



## Determination 2009/34

# Dispute about amendments to a building consent for deck balustrade fixing to a house at 12 Hinemoa Terrace, Tairua

### 1. The matters to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004<sup>1</sup> (“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, P and S Rattray (“the applicants”), acting through the designer of the house, and the other party is the Thames Coromandel District Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.
- 1.2 This determination arises from the decision of the authority to refuse to approve a proposed method of fixing a balustrade to the deck of a building under construction.
- 1.3 I note that the applicant has restricted the matter to be determined to the proposed baluster fixing method, and this determination is therefore restricted to that matter. I have not considered the compliance of the balustrade system with Clauses B1 Structure, and F4 Safety from falling; or the compliance of the deck membrane itself with respect to Clauses B2 Durability and E2 External moisture.
- 1.4 I therefore consider that the matter for determination under section 177(a) of the Act<sup>2</sup> is whether the balustrade fixing detail onto the deck membrane when completed as proposed, will comply with Clauses B2 Durability and E2 External Moisture of the Building Code<sup>3</sup> (Schedule 1, Building Regulations 1992).
- 1.5 In making my decision, I have considered the submissions of the applicants and the authority. I have evaluated the information on the balustrade fixing detail using a framework that I describe more fully in paragraph 5.1.

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<sup>1</sup> The Building Act 2004 is available from the Department’s website at [www.dbh.govt.nz](http://www.dbh.govt.nz).

<sup>2</sup> 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

<sup>3</sup> The Building Code is available from the Department’s website at [www.dbh.govt.nz](http://www.dbh.govt.nz).

## 2. The building work

- 2.1 The building work consists of a large house that is 3-storeys in part and is set into an excavated sloping site in a high wind zone for the purposes of NZS 3604<sup>4</sup>. Construction is conventional light timber frame, with a concrete slab and foundations, and a concrete block basement.

### 2.2 The decks

- 2.2.1 Timber framed decks extend from the two upper levels and fall toward gutters at the outer edges. The decks are supported on timber encased steel columns clad with 9mm compressed sheet, and with fibre-cement soffits. The areas under the decks are not enclosed in any way and are completely open to the outside.
- 2.2.2 The decks are intended to have glass balustrades with metal balusters and handrails. I have received no information about the specific balustrade system intended to be used, and this is not part of this determination.
- 2.2.3 The deck membrane system is a single-layer liquid-applied reinforced membrane system with a decorative 'non-slip surface' applied over it to provide a trafficable surface and to provide protection to the underlying membrane from UV radiation. The code-compliance of the membrane system and its components does not form part of this determination.

### 2.3 The proposed baluster fixings

- 2.3.1 I note that the applicant has amended the proposed fixing details in response to the draft determination (refer paragraph 4.4) and I have taken those details into account.
- 2.3.2 The proposed fixing detail shows a plate at the base of the metal balusters, which is fixed vertically through a membrane-covered timber mounting block, the deck membrane, and the plywood substrate, to the timber framing beneath. The plywood substrate turns down at the front edge of the deck to form a drip edge above the gutter, with the membrane wrapped over the drip edge.
- 2.3.3 The proposed fixing detail includes timber mounting blocks with sloped edges, which are fixed over the deck membrane layer. An additional section of membrane is to be applied over the mounting blocks. The base plates are to be sealed onto a polyurethane sealant bed and fixed through the blocks into the deck framing with stainless steel coach screws, neoprene gaskets and sealant applied to all coach screw holes. However, there is no neoprene seal specified to the stainless steel coach screws.

## 3. Background

- 3.1 The drawings submitted as part of the application for a building consent originally called for the glass balustrades to the deck to have metal balusters and handrails with 'fixings as designed by manufacturer'. The balusters were shown vertically fixed through 100 x 100 x 25mm membrane-covered mounting blocks, and a 25 x 25mm

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<sup>4</sup> New Zealand Standard NZS 3604:1999 Timber Framed Buildings

aluminium angle that forms a drip edge above the gutters. The consent drawings also showed the decks with tiles installed over the membrane.

- 3.2 The authority rejected the balustrade fixing detail and an alternative detail was submitted, which included face-fixing of the baluster to the edge of the deck. The consent was issued based on the use of the face-fixed detail.
- 3.3 The authority issued a building consent (No. ABA/2008/945) on 13 October 2008. I have not seen a copy of the consent.
- 3.4 It appears the deck membrane supplier's standard fixing detail was submitted to the authority for approval as an amendment to the building consent. According to the applicant, who is also the builder of the house, the authority verbally advised that it would not accept surface-mounted fixings as it had encountered 'numerous problems in the past on other jobs'.
- 3.5 The Department received an application for a determination on 11 February 2009.
- 3.6 The Department sought additional information on the situation and, in an email dated 4 March 2009, the applicant provided further background to the dispute and explained that a determination was sought as the proposed detail:

...is an accepted solution in the neighbouring council, the deck area does not cover an enclosed occupancy area, ie. bedroom/lounge, and also it will be far more aesthetically pleasing on our type of construction than the face mounted option using external guttering and unsightly purpose made brackets.

#### **4. The submissions**

- 4.1 The applicants forwarded copies of:
- 2 sheets of unstamped drawings
  - a standard fixing detail supplied by the membrane supplier.
- 4.2 A copy of the applicants' submission was provided to the authority, which made no submission in response.
- 4.3 A draft determination was issued to the parties for comment on 19 March 2009.
- 4.4 The applicant accepted the draft in a letter to the Department dated 30 March 2009, advising that the tile finish to the membrane was to be changed to a non-slip surface (refer paragraph 2.2.3). The applicant forwarded copies of:
- a "Producer Statement – Design", dated 25 January 2008, for the standard balustrade designs supplied by the membrane supplier
  - amended baluster fixing details
  - product information, a producer statement and application warranty for a proposed coating system to the membrane.

The applicant advised that the information had also been forwarded to the authority for its consideration.

- 4.5 The authority accepted the draft on 24 April 2009 subject to the comments made in an attached submission. The authority outlined the background to the situation, noting its concerns that the consent had been issued based on an amended balustrade fixing and the applicant 'then chose to apply for a determination to revert back to the original non-complying detail'.
- 4.6 I acknowledge the authority's comments but note that the balustrade fixing detail as now proposed by the applicant, and described herein, is not the same as proposed on the original consent drawings.
- 4.7 I note that the owner must demonstrate compliance with the Building Code to the satisfaction of the building consent authority, via the information contained in the application for a building consent. If an owner wishes to amend a consent they are entitled to do so, but code-compliance must be adequately demonstrated.

## **5. Evaluation for code compliance**

### **5.1 Evaluation framework**

- 5.1.1 The relevant Acceptable Solution E2/AS1 calls for balustrade fixing to be to vertical surfaces only, with handrail supports to be 'side-fixed through the cladding system into framing'<sup>5</sup>. The proposed top-fixing of balusters to the decks of this house must therefore be considered as an alternative solution.

### **5.2 Evaluation of the balustrade fixing for E2 and B2 Compliance**

- 5.2.1 As an alternative solution, the proposed fixing needs to be assessed according to the particular circumstances of the decks to this house, which have lined soffits and open areas beneath them.
- 5.2.2 The proposed balustrade fixing has the following features:
- A raised plinth under each balustrade footplate with two layers of deck membrane under
  - a neoprene gasket between the balustrade footplate and the raised plinth
  - stainless steel coach screw fixings into solid timber
  - sealant to the fixing holes in the timber and footplate.

### **5.3 Weathertightness performance: the proposed balustrade fixing**

- 5.3.1 While the fixing method proposed for the balusters generally appears to be adequate, I consider that neoprene washers are also required under the heads of the stainless steel coach screws to form a mechanical seal between the fixings and the balustrade base plate.

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<sup>5</sup> Acceptable Solution E2/AS1, paragraph 7.4.5 'Stanchions'

## 6. Discussion

- 6.1 The applicant has supplied sufficient information as part of their submission on the draft determination for me to conclude the proposed detail, with minor amendment, will provide a method of fixing the balusters that is likely to prevent the ingress of moisture now and in the future. I am therefore satisfied that the baluster fixing, with the inclusion of the neoprene washers under the heads of the stainless steel coach screws, will comply with Clauses E2 and B2 of the Building Code.
- 6.2 It is emphasised that each determination is conducted on a case-by-case basis. Accordingly, the fact that a particular balustrade fixing system has been established as being code-compliant in relation to particular decks to a building does not necessarily mean that the same system will be code-compliant in another situation.
- 6.3 Though the determination considers the proposed baluster fixing method only in regards to Clauses B2 and E2, I note the authority should also satisfy itself of the adequacy of the fixings in regard to Clause B1.

## 7. What is to be done now?

- 7.1 I suggest that the applicants confirm the proposed balustrade fixing with the authority, including the additional matter raised paragraph 5.3.1 in the form of an amendment to the consent.

## 8. The decision

- 8.1 In accordance with section 188 of the Building Act 2004 I hereby:
- confirm the authority's decision to refuse to issue the amendment to the building consent for the balustrade fixing detail as described in paragraph 3.4
  - find that the proposed baluster fixing detail, as discussed in paragraph 2.3.3, with the inclusion of the neoprene washers under the heads of the stainless steel coach screws, will comply with Clauses E2 and B2 of the Building Code.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 18 May 2009.

John Gardiner  
**Manager Determinations**