorating at the base of the repair
- at the area where the scupper serving the internal gutter passes through the perimeter parapet, the sealant joint is ineffective and is failing
- cladding extends below ground level in areas adjacent to the garage and the main entrance on the north elevation of the building
- lack of flashings around the perimeter of the electric meter box and intake on the north elevation of the building, and acrylic panels to the meter box are missing
- lack of flashings at the junction of the gas entry point housing and the cladding on the north elevation of the building, and a section of the fibre-cement sheeting in this location was not provided with any texture coating (although the face of the sheet had been sealed)
- no vertical control joints installed to the north and south elevations
- although the roofing iron extends over the gutter, this overhang is not extensive, the iron has not been turned down in the troughs as is good practice, and the building paper beneath does not extend into the gutter
- flashings at roof level and generally are predominantly reliant on silicone sealant at junctions and fixing points, and are 'reliant therefore on continual high-level maintenance to remain effective'
- at the junction with the adjacent walls to the entrance porch and garage metal flashings are provided which, although not provided with kick-outs, do divert rainwater into the gutter. However the flashing are holed where nails have previously penetrated, and similar detailing is evident to the north facing elevation, where water may enter behind the fascia where there are gaps

Pergola

- sealant, which is deteriorating and is not adequate to prevent moisture ingress, has been used to protect the ribbon plate/wall junction of the pergola
- metal apron flashings have been provided to prevent moisture penetration at the junction of the ribbon plates with the clad walls, however to the northern end of the pergola the coach bolt fixings are positioned outside of the flashing and roof protections area (refer also paragraph 5.3.1)

5.4.2 The expert also noted that the exterior wall cladding of the building has not been installed in accordance with the manufacturer's technical information document applicable at the time of construction in respect of the following elements:

- lack of a 50mm overhang of the cladding over the bottom plate of framing and omission of sealing strip at base of cladding
- lack of texture-coating to all areas of fibre-cement sheeting and lack of seal at base of cladding
- provision of metal flashing to base of cladding as an alternative method of detailing without the manufacturer's approval.

5.4.3 The expert observed that the windows and doors have been provided with head and jamb flashings but no sill flashings. The expert noted that the head flashings do not extend past the window openings to the extent required by the cladding manufacturer, but that '[t]he flashings appeared from a visual inspection to be operating effectively'.

5.5 A copy of the expert's report was provided to the parties on 12 December 2011.

6. Weathertightness

6.1 The evaluation of building work for compliance with the Building Code and the risk factors considered in regards to weathertightness have been described in numerous previous determinations (for example, Determination 2004/1).

6.2 Weathertightness risk

6.2.1 This building has the following environmental and design features which influence its weathertightness risk profile:

Increasing risk

- the building is in a very high wind zone
- the building has no eaves to shelter the cladding
- there are some complex roof-to-wall junctions
- the cladding is direct fixed to untreated timber framing.

Decreasing risk

- the building is relatively simple in plan and form
- the building is a single storey building
- the deck is free standing and at ground floor level.

6.2.2 When evaluated using the E2/AS1 risk matrix, the house has a medium weathertightness risk rating. I note that, if the details shown in the current E2/AS1 were adopted to achieve code-compliance, the monolithic cladding to this building would require a drained cavity. However, I also note that a drained cavity was not a requirement of E2/AS1 at the time of construction.

6.3 Weathertightness performance

6.3.1 Taking account of the expert's report, I conclude that remedial work is necessary in respect of the matters described in paragraphs 5.4.1 and 5.4.2. This remedial work includes but is not limited to:

- the ribbon plate/wall junction where the pergola addition abuts the building
- the lack of movement joints in the cladding
- areas where high moisture readings were obtained the bottom plates should be checked for possible moisture damage
- the inadequate clearance between the base of the cladding and ground level in several locations.

Because of the limited invasive undertaken by the expert, I am unable to conclude on the extent of the faults in the building.

6.3.2 I note the expert's comments regarding the flashings at windows and doors in paragraph 5.4.3, and accept that these areas are adequate in the circumstances.

6.4 Weathertightness conclusion

6.4.1 I consider the expert's report establishes that the current performance of the external envelope of the building is inadequate because it is currently allowing water penetration through the cladding. Consequently I am satisfied that the external envelope does not comply with Clause E2 of the Building Code.

6.4.2 In addition, the external envelope of the building and pergola addition is 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 building to remain weathertight. Because the faults in the building are likely to allow ingress of moisture in the future, the building work does not comply with the durability requirements of Clause B2.

6.4.3 It is clear from the expert's report that the building is unsatisfactory in terms of its weathertightness risk and performance and considerable work is required to make it code-compliant. Given the extent of non-compliance with Clause E2, the lack of treatment to the external framing and the expert's limited investigation, the building's current and ongoing compliance with Clause B1 must also be considered in any further investigation. The rectification of the building will therefore require careful investigation into the causes, extent, level and significance of moisture ingress and possible decay, and any required timber replacement in the framing.

7. What happens next?

- 7.1 I note that the authority has not issued a notice to fix. A notice to fix should now be issued that requires the owner to bring the building and the pergola addition into compliance with the Building Code, identifying the items listed in paragraphs 5.4.1 and 5.4.2, and referring to the investigation required and any further defects that might be discovered in the course of rectification, but not specifying how those defects are to be fixed. It is not for the notice to fix to stipulate directly how the defects are to be remedied and the building work brought into compliance with the Building Code. That is a matter for the owner to propose and for the authority to accept or reject.
- 7.2 I suggest that the parties adopt the following process to meet the requirements of paragraph 7.1. Initially, the authority should issue the notice to fix. The owner should then produce a response to this in the form of a detailed proposal, produced in conjunction with a competent and suitably qualified person, as to the rectification or otherwise of the specified items. The applicants will also need to apply to amend the building consents to reflect the as built construction. Any outstanding items of disagreement can then be referred to the Chief Executive for a further binding determination.

8. The decision

- 8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the building and the pergola addition do not comply with Clauses B2 and E2 of the Building Code, and accordingly I confirm the authority's decision to refuse to issue the code compliance certificates for building consents BCS9900582 and BCS3209.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 20 February 2012.

John Gardiner
Manager Determinations