



Determination 2015/006

Regarding the code compliance of, and whether consent was required for, a 1.0m high retaining wall adjacent the boundary at 32 Ransom Smyth Drive, Goodwood Heights, Auckland

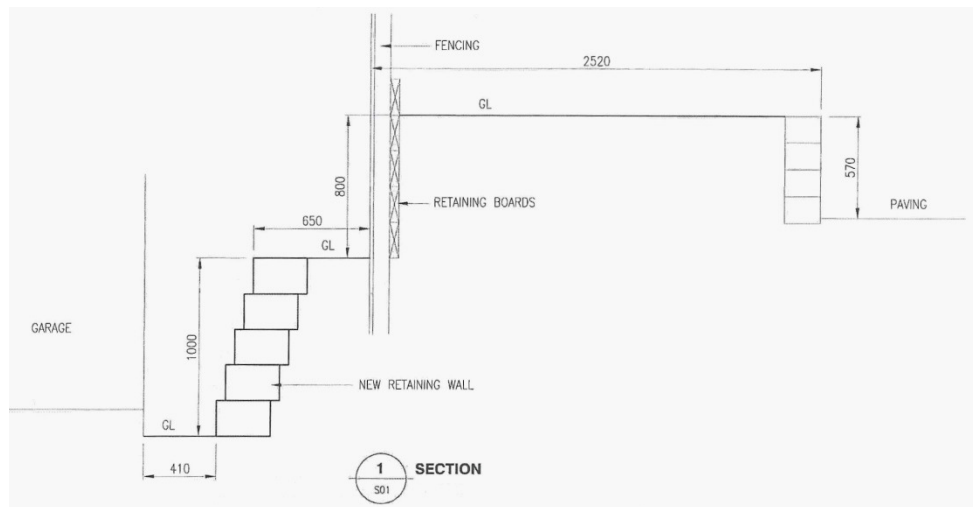


Figure 1: Section through retaining wall to adjacent property (not to scale)

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 and Assurance, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.

1.2 The parties to the determination are:

- the owner of the house, M Hann (“the applicant”), represented by an agent (“the applicant’s agent”)
- Auckland Council (“the authority”), carrying out its duties as a territorial authority or building consent authority. I note here that the authority engaged a consultancy firm (“the consultant”) to act on its behalf to verify the design and act on its behalf during construction, and I have taken the views expressed by the consultant to be those of the authority.

1.3 This determination arises from the construction of a retaining wall as part of works carried out to construct a minor household dwelling. The issue arose because:

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

- the retaining wall was not included in the consented building work and the authority now requires the building consent be amended to include the retaining wall, and
- the authority is not satisfied that the building work complies with certain clauses² of the Building Code (First Schedule, Building Regulations 1992), in particular in regard to the surcharge.

1.4 In correspondence between the parties there is reference to the requirements of the Resource Management Act. I note here that I have no jurisdiction under any other Acts and this determination is limited to those matters set out in paragraph 1.5 below.

1.5 The matters to be determined³ are therefore:

Matter 1

1.5.1 Whether the retaining wall as constructed complies with the relevant Clauses of the Building Code. I consider this matter in paragraph 6.1.

Matter 2

1.5.2 Whether the authority was correct in the exercise of its powers of decision in requiring the building consent be amended to include the retaining wall. In deciding this matter, I must consider whether the retaining wall is exempt building work under Schedule 1 of the Act. I consider this matter in paragraph 6.2.

1.6 In making my decision I have considered the submissions of the parties, the report of the report of an independent expert engaged by the Ministry (“the expert”), and the other evidence in this matter.

1.7 Relevant sections of the Act and the Building Code are set out in Appendix A.

2. The building work

2.1 The development on the subject property required excavation up to approximately 1.0m in the eastern corner of the site along the northeast and southeast boundaries. A keystone-type retaining wall has been constructed within the property at the face of the excavation.

2.2 The height of the retaining wall varies to a maximum of 1.0m and the wall is stepped back approximately 50mm for each 200mm riser. The distance from the back of the retaining wall to the boundary/fence line varies from 350mm to 450mm. Each riser and the blocks are filled with scoria and secured with fibreglass pins.

2.3 The neighbouring site on the southeast boundary is backfilled behind and against the existing wooden boundary fence to a depth of 800mm. Horizontal timbers have been installed along the fence to retain the backfill: the timbers are placed on the neighbour’s side of the fence.

3. Background

3.1 The authority issued the building consent (no. 20140376) on 6 May 2014 for construction of the household unit. The approved plans, in particular drawing No. 3 dated 21 September 2013 and stamped as ‘certified’ by the consultant on 30 April 2014, do not show a retaining wall.

² In this determination, references to sections are to sections of the Act and references to clauses are to clauses of the Building Code.

³ Under sections 177(1)(a), 177(1)(b) 177(2)(a) of the Act.

- 3.2 The applicant has provided a different copy of drawing no.3, also dated 21 September 2013, which has the retaining wall drawn in hand and a notation that 'upon request from Building Inspector processing this page No3 was replaced with new page 3 without the retaining wall detail'. I note here that the drawing certified by the consultant and the alternative provided by the applicant share the same date and that there is no revision number indicated on either.
- 3.3 It appears from later correspondence that some time after construction the applicant's agent was advised that an amendment to the building consent was required in respect of the retaining wall on the boundary, or that if the wall was considered exempt work under Schedule 1 of the Building Act then it must be constructed the same distance from the boundary as the height of the retaining wall.
- 3.4 In an email on 20 May 2014 to the consultant, the applicant's agent noted that the retaining wall was exempt from the requirement for building consent because it was less than 1.5m high and there was 'no surcharge of any kind'.
- 3.5 By email on 23 May 2014 the consultant advised the applicant's agent that excavation had been taken 'all the way to the boundary with a retaining height between 1000mm and 1200mm' and this was not in accordance with the building consent. The consultant noted that 'a retaining wall 300mm to 520mm high could be constructed under Schedule 1 of the Building Act as long as it is located outside of the influence line of the boundary (i.e. 300mm to 520mm away).
- 3.6 On 22 August 2014, after a site visit on 18 August 2014 undertaken with the authority, the consultant wrote the applicant regarding the unresolved issue of the retaining wall. The consultant noted that the retaining wall was constructed 'too close to the boundary' and that an amendment to the building consent was required. The consultant advised:
- The retaining wall will need to be designed by a Chartered Professional Engineer and make allowance for a 12kPa surcharge.
- ...[reference to eaves & spouting being within 650mm of boundary]
- Please be advised that no further work is to take place on this site until the issues have been resolved. We have temporarily suspended doing anymore inspections at the site until further notice.
- 3.7 It appears that the applicant's agent wrote to the authority by email on 3 September 2014. I do not have a copy of that email.
- 3.8 On 10 September 2014 the authority responded to the applicant's agent, noting that the letter of 22 August 2014 from the consultant was 'a valid request to enable the work to proceed on site'. The authority required the applicant supply the consultant with the following:
- Surveyors certification of the siting and levels of the dwelling and the retaining walls
- Written confirmation from the planners at [the Manukau office] that the as-built situation as confirmed by the surveyor is compliant
- If the above two matters confirm compliance then you will need to apply for an amendment to the consent. If the work is exempt then it should be removed from the consent.
- (While the letter refers to 'compliance' and a 'consent', it unclear whether this is in relation to the Building Act or the Resource Management Act.)

- 3.9 On 26 September 2014 the applicant's agent forwarded a letter dated 25 September 2014 from a chartered professional engineer ("the applicant's engineer") confirming that 'the 12kPa boundary surcharge has no effect on the 1m high keystone retaining wall 950mm away from the boundary' and 'standard [proprietary] keystone wall details can be used to retain the 1m high soil (no surcharge)'. The letter was accompanied by a Producer Statement PS1 – Design for a 1m high keystone retaining wall 950mm away from a boundary.
- 3.10 The authority responded on 26 September 2014 noting that the letter was sufficient to waive the requirement for any resource consent and requested the agent forward the email to the relevant building control officer in the authority.
- 3.11 I have seen no further correspondence from the authority in regards to the required amendment to the building consent or the authority's views as to compliance of the as-built retaining wall.
- 3.12 The Ministry received an application for determination on 15 September 2014.

4. The submissions

- 4.1 In a covering letter with the application for determination, the applicant set out some of the background to the dispute and questioned whether building consent was required when the retaining wall was less than 1m high and there was no surcharge, and whether the authority could 'impose' requirements relating to a 12kPa surcharge when there was no surcharge, and whether the authority (or the consultant acting on its behalf) could effectively stop work and refuse further inspections.
- 4.2 The applicant considers that the retaining wall complies as it is less than 950mm high and the bottom of the retaining wall is more than 950mm from the boundary, and it is adjacent to the neighbour's courtyard where 'no building or driveway can be constructed'.
- 4.3 A draft determination was issued to the parties for comment on 26 January 2015.
- 4.4 In a response received on 1 February 2015, the authority accepted the draft determination without further comment.
- 4.5 The applicant responded on 5 February 2015, submitting that the determination should address the matter of non-compliance of the boundary fence that has been used to retain the raised ground level of the adjacent property.
- 4.6 In response to the applicant's submission, I note that the boundary fence, including the retained ground behind referred to in paragraph 2.3, existed at the time the applicant's retaining wall was constructed. Accordingly the surcharge from the raised ground level needed to be taken into account when designing the retaining wall (refer paragraph 6.1.3). It is noted that the backfilling plus the alteration of the fence itself is building work that is also required to satisfy the requirements of the Building Code Clause B1 with respect to the protection of other property.
- 4.7 The compliance of the boundary fence with the backfill placed behind it is not considered in this determination. Any matters of possible non-compliance with the boundary fence could be resolved between the parties and the neighbour in association with remedial work to the retaining wall itself.

5. The expert's report

- 5.1 As described in paragraph 1.6, I engaged an independent expert, who is a Chartered Professional Engineer, to assist me. The expert has noted in his report that he also consulted with the applicant's engineer (refer paragraph 5.4). The expert carried out a desktop review of the relevant documentation, and visited the site on 1 December 2014. The expert produced a report dated 15 January 2015 including as-built part site plan, sections and photographs. Copies of this report were forwarded to the parties on 16 January 2015.
- 5.2 The expert noted that the requirement for building consent was based on the authority's practise note that retaining walls on or immediately adjoining a boundary should be designed for a surcharge loading; 12.0kPa is recommended but there is discretion for this to be reduced to 5.0kPa if there is no possibility of a right of way or access lot on the adjoining site.
- 5.3 The expert described the construction of the retaining wall and noted that there was no visual evidence that there are any structural issues with the as-built wall. The expert also commented on the backfill behind and against the fence and that the fence posts are leaning towards the subject property as a result of that load. The expert considers the backfill would equate to a surcharge loading in excess of 12.0kPa at the boundary.
- 5.4 The expert stated that the applicant's engineer had advised him that:
- the design was based on information provided by the architectural consultant including retained heights and distances from the boundary
 - the applicant's engineer was not aware of the fill placed on the adjacent site
 - the applicant's engineer has not been to the site either before or after construction
 - the wall as-built was unlikely to satisfy Clause B1.
- 5.5 The expert concluded that in his opinion the wall should have been designed for a boundary surcharge loading because of the distance from the back of the retaining wall to the boundary in relation to the retaining wall height, and that the wall is already surcharged by fill placed by the neighbour and that surcharge loading would be in excess of 12.0kPa.
- 5.6 The expert noted that, if it wasn't for the build-up of fill on the adjacent property, it could be argued that a 5.0kPa boundary surcharge loading could have been acceptable for the design of the wall, although further investigation is required to substantiate this.

6. Discussion

6.1 Compliance of the retaining wall

- 6.1.1 The functional requirement for Clause B1 is that 'buildings, building elements and sitework shall withstand the combination of loads that they are likely to experience ... throughout their lives' and Clause B1.3.3 requires 'Account shall be taken of all physical conditions likely to affect the stability of *buildings, building elements and sitework*, including: ... (d) earth pressure'

- 6.1.2 The expert has observed that the retaining wall is constructed closer to the boundary than was allowed for in the calculations of the applicant's engineer, and that there is an additional surcharge from the backfill on the adjacent property that is likely to be in excess of 12.0kPa. In addition, in discussion with the expert, the applicant's engineer has advised the as-built wall is unlikely to comply with Clause B1.
- 6.1.3 Given the findings of the expert, I conclude that the retaining wall as built does not comply with Clause B1.3.3 of the Building Code in that it does not take account of the earth pressures resulting from the positioning of the wall in relation to the boundary and the ground level of the adjacent property.

6.2 Is the work exempt from the need for a building consent

- 6.2.1 Schedule 1 sets out those types of building work for which building consent is not required. Clause 20 of Schedule 1, exempts the following:

Building work in connection with a retaining wall that—

- (a) retains not more than 1.5 metres depth of ground; and
- (b) does not support any surcharge or any load additional to the load of that ground (for example, the load of vehicles).

- 6.2.2 In a previous determination⁴ I considered the definition of the term surcharge and stated that:

5.8.1 In my view "surcharge" is not limited to vehicles as the one example of an additional load given in paragraph (c) of Schedule 1. I take that example to show that surcharges arise not only from permanent loads from the ground itself including buildings located on the ground, but also from occasional loads such as those of vehicles.

I continue to hold that view and consider it applies in this case.

- 6.2.3 Although the retaining wall is less than 1.5m in height, it has been located in a position where there is a surcharge additional to the load of the ground i.e. the raised ground level of the adjacent property.
- 6.2.4 Accordingly I am of the view that the retaining wall should not have been built without consent, and that the authority was correct in the exercise of its powers of decision in requiring the building consent be amended to include the retaining wall.

7. What happens next?

- 7.1 It is now for the applicant to bring the retaining wall into compliance with the Building Code. I suggest that the applicant engage the services of an appropriately qualified person to evaluate the as-built structure and develop a proposal of the building work required to make the retaining wall compliant. That proposal should then be put to the authority for its approval.
- 7.2 The consultant has issued a directive that appears to the applicant to be a 'stop work' notice. I see no reason why other work unrelated to the retaining wall and associated sitework or immediately associated with the wall, cannot continue while issues associated with the retaining wall are resolved.
- 7.3 The authority retains the option of issuing a notice to fix should no action be taken in bringing the retaining wall into compliance with the Building Code.

⁴ Determination 2008/7 Notice to fix in respect of a retaining wall (*Department of Building and Housing*) 30 January 2008.

8. The decision

8.1 In accordance with section 188 of the Building Act 2004, I hereby determine that

- the as-built retaining wall does not comply with Clause B1.3.3(d) of the Building Code, and
- the exercise of the authority's powers of decision in requiring the building consent be amended to include the retaining wall is correct; and accordingly I confirm that decision.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 25 February 2015.

John Gardiner
Manager Determinations and Assurance

Appendix A

A.1 The relevant sections of the Building Act

17 All building work must comply with building code

All building work must comply with the building code to the extent required by this Act, whether or not a building consent is required in respect of that building work.

Schedule 1

Building work for which building consent not required

20 Retaining walls

Building work in connection with a retaining wall that—

- (a) retains not more than 1.5 metres depth of ground; and
- (b) does not support any surcharge or any load additional to the load of that ground (for example, the load of vehicles).

A.1 The relevant clauses of the Building Code

Objective

B1.1 The objective of this provision is to:

- (a) safeguard people from injury caused by structural failure,
- (b) safeguard people from loss of *amenity* caused by structural behaviour, and
- (c) protect *other property* from physical damage caused by structural failure.

Functional requirement

B1.2 *Buildings, building elements and sitework* shall withstand the combination of loads that they are likely to experience during *construction or alteration* and throughout their lives.

Performance

B1.3.1 *Buildings, building elements and sitework* shall have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing during *construction or alteration* and throughout their lives.

B1.3.2 *Buildings, building elements and sitework* shall have a low probability of causing loss of *amenity* through undue deformation, vibratory response, degradation, or other physical characteristics throughout their lives, or during *construction or alteration* when the *building* is in use.

B1.3.3 Account shall be taken of all physical conditions likely to affect the stability of *buildings, building elements and sitework*, including:

...

- (d) earth pressure,

...