



Determination 2020/031

Regarding the purported refusal to issue a building consent for the construction of retaining walls and associated drainage at 16 Newark Close, Tauranga

Summary

This determination considers whether the authority was correct to refuse to grant a building consent for the construction of a number of retaining walls on a site with respect to ground water collected by drainage installed behind the walls. The determination considers whether the ground water collected falls within the definition of 'surface water' as it applies to Building Code Clause E1 Surface water.

1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004 (“the Act”) made under due authorisation by me, Katie Gordon, Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry¹.
- 1.2 The parties to this determination are:
 - the owner of the property, The Doing Good Foundation (“the applicant”), acting through an agent (“the agent”)
 - Tauranga City Council carrying out its duties as a territorial authority or building consent authority (“the authority”).
- 1.3 The determination arises from the authority’s purported refusal to grant a building consent to construct retaining walls and associated drainage at the property (“the proposed building work”). The authority considers water collected by drainage installed behind the retaining walls is surface water, so Building Code Clause E1 Surface water² is applicable.
- 1.4 Accordingly, I consider the matter to be determined³ is whether the authority was correct to refuse to grant a building consent for the proposed building work with respect to its consideration of water collected by drainage installed behind the retaining walls being surface water in terms of the Building Code.

¹ The Building Act and Building Code (Schedule 1 of the Building Regulations 1992) are available at www.legislation.govt.nz. Information about the legislation, as well as past determinations, compliance documents and guidance issued by the Ministry, is available at www.building.govt.nz.

² References to clauses in this determination are to clauses of the Building Code and to sections are to sections of the Act, unless otherwise specified.

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

- 1.5 In making my decision I have considered the parties' submissions and the other evidence in this matter. I have taken into account the relevant definitions in Clause A2 Interpretation as these apply to Clause E1, but I have not otherwise considered the compliance of the proposed building work with Clause E1, nor have I considered its compliance with any other Building Code clauses.
- 1.6 Appendix A contains relevant extracts from the legislation.

2. The proposed building work and background

2.1 The site

- 2.1.1 The applicant's property is an elevated site of about 1100 m², near the top of a ridge falling towards the north east (refer to Figure 1). The south west part of the property is gently sloping, with steep cuts near the western boundary. The north east part contains moderate slopes with an overall gradient of up to 15°.
- 2.1.2 The property is bounded by residential properties on three sides and has a narrow access way to the north east. There are existing retaining walls on neighbouring sites, near the property's northern and eastern boundaries.

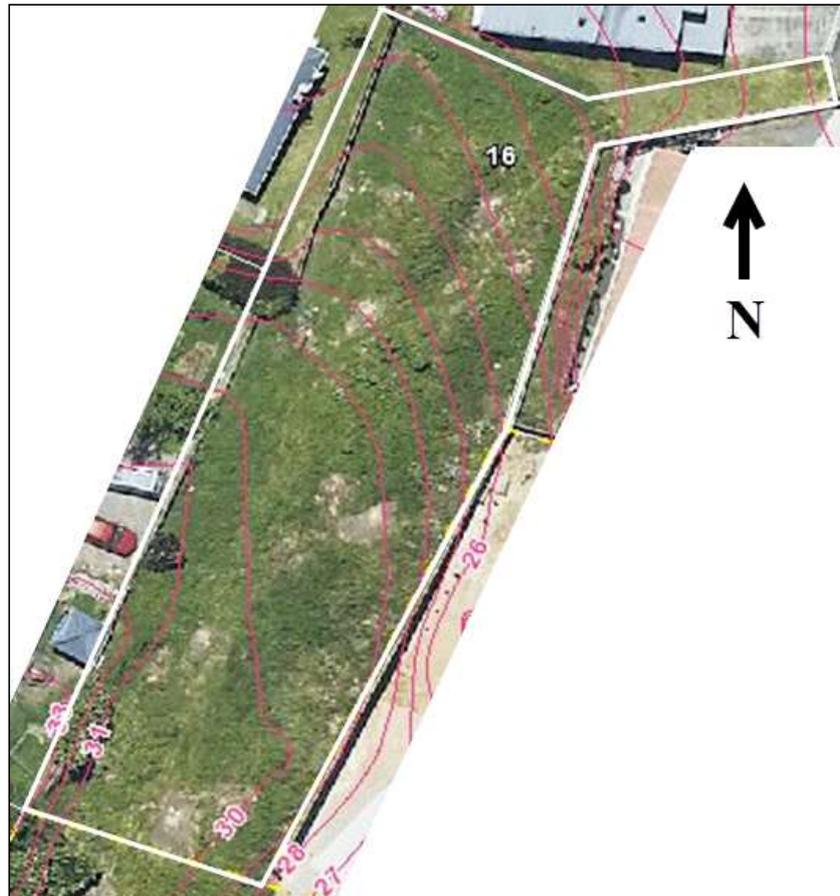


Figure 1: Aerial view and contours⁴

⁴ Image copied from the authority's MAPI website

The geotechnical report

- 2.1.3 The applicant plans to subdivide the property into three lots and carry out earthworks to create building platforms. The proposed building work includes a series of timber pole retaining walls near the areas of fill and along the western boundary, and associated drainage.
- 2.1.4 On 5 February 2019 an engineering consultancy firm (“the applicant’s consultants”) provided a report based on their geotechnical assessment of the property (“the geotechnical report”). This report concluded the property was geotechnically suitable for building development in accordance with the requirements of the Building Code and NZS 3604:2011⁵ providing the report’s recommendations were complied with. It also said specific design of retaining walls and surface water disposal would be required.
- 2.1.5 The geotechnical report said:
- ground conditions at the property were generally 0.1-0.3m of topsoil (then various layers of silt and sand); testing indicated the silts were stiff to very stiff; and shallow foundations designed in accordance with NZS 3604 could be used for future buildings “provided the sites are adequately retained”
 - no ground water was encountered during the site investigation; the ground water level was expected to be “at depth” given the elevated site; most of the soil layers on the upper part of the property were moist to wet during the investigation and perched water may be present after periods of heavy rainfall.
- 2.1.6 Section 8.4 of the report concerned surface water, saying:
- [Surface water] from roof and hard surfaces should be collected and piped to a suitable disposal location. The site is within an area of [surface water] specific design as indicated on [the authority’s map system].
- It is expected that [surface water] will be attenuated and disposed via [the authority’s surface water] reticulated system. Specific design will be required. Onsite disposal of [surface water] through soakage is not recommended due to the sloping ground and existing retaining walls below.

2.2 Application for building consent and the proposed building work

- 2.2.1 On 3 October 2019 the applicant applied for a building consent⁶ to “construct land retaining walls including drainage and fences” (“the proposed building work”). Various requests for information (RFIs) followed from the authority (refer to paragraph 2.3.1) and some aspects of the original plans and specifications were amended.
- 2.2.2 The revised site plan dated 14 January 2020⁷ shows the approximate locations of the contoured fill, retaining walls (labelled A to K) and associated drainage. Notes on this plan include: “Contour fill surfaces to prevent collection or concentration of surface water, by linear flow over the face of the retaining wall.” This version of the site plan is also marked as reviewed by the applicant’s consultants for general conformance with their geotechnical design requirements.

⁵ New Zealand Standard NZS 3604:2011 Timber-framed buildings

⁶ Application number 67479875RS; later referred to as BC 192115

⁷ Site plan for 16 Newark Close, “BC 192115, Project: Land Retaining Walls”, dated “25 Nov 2019, 14 Jan 2020”

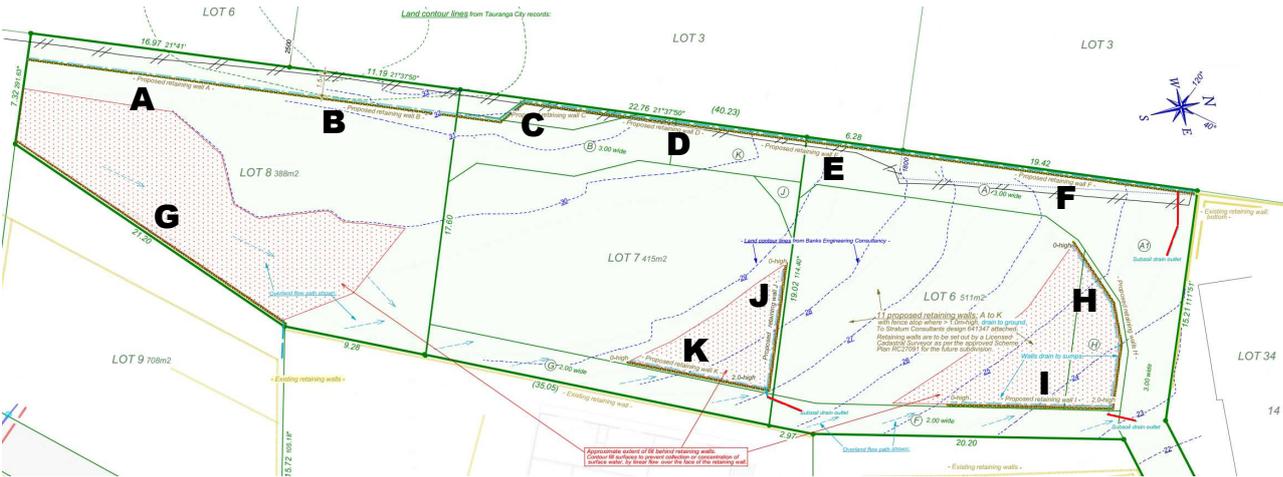


Figure 2: Retaining wall locations and drainage (Walls A to K)

2.2.3 The retaining wall design is illustrated in Figure 3, which is an extract from the drawing by the applicant’s consultants dated 16 January 2020⁸. This extract is for retaining walls A to E – the design for the other walls is similar.

- All retaining walls are to be constructed above ground, varying with the terrain (and with a maximum height of 3m). Each retaining wall comprises: H5⁹ treated timber poles set in 20MPa concrete (pole dimensions, spacing and posthole depths vary with the wall height and ground profile); H4 treated timber rails 150mm wide by 50mm thick (with double rails where the retained height exceeds 1.5m) secured to the poles with galvanised nails; and a 1.2m high paling fence on top of the wall where the retained height exceeds 1m.
- A drainage layer of 20-50mm “clean free draining rock” sits behind, and extends the height of, each retaining wall (as shown in Figure 3). This layer is at least 300mm wide at the top and is backed with drainage cloth. The drainage layer is capped with an impermeable layer 300mm thick that extends a short distance along the adjacent ground. At the base of the drainage layer is a 100mm diameter perforated drainage coil (“the drainage coil”). Outlets for these drainage coils are indicated in Figure 2.

⁸ From “Timber Wall Details, 16 Newark Close”, drawing 641347-M-E-D002 1-5, Issue A dated 16.01.20 by the applicant’s consultants. The drawing has five pages - for retaining walls A-E, F, G, H-I and J-K respectively.

⁹ Hazard class as described in New Zealand Standard NZS 3640:2003 Chemical preservation of round and sawn timber

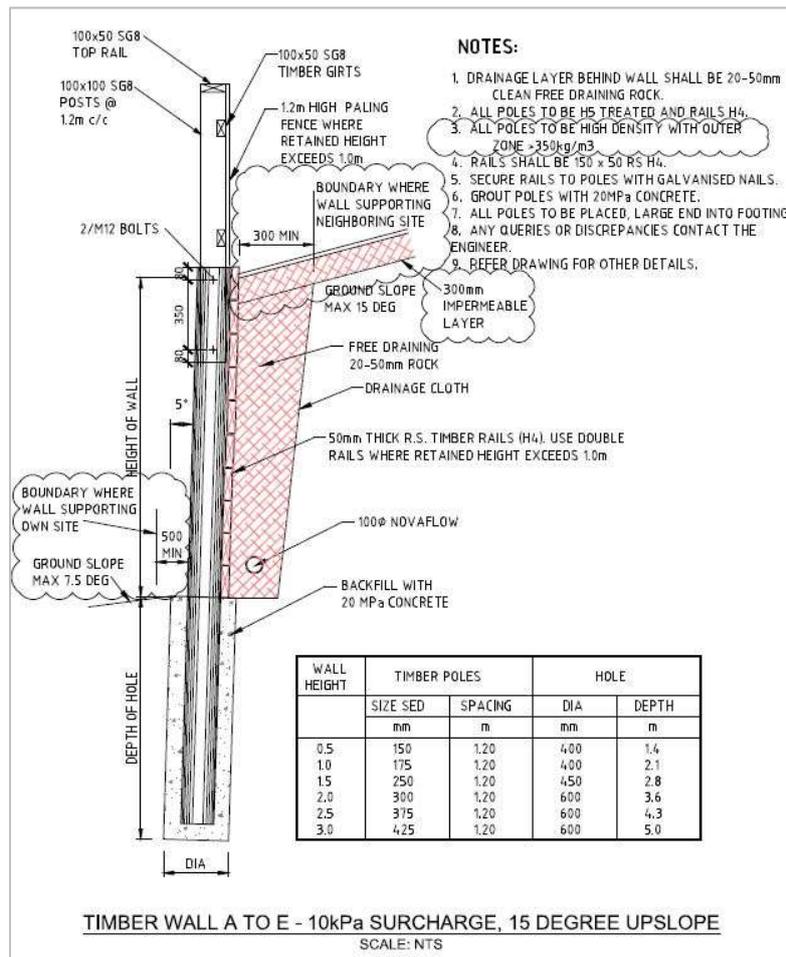


Figure 3: Extract from retaining wall design (Walls A to E), drawing dated 16 January 2020

2.3 Requests for information and related correspondence

2.3.1 Correspondence between the authority and agent relating to the proposed building work, including relevant RFIs, included the following:

Date	Author	Response
11 Nov 2019	The authority	RFI includes queries re the wall design, “[surface water] specific design” and disposal.
3 Dec 2019	The agent	Sends updated wall plan dated 25 November 2019, says: “The discharge of the drainage from the retaining wall backfill groundwater, via the sump, is to be to the ground surface as overland flow towards the north east access way.”
11 Dec 2019	The authority	“s/w ¹⁰ drainage to land is not allowed because the concentrated flow may possibly occur. It has to be discharged into s/w system, as per the requirements of the Geotechnical report – 8.4 Stormwater. Not resolved.”

¹⁰ I assume this is an abbreviation for stormwater.

Date	Author	Response
12 Dec 2019	The agent	<p>Says the geotechnical report section 8.4 applies to “stormwater from roof and hard surfaces” which is surface water as defined in the Building Code (the agent provides the definition of surface water from Clause A2); adds that ground water (i.e. sub-surface water) that may be collected by the drainage coils behind the retaining walls is excluded from Clause E1 in the definitions.</p> <p>Says the geotechnical report’s conclusion refers to specific design of the retaining walls and stormwater disposal being required. Also says the “proposed method of discharge” from the drainage coils is included in the applicant’s consultants’ specific design for the retaining walls.</p>
30 Jan 2020	The authority	<p>“Please amend the plans regarding the drainage work as per [a separate building consent application for a different site]. Not resolved. Please direct the concentrated stormwater discharge from the retaining walls to an appropriate outfall (overland flow is not permitted as it has been collected and concentrated).</p> <p>[Clause] E1 states that surface water is All naturally occurring water, other than sub-surface water, which results from rainfall on the site or water flowing onto the site, including that flowing from a drain, stream, river, lake or sea. [The authority] refutes your argument that this is sub-surface water because the rainfall lands on your site, is then concentrated and may for a time be sub-surface water as it drains through the retaining wall drainage material and then exits the [drainage coils] as surface water in a concentrated flow. The application has still not demonstrated compliance with [Clause] E1. Not resolved.”</p>
30 Jan 2020	The agent	<p>“As previously advised in the responses dated 17 January 2020 and 12 December 2019, to the earlier respective RFIs. Sub-surface water, which is the substance of any possible water associated with the retaining walls as detailed, is explicitly excluded from the requirements for surface water under [Clause] E1...”</p>

2.4 The application for a determination

- 2.4.1 On 21 February 2020 the Ministry received an application for a determination. The Ministry accepted this application on 27 February 2020, asked the agent for a full copy of the building consent application, and asked the authority for its specific reasons for declining to grant the building consent.
- 2.4.2 The Ministry emailed the authority again on 30 April 2020, saying Clause E1 only applied to surface water and the application information showed the parties disagreed about the definition of this term. The Ministry said the impermeable layer on top of the drainage metal behind the retaining walls would restrict the passage of any surface water, and that the definition of surface water did not include any ground water that might collect in the subsoil drainage coils. The Ministry also asked the authority to respond to the agent’s contention that the site was elevated and was unlikely to have much, if any, ground water draining from behind the walls.

- 2.4.3 On 5 May 2020 the authority sent copies of emails between the agent and the authority¹¹ (11 November 2019 - 26 February 2020), saying these emails explained its position. The authority said as it had offered to resolve the issue that might remove the need for a determination given both parties agreed. The email exchange included the following:
- 25 February 2020 – the authority emailed the agent saying: “After some internal discussions around subsoil drains and in particular your building consent application internally, we have decided that your initial proposal was suitable. ...” and that a minor variation could be sought to revert to the original design of having the discharge from the retaining walls being treated as overland flow
 - 26 February 2020 – the agent replied that a minor variation was not expected to be of benefit and a determination had been applied for.
- 2.4.4 After receipt of this correspondence the Ministry wrote to the agent on 6 May 2020, saying there no longer appeared to be a matter in dispute. The agent acknowledged this on 7 May 2020 advising he wished to proceed with the determination.

3. Submissions and the draft determination

3.1 The initial submissions

- 3.1.1 The agent provided supporting information with the application and subsequently, including:
- a submission dated 21 February 2020 including a contour map of the property; extracts from the authority’s RFIs during the building consent process and related correspondence between the authority and the agent
 - copies of the building consent application; the geotechnical report; a site plan dated “25 Nov 2019, 14 Jan 2020”, retaining wall elevations (undated), drawings (dated 16 January 2020) and supporting calculations (5 November 2019) by the applicant’s consultants; a certificate of design work dated 25 August 2019 and a producer statement design (PS1) from the applicant’s consultants dated 16 January 2020.
- 3.1.2 The agent said the issue concerned the authority’s requirement to comply with Clause E1 for subsurface water from the free draining backfill detailed for a retaining wall.
- 3.1.3 The agent highlighted the authority’s RFIs regarding surface water and responses to these (refer to paragraph 2.3.1), and said the authority was still refusing to grant the building consent based on the argument provided in its 30 January 2020 response¹².
- 3.1.4 In the agent’s view, the impermeable layer detailed for the retaining walls would seal the ground surface from the free draining backfill, preventing the ingress of surface water into this backfill, and any water within the free draining backfill was “excluded sub-surface water” as per the definition in the Building Code.

Taking the rationale of [the authority] a step further, there is no provision or way to reasonably quantify the amount of water coming from the free draining backfill, to then demonstrate compliance with the [Clause] E1 as they have requested. Hence a possible reason for exclusion of sub-surface water from [Clause] E1.

¹¹ For a possible complaint under section 200 of the Act

¹² I note that the agent’s submission predated the authority’s email of 25 February 2020 in which it changed its view.

Also any reasonable consideration of the amount of water coming from the free draining backfill to the retaining walls would reasonably conclude the amount of water to be negligible and inconsequential, in terms of meeting the performance requirements of [Clause] E1.3. This is even more particularly so given the location of the site and retaining walls that are located at the top of a hill...

- 3.1.5 The authority did not provide a separate submission but responded to the Ministry on 5 May 2020 sending correspondence described in paragraph 2.4.3.

3.2 The draft determination

- 3.2.1 A draft of this determination was issued to the parties for comment on 2 July 2020; both parties accepted the draft without comment.

4. Discussion

4.1 General

- 4.1.1 At issue in this determination is the authority's (previously held) view that water collected by the drainage coils behind the retaining walls is "surface water" in terms of the Building Code, so that the requirements of Clause E1 Surface Water apply to the management of this water. The authority considered these requirements were not met and refused to grant the building consent. The applicant maintains this water is "sub-surface water" so Clause E1 does not apply.

- 4.1.2 Section 49 of the Act states:

Grant of building consent

- (1) A building consent authority must grant a building consent if it is satisfied on reasonable grounds that the provisions of the building code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.

- 4.1.3 Put another way, if the authority is satisfied on reasonable grounds that the proposed building work would comply with all the relevant provisions of the Building Code it must grant a building consent for that work.

4.2 Surface water and sub-surface water (ground water)

- 4.2.1 As the applicant has noted, surface water is defined in Clause A2 as:

surface water all naturally occurring water, other than sub-surface water, which results from rainfall on the site or water flowing onto the site, including that flowing from a drain, stream, river, lake or sea

- 4.2.2 "Sub-surface water" is not defined separately in the Building Code, but I consider it evident from the above definition that it is water occurring naturally below the surface. Sub-surface water is also referred to as ground water, as evidenced by the Encyclopaedia Britannica description¹³ of ground water as:

..water that occurs below the surface of Earth, where it occupies all or part of the void spaces in soils or geologic strata. Groundwater is also called subsurface water to distinguish it from surface water.

- 4.2.3 The Building Code contains specific provisions for managing surface water in Clause E1, which requires: "Buildings and sitework shall be constructed in a way that protects people and other property from the adverse effects of surface water" (Clause E.1.2). Clause E1 contains requirements for constructing drainage systems for the

¹³ From www.brittanica.com/science/groundwater, retrieved 17 June 2020.

disposal of surface water (Clause E1.3.3). This clause also contains requirements for disposing of surface water collected or concentrated by buildings or sitework in such a way that this avoids the likelihood of damage or nuisance to other property¹⁴ (Clause E1.3.1).

4.3 Whether the authority's decision was correct

- 4.3.1 In considering whether the water collected by the drainage coils is surface water and must comply with Clause E1 I have taken into account the design of the retaining walls and associated drainage. As described earlier in this determination and illustrated in Figure 3, there is a layer of drainage metal behind each retaining wall which is backed by drainage cloth. At the base of the retaining wall there is a perforated drainage coil; at the top of the retaining wall is a 300mm thick impermeable layer extending across the top of the drainage metal, and for a short distance along the adjacent slope.
- 4.3.2 In my view the wall's design, and the impermeable layer in particular, would prevent rainwater (surface water) hitting the ground above the retaining walls from flowing down through the drainage metal and into the drainage coils. I also consider it unlikely that any significant rain water would penetrate the wall to the extent that it would be collected by the drainage coils. I consider the only water able to reach the drainage coils is sub-surface water seeping through from the retained slopes.
- 4.3.3 Accordingly, I consider that Clause E1's requirements for the disposal of surface water do not apply to the water arriving at the drainage coils.
- 4.3.4 In conclusion, I consider the authority was incorrect to regard water from the drainage coils as surface water and to refuse a building consent on the basis that its disposal was not in accordance with Clause E1.
- 4.3.5 For completeness, I note that the Building Code does not contain any requirements for the disposal of sub-surface/ground water in Clause E1 or elsewhere. I also note the findings in the geotechnical report that the site is elevated and any ground water was "at depth". I consider it unlikely that any significant ground water would arrive at the drainage coils.
- 4.3.6 I note that the authority has offered to process a change to the plans (reverting to the original design) as a minor variation but the agent does not consider this beneficial at this time. I leave this for the parties to agree.

¹⁴ "Other property" is as defined in Clause A2.

5. The decision

- 5.1 In accordance with section 188 of the Building Act 2004 I hereby determine that the authority was incorrect in its decision to refuse a building consent for the proposed building work on the basis that water collected by drainage behind the retaining walls was surface water as it is defined in Clause A2 and applied in Clause E1.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 3 December 2020.

Katie Gordon
Manager Determinations

Appendix A: Extracts from the legislation

A1 The Building Code (Schedule 1 to the Building Regulations 1992)

Clause E1—Surface water

Provisions	Limits on application
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Objective

- E1.1** The objective of this provision is to:
- (a) safeguard people from injury or illness, and other property from damage, caused by surface water, and
 - (b) protect the outfalls of drainage systems.

Functional requirement

E1.2 Buildings and sitework shall be constructed in a way that protects people and other property from the adverse effects of surface water.

Performance

E1.3.1 Except as otherwise required under the Resource Management Act 1991 for the protection of other property, surface water, resulting from an event having a 10% probability of occurring annually and which is collected or concentrated by buildings or sitework, shall be disposed of in a way that avoids the likelihood of damage or nuisance to other property.

E1.3.2 Surface water, resulting from an event having a 2% probability of occurring annually, shall not enter buildings.

Performance E1.3.2 shall apply only to housing, communal residential and communal non-residential buildings.

E1.3.3 Drainage systems for the disposal of surface water shall be constructed to:

- (a) convey surface water to an appropriate outfall using gravity flow where possible,
- (b) avoid the likelihood of blockages,
- (c) avoid the likelihood of leakage, penetration by roots, or the entry of ground water where pipes or lined channels are used,
- (d) provide reasonable access for maintenance and clearing blockages,
- (e) avoid the likelihood of damage to any outfall, in a manner acceptable to the network utility operator, and
- (f) avoid the likelihood of damage from superimposed loads or normal ground movements.