



Determination 2011/043

The refusal to issue a certificate of acceptance for a retaining wall to a driveway at 570 Wyuna Bay Road, Coromandel

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.

1.2 The following are the parties to this determination:

- The owner of the property, Mrs JGHP van Arensbergen Boevink (“the applicant”), acting through an agent (“the agent”)
- The Thames Coromandel District Council carrying out its duties and functions as a territorial authority or building consent authority (“the authority”).

1.3 This determination arises from the decision of the authority to refuse to issue a certificate of acceptance for the construction of a retaining wall to a driveway and parking area (“the retaining wall”) because it was unable to be satisfied, to the best of its knowledge and belief and on reasonable grounds, that the construction of the retaining wall complied with the Building Code (Schedule 1, Building Regulations 1992).

1.4 Therefore I consider the matter for determination² is whether the authority was correct in refusing to issue a certificate of acceptance for the construction of the retaining wall.

1.5 In making my decision I have considered the application and submissions, the report of the building surveyor commissioned by the Department to advise on this dispute (“the building surveyor”), and other evidence in this matter.

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

² In terms of sections 177(1)(b) and 177(3)(b) of the Act. 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 work

- 2.1 The building work consists of the construction of the retaining wall to form a parking area and driveway access within the southern portion of the property.
- 2.2 The retaining wall has a total length of approximately 13 metres and provides support to the eastern edge of the driveway (approximately 6 metres) that slopes steeply down from the parking area to the road, and the southern edge of the parking area itself (approximately 7 metres). The maximum retained height is 1250mm above the current ground level, with the ground in front of the wall sloping downwards at around 20° (“the down-slope”).
- 2.3 The posts to the retaining wall appear to be between 250 to 300mm SED³ H5 treated timber poles spaced at 1.0 metre centres. The posts are located in 600mm diameter augered holes, 2.7 metres deep below the natural ground line, with the holes then filled with 17.5MPa concrete (the natural ground level is approximately 1.1 metres below the current ground level). The rails of the retaining wall are 200×50mm H4 treated timber, nailed to the inside of each post.
- 2.4 The fill is made up of a non-engineered wedge of existing soils, compacted hardfill, and drainage medium adjacent to the retaining wall draining via a 110mm diameter perforated drain to the culvert.

3. Background

- 3.1 The design of the retaining wall was undertaken by a structural engineering firm. The structural engineering firm provided a set of calculations and structural details, and a Producer Statement – PS1 – Design (“PS1”), signed by a Chartered Professional Engineer, with a professional affiliation to the Institution of Professional Engineers New Zealand. The PS1 cites the design methodology of verification method B1/VM4 and compliance with NZS 3603.
- 3.2 The construction of the retaining wall was undertaken in November 2009. The builder issued a Producer Statement – PS3 – Construction (“PS3”), that the construction of the retaining wall was completed in accordance with the design of the structural engineering firm. According to the agent, a building consent application was not made due to a breakdown in communication between the applicant and the structural engineering firm.
- 3.3 The structural engineering firm provided a Producer Statement – PS4 – Construction Review (“PS4”). The PS4 verifies construction monitoring to level ‘CM1’⁴ was undertaken to certify the drilled foundations.
- 3.4 The agent submitted an application for a certificate of acceptance on 4 February 2010. The authority requested further information in respect to variations that were required to the resource consent related to the works at the property. The agent subsequently submitted a complaint to the Department under section 200 of the Act.
- 3.5 On 10 May 2010, the authority provided written notice to the agent refusing to grant a certificate of acceptance. The reasons for the refusal were:

³ Small end diameter

⁴ Refer ‘Guideline on the Briefing & Engagement for Consulting Engineering Services, January 2004, Appendix 4’. Level CM1 monitoring includes ‘Visit the works ... to review important materials of construction critical work procedures and/or completed plant or components. Be available to advise the constructor on the technical interpretation of the plans and specifications.’

Although you have provided photographs purportedly taken at the time of construction, these photographs are not accompanied by any site inspection/observation notes, despite you stating that an engineer was called on site to make observation at critical points during construction. Photographs, unaccompanied by details of construction observation do not provide sufficient context for the PS4, which you also tendered with the application. Whereas this authority may, if it so chooses as provided by section 96(2) of the [Act], rely on such a PS4 to be satisfied that building work complies with the Building Code, it declines to so exercise that discretion in this instance.

3.6 On 2 September 2010, the authority wrote to the applicant confirming its refusal to issue the certificate of acceptance, and stated:

The issue of a certificate of acceptance is on the basis that [the authority] can be satisfied, to the best of its knowledge and belief and on reasonable grounds that in so far as it could ascertain that the building works in question would comply with the Building Code. In this instance [the authority] can not be satisfied that building work complies with the Building Code.

3.7 An application for determination was received by the Department on 24 November 2010.

4. The submissions

4.1 The application was accompanied by a letter from the agent outlining the background to the dispute, which stated:

... the client constructed the said retaining wall without consent in November 2009. In February 2010 an application for certificate of acceptance ... was made to the [authority] including supporting covering letter, photos, plans and elevations, engineers PS1 and design calculations and subsequent PS4.

At no stage during [the authority's] processing of the application did they request additional information to support the application. [The authority states] ... that "photographs unaccompanied by details of construction observation do not provide sufficient context for the PS4". If this is the case, I am surprised that [the authority] did not allow the opportunity/request further information to provide additional/supporting construction observation details during the processing of the application, but instead waited some 3 months after the application had been received, and then did not attempt to request the information, but instead use this as grounds to decline the application.

4.2 The application was accompanied by:

- the application for a certificate of acceptance that included
 - structural engineering calculations and details
 - a PS1 and PS4 from the structural engineering firm, and confirmation of the inspection and monitoring undertaken by the structural engineering firm and a PS3 from the builder
 - a description of the building work and a photographic diary of the construction process, site plans, two geotechnical reports and the resource consent
- copies of emails and correspondence pertaining to the resource consent, application for certificate of acceptance, and section 200 complaint.

4.3 The authority's acknowledgment of the application was received by the Department on 6 December 2010.

4.4 A draft determination was sent to the parties for comment on 25 January 2011.

- 4.5 The draft determination concluded that there was sufficient information and reasonable grounds to be satisfied that the retaining wall complied with Clauses B1 and B2, and that the authority did not correctly exercise its powers in refusing to issue a certificate of acceptance for the retaining wall.
- 4.6 The agent accepted the draft determination on 1 February 2011 and noted a solution that would bring the wall into compliance with Clause F4.
- 4.7 The authority accepted the draft determination; however, noted that it 'still had some concerns' (refer also to paragraph 5.8).
- 4.8 I took these comments into account in preparing the final determination.

5. The building surveyor's report

- 5.1 As mentioned in paragraph 1.5, I engaged an independent building surveyor to assist me. The building surveyor was engaged to verify that the wall was constructed as documented and described in the application, and because the authority had not conducted a site inspection itself but advised that the photographs submitted of the wall's construction were 'purported' to be of the wall.
- 5.2 The building surveyor is a member of the New Zealand Institute of Building Surveyors. He visited the site on Tuesday 7 December 2010 and Friday 10 December 2010 and furnished a report dated 13 December 2010.
- 5.3 The building surveyor inspected the retaining wall and observed that the retaining wall appeared professionally constructed and that there was no evidence of structural failure.
- 5.4 With respect to the construction of the retaining wall, the building surveyor observed that:
- the retaining wall has a total length of approximately 13 metres and provides support to the eastern edge of the driveway (6 metres) that slopes down from the parking area to the road, and the southern edge of the parking area itself (7 metres), with the wall to the parking area and top 2250mm of the driveway constructed with a level top
 - the retaining wall was effectively retaining between 750mm and 1250mm depth of ground
 - the wall was constructed with round poles, between 250 and 300mm in size, spaced 1.0 metres apart in a clay type soil, with a fall of 4 to 5° inwards, and with 200×50mm boards as the rails.
- 5.5 With respect to the documentation provided to support the application for the certificate of acceptance, the building surveyor noted the photographs supplied were photographs of the construction of this retaining wall. The building surveyor photographed the same locations.
- 5.6 The report was provided to the parties for comment on 13 December 2010.

The responses of the parties to the building surveyor's report

- 5.7 The agent commented on the report on 16 December 2010, noting that the building surveyor confirmed the construction of the retaining wall has been carried out in accordance with the design and calculations by the structural engineer, to the extent permitted by a visual inspection. The agent also noted that a visual inspection, taken

together with the information provided to support the application for the certificate of acceptance should provide sufficient evidence for the authority to rely on the producer statement construction review.

- 5.8 The authority commented on the report on 16 December 2010, noting the report is a record of the visual aspects of the retaining walls, however, does not address concerns relating to Clauses B1, B2 and F4, and also does not address issues such as drainage behind the retaining wall, and furthermore that it would have expected that any report on a structure such as this would be undertaken by a suitably qualified engineer and would include investigation of pile/post bearing and depths, concrete encasement, ground conditions, and comment on the structural performance for 50 years.
- 5.9 In response, the applicant commented that the authority is not expected to issue a certificate of acceptance on all aspects of the Building Code unless it can be satisfied on reasonable grounds and the nature of a certificate of acceptance lends itself to the fact that not all work can be inspected, hence specific clauses are covered by the information provided with the application.

The refusal to issue a certificate of acceptance

6. Discussion

The basis for issuing a certificate of acceptance

- 6.1 Section 40 states that building work must not be carried out except in accordance with a building consent, and section 96(1)(a) provides for the issue of a certificate of acceptance where an owner has carried out building work without obtaining a building consent. In such a situation, a territorial authority may, on application, issue a certificate of acceptance but ‘only if it is satisfied, to the best of its knowledge and belief and on reasonable grounds, that, insofar as it could ascertain, the building work complies with the [Building Code]’ (section 96[2]).
- 6.2 This requires an authority to consider all the available evidence such as plans and specifications, producer statements, the builder’s records, the owner’s records, any expert reports, and the authority’s own experience and knowledge of the builders and designers involved in the work in order to ascertain whether the building work complies with the Building Code.
- 6.3 The provisions are silent on work that cannot be inspected and for which there is no evidence available to determine whether it complies with the Building Code. However, Form 9 requires an authority to list the building work that complies with the Building Code and in my view this list provides the basis for an authority to list only the building work that can be ascertained as complying with the Building Code.
- 6.4 The description of the work covered by Form 9 could be:
- a description of the physical building work, or
 - a description of the Building Code clauses the building work complies with, or
 - a combination of both.
- 6.5 Where a certificate of acceptance does not cover work that is the subject of the application it is essential the certificate clearly set out the nature and extent of the work that is not covered by the certificate of acceptance to ensure the certificate is not misleading. This list of building work that is expressly excluded from the scope

of a certificate of acceptance could appear immediately after the list of work that complies with the Building Code. In this way, the contrast between the work that complies with the Building Code and the work that is excluded from the certificate will be clearly apparent to persons reading the certificate.

- 6.6 Section 99(2) and Form 9 both provide for a certificate of acceptance to attach a further list of the building work an authority has been able to inspect for the purpose of limiting the liability of the authority to that work it has been able to inspect. This attachment listing the building work inspected will obviously be narrower than the description of work covered by the certificate of acceptance. This is because the extent to which an authority has been able to 'inspect' work will usually be less than the extent to which an authority has been able to 'ascertain' whether building work complies with the Building Code. In ascertaining, the authority will take into account all the relevant evidence available, including its knowledge and belief of the circumstances surrounding the building work and the builders and designers who undertook the work, and statements of opinion provided such as producer statements.
- 6.7 With respect to an application for a certificate of acceptance, the applicant must provide (if available) plans and specifications, and any other information that the authority reasonably requires. Under section 97 with respect to an application for a certificate of acceptance, it is the applicant who must provide sufficient information to the authority to establish the level of compliance achieved. I note also that the authority may inspect the building work and that this information, along with that supplied by the applicant, would assist the authority in forming a view as to compliance with the Building Code.
- 6.8 I have considered whether, in this case, there was sufficient evidence that the authority could be satisfied, to the best of its knowledge and belief, and on reasonable grounds, that the building work complied with the Building Code.

The code compliance of the retaining wall

- 6.9 For the assessment of the retaining wall with respect to the certificate of acceptance application, I have considered the Building Code compliance of the design and construction of the retaining wall and the evidence supporting the design and construction.
- 6.10 The building surveyor observed that the retaining wall was professionally constructed (refer to paragraph 5.3). The building surveyor observed that the elements of the construction that were able to be visually inspected reflected the information provided in the application and confirmed that the photographic records that were provided in the application were photographs of the construction of the retaining wall.
- 6.11 However, due to the concerns of the authority (refer paragraph 5.8) I sought advice from a structural engineer within the Department, who is a Chartered Professional Engineer. The Department's engineer reviewed the Building Code compliance of the design and construction of the retaining wall.
- 6.12 The Department's engineer noted that the effective height of the fill supported by the wall is greater than represented in the calculations because the ground slopes down at 20° and this ground surface is made up of non-engineered fill which according to the structural engineering firm is 1.1 metres deep at pole locations.

6.13 The Department's engineer noted that the design of the retaining wall did not appear to be undertaken in accordance with Verification Method B1/VM1, and exhibited either:

- undersized pole specific engineering design, for the following reasons:
 - there is an error in the calculations which underestimates the bending demand on the poles
 - the bending of the poles does not take account of the down-slope
 - the bending of the poles does not extend to the location of maximum bending which will occur when the concrete embedment cracks
 - the bending of the wall may not account for a possible increase in wall height above what is designed
- insufficient embedment depth due to the effect of the down-slope

The Department's engineer also questioned the strength of the timber used for the 200x50mm rails.

6.14 In respect of the PS4, the Department's engineer noted that the PS4 records an increase in both pole depth and pole encasement than originally specified, and while this gives an added margin of safety over the original design, it is not sufficient to compensate for the 20° down-sloping ground in front of the wall.

6.15 The structural engineering firm responded to the points raised in paragraphs 6.12 to 6.14 as follows:

- further calculations (provided) show the pole construction is not under designed. The poles to the wall were described at 300mm SED
- the construction variances on site i.e. pole diameter, auger diameter, embedment depth, higher in situ undrained shear strength of the natural ground, were noted
- the 200x50mm timber rails were MSG8.
- the PS4 stands as issued and the wall has the required structural integrity to meet the necessary performance criteria
- it was not necessary to redesign the retaining wall a third time to ensure PS4 verification, which would have been an unnecessary cost to the applicant.

6.16 The Department's engineer reviewed the further calculations and noted:

- the structural engineering firm had needed to significantly modify the design calculations in response to the Department engineer's review
- the information provided by the structural engineering firm (refer to paragraph 6.15) says the poles are 300mm SED medium density, whereas the original design is based on 250 and 275mm diameter poles (at 1.0 and 1.1 metre centres respectively). The building surveyor's report found the poles were between 250mm and 300mm
- applying the minimum pole diameter of 250mm observed by the building surveyor, the bending capacity of the poles is less than the demand

- the method used to allow for the down-sloping ground to the front of the wall did not correspond to the point at which the poles would be expected to bend
- the strength of the 200x50mm timber rails did not appear to be stated as a requirement in the documents from which the wall was built.

6.17 Given the observations of the Department's engineer I consider that onsite investigation by the applicant, but with the agreement of the authority, is required to verify the following design parameters:

- the pole diameter(s)
- the diameter of the concrete embedment to the poles
- the strength of the timber for the timber rails.

The verified design parameters should then be confirmed in the calculations for the wall, along with clarification of the method used to allow for the down-sloping ground to the front of the wall.

6.18 In my view revised as-built drawings should be provided following the onsite verification so that authority's records in respect of this work are correct.

Compliance with Clause F4 Safety from falling

6.19 As this is an area where people using the car parking area may approach the retaining wall edge barrier, it is appropriate that they are protected from falling onto the steeply falling slope below the wall. I note, in this case, that no barrier has been installed to the retaining wall where the height from the carpark and driveway areas to the bank below is greater than one metre. Therefore the retaining wall does not comply with Clause F4.

The authority's consideration of the certificate of acceptance

6.20 In my view an application for a certificate of acceptance requires an authority to conduct a detailed assessment of the information submitted to support the application plus, if it is appropriate, conduct a site inspection. The issues raised by the authority in relation to the request for further information appear to relate only to the resource consent process (refer paragraph 3.4).

6.21 While I have carried out an assessment of the technical information submitted in support of the application for the certificate of acceptance, the authority has given no reason why it did not conduct such an assessment itself.

6.22 In this instance I do not consider the authority made an adequate assessment of the application and therefore did not correctly exercise its powers in terms of the consideration it is required to give to such an application under sections 96 and 98 of the Act, nor in respect of the reasons for the refusal given under section 99A (b) of the Act.

Conclusion

6.23 I have considered whether there was sufficient evidence that the authority could be satisfied, to the best of its knowledge and belief and on reasonable grounds, that the as-built building work complied with the Building Code.

- 6.24 I conclude that the structural calculations, details and plans provided for the construction of the retaining wall do not demonstrate compliance with Building Code Clauses B1 and B2. In my opinion the wall also does not comply with Clause F4.
- 6.25 In my view the application for the certificate of acceptance is not supported by sufficiently accurate documentation, and there are significant discrepancies between the information provided in the application and subsequently, and the as-built construction of the wall to justify the authority declining the application.
- 6.26 I note that the acceptance of any producer statement is at the discretion of an authority, and is dependent on an authority's acceptance of the statement's author and contents: a producer statement should only be accepted if an authority considers it reasonable to do so. Where an authority has reason to doubt such a statement I consider the authority is entitled to require the statement to be peer-reviewed.

7. What is to be done now?

- 7.1 The applicant should verify the matters as described in paragraph 6.17 to the satisfaction of the authority. Once the authority is satisfied that the wall is code compliant it may issue a certificate of acceptance.
- 7.2 I note that the wall as constructed does not meet the performance requirements of Clause F4 in the area where the height from the carpark and driveway areas to the bank below is greater than one metre. Given the height between the driveway and carpark and the bank below is 1250mm at its largest, I do not consider this to meet the definition of a dangerous building under section 121 of the Act. However, I do consider that it would be prudent for the applicant to undertake remedial work to bring the retaining wall into compliance with Clause F4.
- 7.3 I note that the Building Code is a performance based code, and there may be a range of solutions that are satisfactory. I also note that if the applicant does elect to undertake building work in this respect, a building consent may be required.

8. The decision

- 8.1 In accordance with section 188 I hereby determine that the authority was correct to refuse to issue the certificate of acceptance for the retaining wall.

Signed for and on behalf of the Chief Executive of the Department of Building and Housing on 13 May 2011.

John Gardiner
Manager Determinations

Appendix: The legislation

The relevant provisions of the Building Act are:

- 7 Interpretation**
building work—
 (a) means work
 (i) for, or in connection with, the construction, alteration, demolition, or removal of a building
 (ii) on an allotment that is likely to affect the extent to which an existing building on that allotment complies with the building code;...
- 40 Buildings not to be constructed, altered, demolished, or removed without consent**
 1. A person must not carry out any building work except in accordance with a building consent.
- 96 Territorial authority may issue certificate of acceptance in certain circumstances**
 1. A territorial authority may, on application, issue a certificate of acceptance for building work already done —
 (a) if —
 (i) the work was done by the owner or any predecessor in title of the owner; and
 (ii) a building consent was required for the work but not obtained...
 2. A territorial authority may issue a certificate of acceptance only if it is satisfied, to the best of its knowledge and belief and on reasonable grounds, that, insofar as it could ascertain, the building work complies with the building code.
 3. This section —
 (a) does not limit section 40 (which provides that a person must not carry out any building work except in accordance with a building consent); and
 (b) accordingly, does not relieve a person from the requirement to obtain a building consent for building work.
- 97 How to apply for certificate of acceptance**
 1. An application for a certificate of acceptance must—
 (a) be in the prescribed form; and
 (b) if available, be accompanied by plans and specifications that are—
 (i) required by regulations made under section 402; or
 (ii) if the regulations do not so require, required by the territorial authority; and
 (c) contain or be accompanied by any other information that the territorial authority reasonably requires; and...
- 99 Issue of certificate of acceptance**
 2. A certificate of acceptance may, if a territorial authority inspected the building work, be qualified to the effect that only parts of the building work were able to be inspected.
 3. A territorial authority's liability for the issue of a certificate of acceptance is limited to the same extent that the territorial authority was able to inspect the building work in question.

Form 9 Certificate of Acceptance

Acceptance of compliance

The territorial authority named below is satisfied, to the best of its knowledge and belief and on reasonable grounds, that, insofar as it can ascertain, the building work described below complies with the building code: [insert details]

‡The territorial authority was only able to inspect the following parts of the building work and this certificate is qualified as follows: [insert details]