



Determination 2009/36

Dispute over the code compliance of a proposed balustrade system to be fixed to a deck at 18 Charlotte Way, Raumati South



1. The matters 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 applicant is the owner, the Mr R Reder and the other party is the Kapiti Coast District Council (“the authority”), carrying out its functions as a territorial authority or building consent authority.
- 1.2 The application is in respect of a decision by the authority to refuse to approve a proposed method of fixing a balustrade to deck as an amendment to a building consent.
- 1.3 I therefore take the view that the matter for determination in terms of section 177(a) and 177(b)(vi) is whether the authority was correct in its decision to refuse to amend the building consent because it was not satisfied that the balustrade fixings of the proposed balustrade system, when installed on the existing deck, would comply with Clauses B1, B2 and E2 of the Building Code².
- 1.4 The authority has confirmed that its concern with the proposed balustrade system is the performance of the balustrades fixings themselves and the weathertightness of the deck, due to the possibility of the top fixing of the balustrade moving relative to the

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.

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.

deck. Therefore, the matter to be determined will not consider the code compliance of the proposed balustrade system itself, other than the code compliance of the proposed detail to fix the balusters to the deck.

- 1.5 I note the notice to fix dated 16 February 2009, cites all the changes to the building consent mentioned in paragraph 3.6, and the notice to fix therefore cites non-compliance with Clauses B1, B2, E2, F2, and F4. This determination is limited to the code compliance of the balustrade fixing with respect to the Clauses B1, B2 and E2 only. The code compliance of the deck or the balustrade itself is therefore not considered in this determination.
- 1.6 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 work consists of a detached house situated on a steeply sloping site, which is in a high wind zone for the purposes of NZS 3604³. The house is a fairly simple in plan, two-storey high house, with a large first storey deck on the east side and part of the south side of the house.
- 2.2 Construction is generally conventional light timber frame, with concrete foundations. The house is clad in bevel-backed weatherboards, except the west ground floor exterior, which is 200 series concrete block. The joinery is powder-coated aluminium and the roof is corrugated steel.

2.3 The existing deck

- 2.3.1 The large, first-floor, timber-framed deck is supported by specifically designed 125×125 H5 gauged posts and their concrete foundations, and specifically designed lintel and joist details.
- 2.3.2 The deck membrane system (“the membrane”) is a BRANZ appraised liquid applied system called Sonoshield Sonoguard. The membrane used on the deck varies from the consented membrane system. The membrane supplier provided a ten year product guarantee for the membrane, and the contractor who installed the membrane provided a two year workmanship guarantee.
- 2.3.3 The deck has joists perpendicular to the edge joists, with nogs installed at the joist ends. The deck has plywood laid over the joists while the plinths were glued and screwed to the plywood decking.
- 2.3.4 While the timber deck, plinths, and waterproofing membrane have already been installed, the proprietary aluminium and glass balustrade system has not.

2.4 The proposed balustrade

- 2.4.1 The original consent drawings showed an edge-fixed balustrade. Construction of a top-fixed Aluma balustrade is proposed by the applicant, as an amendment to the building consent. The proposed balustrade consists of an extruded aluminium frame with baluster posts fixed to the deck, and toughened safety glass panels.
- 2.4.2 18mm thick plywood plinths have been installed onto the deck, under the membrane. The 90 × 115mm, 12mm thick foot plates of the balustrade fixing for each baluster

³ New Zealand Standard NZS 3604:1999 Timber Framed Buildings

are proposed to be fixed to the plinths with 130mm long, 6mm diameter screws with neoprene washers, with the fixing holes filled with sealant. This is in accordance with the manufacturers specifications, and shown in the details specifically designed for this deck, which were provided by the balustrade supplier for fixing of foot plates to the plinths.

3. Background

- 3.1 The authority issued a building consent (number 070993) for the new dwelling.
- 3.2 The pre-slab, foundation, pre-wrap, and pre-clad inspections, which all passed, were carried out by the authority from February to June 2008.
- 3.3 In a letter to the Department, dated 21 February 2009, the applicant explained that at the time of the pre-clad inspection, the plinths were in place on the deck.
- 3.4 The membrane was installed on the deck between the 7 July 2008 and 14 July 2008.
- 3.5 The building pre-line inspection part-passed on 11 November 2008 and the inspection records note 'Amended plan yet to be approved before full pre-line can be carried out', and also that the next required inspection was the 'completion of the pre-line inspection'. The inspection notes also state that the building was assessed to be weathertight at this point.
- 3.6 In late November/early December, the applicant applied to the authority for an amendment to the building consent which included changes to the bracing, cladding, window and door openings, balustrade design, and the deck membrane.
- 3.7 On 23 December 2008 there was a second building pre-line inspection, which passed without any outstanding items noted, and a plumbing pre-line inspection which also passed. The records from the 23 December 2008 'passed' building pre-line inspection note 'Ok to line', and that the next inspection will be the plumbing pre-line inspection.
- 3.8 The authority issued a 'Refusal of Building Consent' letter, dated 11 February 2009, for the proposed amendments to the building consent, described as window/bracing changes. The letter states:

This letter is to inform you that the above building consent amendment application has been refused as Council is unable to determine from the information provided that your proposal complies with the Building Act 2004.

In particular, the application fails to comply because:

 - 1) the Top Fixed Balustrade. Does not meet the requirements of NZBC B2 and E2.
- 3.9 I have been advised that the authority's concern is that the deck framing may not have been constructed in a way that would serve the balustrade without movement that could result in a leak. There was doubt whether the screw fixings were being fastened into solid timber.
- 3.10 A post-line inspection, which passed, was carried out on 13 February 2009. The inspection records note '...the deck has been constructed to suit top mounted balustrade. This does not comply with approved plans.'

3.11 The authority issued a notice to fix, dated 16 February 2009 stating:

Particulars of contravention or non-compliance

Failure to comply with approved Building Consent documentation, in respect to all changes, including deck membrane, balustrade substrate fixings for surface mounted barrier in place of face mounted, window and door openings, bracing plan, and cladding. Compliance with B1, B2, E2, F2, F4, can not be determined.

To remedy the contravention or non-compliance you must:

Apply for and obtain an approved amendment to comply with Clauses B1, B2, E2, F2, and F4 of the New Zealand Building Code.

3.12 The Department received an application for determination on 23 February 2009.

4. The submissions

4.1 In a letter to the Department, dated 21 February 2009, the applicant described the background to the dispute, noting in particular that he had contacted a number of senior building officials from three other local Councils, and ‘they all had no problems with this type of fixing.’

4.2 In the 21 February 2009 letter, the applicant explained that in the pre-clad inspection on 24 June 2008, the inspector noted that the decking cladding was to be completed prior to installing the full height deck joinery, that the plinths were in place then, and the inspector gave approval to carry on. The applicant also stated that in the pre-line inspection on 11 November 2008, the deck membrane was installed, all paperwork was supplied, the plinths were sealed, and the inspector viewed the plinths and passed the building as weathertight without raising any issues.

4.3 The applicant submits that the authority inspected all work and was aware of the departure from the consented documentation and the site inspection records note the changes for the consent documentation. The applicant had been informally advised to seek a single amendment to the consent for all the changes.

4.4 The applicant forwarded copies of:

- correspondence from the authority
- the 12 December 2008 correspondence from the applicant’s architects to the authority about the amendments to the building consent with supplementary supporting documentation including specifications, engineer’s calculations and details, a producer statement and information from the balustrade manufacturer including design details
- consent check sheet from the authority
- amended drawings
- inspection records
- a copy of determination 2008/88
- the originally consented plans, engineers calculations and details, and specifications.

4.5 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.

- 4.6 The Department sought further information from the applicant about the footplate fixing detail for the baluster posts, which was received on 26 March 2009.
- 4.7 A draft determination was issued to the parties for comment on 30 March 2009.
- 4.8 The applicant accepted the draft determination on 6 April 2009.
- 4.9 The authority accepted the draft determination on 27 April 2009, although made a number of comments, which I have summarised as follows:
- The balustrade fixings were unknown, and therefore compliance with Clause B1 was one of the main reasons for the authority's refusal to amend the building consent.
 - '...the weathertightness inspection, although passed, clearly stated the need for an amended plan before a full pre-line could be carried out. The weathertightness inspection was passed in relation to the approved consent at the time.'
 - The authority refused to amend the building consent and issued a notice to fix as a last resort, largely due to a lack of cooperation and information from the applicant.
- 4.10 The authority explained that although the weathertightness inspection passed, the requirement for an amended plan before a full pre-line inspection could be completed was clearly stated. I consider it an unhelpful practice by the authority that, despite this requirement, inspections continued to postline stage.
- 4.11 The applicant responded to the authority's submission on 29 April 2009 saying he disputed the authority's response; he had cooperated with the authority at every stage and had provided all the information sought by the authority. The applicant also advised that the plinths and the underlying structure were installed with the full knowledge and approval of the authority's inspection staff.
- 4.12 I have taken the submissions into account and amended the determination as appropriate. With respect to the authority's position that the weathertightness inspection passed but only in respect of consented work, I am of the view that this should have been made clear to the applicant at the time the inspection took place, and not at some time after the event.

5. The expert's report

- 5.1 As discussed in paragraph 1.6, I engaged an independent expert to provide an assessment of the condition of those building elements subject to the determination. The expert is a member of the New Zealand Institute of Building Surveyors. The expert inspected the house on 10 March 2009 and furnished a report that was dated 11 March 2009.
- 5.2 The expert stated that the builder had removed a section of the soffit lining to the deck at the northern corner to allow the inspection of the structure.
- 5.3 The expert viewed the underside of the deck and observed the construction of the deck, specifically noting:
- at the side edges of the deck there are two nominal 200mm×50mm joists spaced 90mm apart, at the ends of the joists there is a boundary joist and immediately inside this there are two nogs

- the joist and nogs are nailed together with 90mm×3.15mm gun nails, end nailed at one end and skew nailed at the other
- 18mm thick plywood was laid over the joists and the glue could be observed
- 18mm thick plywood plinths were located such that the baluster fixing screws at 90mm centres would be fully fixed into solid timber along their entire length
- the decking and plinths were covered with a liquid applied waterproofing membrane which appeared to have been satisfactorily applied.

5.4 The expert observed that the plywood and framing timbers appeared to be H3 treated.

5.5 The expert concluded that from what could be seen of the various building elements, the constructions appeared to be sound with no obvious visible defects.

6. Discussion

6.1 The expert's report shows that the deck construction matches the specifications provided by the balustrade supplier for the construction of the deck. The expert observed the joists, joist spacing and nogs, their connections, and the connections of the joists to the boundary joist and to the plywood sheets.

6.2 The expert's report also shows that the deck construction matches the specifications provided by the balustrade supplier for the fixing of the plinths to the deck. The expert observed the plinths were spaced evenly along each edge of the deck and were located so their fixing screws penetrated the edge joist, or boundary joist and the innermost nog.

6.3 At pre-clad stage, the authority's inspection notes state 'decking cladding to be completed prior to installing the full height deck joinery'. I am satisfied that the authority inspected and passed the construction of the deck, including the support for and the location of the plinths.

6.4 The applicant has stated that the plinths were in place by the time of the pre-clad inspection. The inspection notes show there were three building inspections from the time the plinths were installed to the time the refusal to issue the amendment to the consent was made, and no work to rectify the plinths or their installation was required by the authority as a result of these inspections.

6.5 The expert inspected the membrane and noted no obvious defects. The membrane is a Branz appraised system (refer to paragraph 2.3.2) and was installed by a licensed contractor of the internationally reputable company who supply the membrane.

6.6 The balustrade supplier provided a top fix and plinth detail for the fixing of the foot plates and baluster posts to the deck structure. The details show a butynol rubber gasket below the footplate, neoprene seals, and silicon sealant to the fixing holes. This detail is to be confirmed in the amended consent.

6.7 I am satisfied based on the evidence discussed that in this case the proposed balustrade system, with respect to the balustrade fixings, when installed on the existing deck, will comply with Clauses B2 and E2 of the Building Code. I am also satisfied that the fixings will comply with Clause B1 insofar as the framing to the deck is sufficient to enable the proper installation of the balustrade fixings.

7. The decision

- 7.1 In accordance with section 188 of the Building Act 2004, I hereby determine that for the purposes of granting the amendment to the building consent the balustrade fixings of the proposed balustrade system, when installed on the existing deck, will comply with Clauses B2 and E2 of the Building Code and the fixings will also comply with B1 insofar as the framing to the deck is sufficient to enable the proper installation of the balustrade fixings themselves, and therefore I reverse the decision of the authority to refuse to amend the building consent in respect of the balustrade fixings.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 22 May 2009.

John Gardiner
Manager Determinations