

# Determination 2024/048

**Regarding an authority's decision to grant a building consent**

**12 Beach Road, Haumoana, Hawke's Bay**

## **Summary**

This determination considers an authority's decision to grant a building consent regarding building work associated with the relocation of an existing dwelling. The authority believes it granted the building consent in error, and that decision should be reversed, due to concerns that have subsequently arisen with the designs for the on-site surface water and foul water disposal systems.

In this determination, unless otherwise stated, references to “sections” are to sections of the Building Act 2004 (“the Act”) and references to “clauses” are to clauses in Schedule 1 (“the Building Code”) of the Building Regulations 1992.

The Act and the Building Code are available at [www.legislation.govt.nz](http://www.legislation.govt.nz). Information about the legislation, as well as past determinations, compliance documents (eg, Acceptable Solutions) and guidance issued by the Ministry, is available at [www.building.govt.nz](http://www.building.govt.nz).

## 1. The matter to be determined

- 1.1. This is a determination made under due authorisation by me, Andrew Eames, Principal Advisor Determinations Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.<sup>1</sup>
- 1.2. The parties to the determination are:
  - 1.2.1. Hastings District Council, carrying out its duties as a territorial authority or building consent authority (“the authority”), who applied for this determination
  - 1.2.2. Averill Moore Property Limited, the owner of the property (“the owner”).
- 1.3. I consider the following are persons with an interest<sup>2</sup> in this determination:
  - 1.3.1. Development Nous Limited, the company which designed the surface water disposal system (“the surface water designer”)
  - 1.3.2. Waterflow New Zealand Limited, the company which designed the foul water disposal system (“the foul water designer”).
- 1.4. This determination arises from a decision by the authority to grant a building consent (number ABA20211360)<sup>3</sup> for building work to relocate an existing detached dwelling on to the property at 12 Beach Road, Haumoana, Hawke’s Bay (“the property”<sup>4</sup>).
- 1.5. The authority believes it granted and issued the building consent in error after it subsequently became aware of issues with similar surface water and foul water disposal systems on a neighbouring property, at 10 Beach Road, Haumoana, “which are failing in normal rainfall events”.

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<sup>1</sup> The Building Act 2004, section 185(1)(a) provides the Chief Executive of the Ministry with the power to make determinations.

<sup>2</sup> It is appropriate to include in the determinations process persons whose rights, obligations or interests might be affected by the outcome of the determination. Where those persons do not meet the test of a party under section 176, they can be included at my discretion as a person with an interest.

<sup>3</sup> Section 49.

<sup>4</sup> Legal description Lot 2 DP 554406, Record of Title identifier 963819.

- 1.6. The authority is of the view “the onsite disposal system design details that have been supplied and approved for 12 Beach Road, if constructed, are unlikely to comply with the...Building Code”, specifically clauses B2 Durability, E1 Surface Water, and G13 Foul Water.
- 1.7. The matter to be determined, under section 177(1)(b) and (2)(a), is the authority’s decision to grant and issue the building consent for the relocation of a dwelling and associated building works.
- 1.8. In deciding this matter, I must consider if the proposed on-site surface water and foul water disposal systems comply with clauses B2, E1 and G13.

### **Issues outside this determination**

- 1.9. The other building work described in building consent ABA20211360 not associated with the surface water and foul water disposal systems.
- 1.10. The authority has not raised concerns with the Building Code compliance of the following proposed elements of the design, therefore, they have not been considered further:
  - 1.10.1. the plumbing and drainage from the dwelling to the point it enters the proprietary foul water treatment system (as detailed on building consent site plan 01 revision A dated 7 July 2021)
  - 1.10.2. the rainwater downpipes from the roof and below ground surface water drainage from the dwelling to the point it enters the on-site infiltration swale (as detailed on building consent site plan 01 revision A dated 7 July 2021)
  - 1.10.3. the proprietary foul water treatment system.
- 1.11. The authority has referred to concerns with the Building Code compliance of the proposed surface water disposal system at 12 Beach Road, including that it “does not expect that the drainage system for the disposal of surface water can be constructed to convey water to an appropriate outfall”. I have assumed the authority is referring to clause E1.3.3(a). However, the authority has not raised concerns with compliance of clause E1.3.3(b) to (f) inclusive, therefore, these have not been considered further.
- 1.12. The authority has referred to concerns with the Building Code compliance of the proposed foul water disposal system at 12 Beach Road, including, “if the system were constructed, there is unlikely to be adequate capacity for the volume of foul water and the frequency of disposal (as the effluent field may be inundated) and there is a likelihood of contamination of soils, and ground water”. I have assumed the authority is referring to clause G13.3.4(a), (d) and (f). However, the authority

has not raised concerns with compliance of clauses G13.3.4(b), (c), (e), (g) to (k) inclusive, therefore, these have not been considered further.

- 1.13. The notification that the building consent was issued pursuant to Section 72 Building Act 2004 ('Hazard notice') has not been disputed by parties and I will not consider it in this determination.

## 2. The building work

- 2.1. The work involves the relocation onto the property at 12 Beach Road of an existing single storey detached dwelling.<sup>5</sup> The building work includes the construction of new timber piles and subfloor framing to support and lift the dwelling, so the finished floor level is raised above the existing ground level.
- 2.2. The property is reasonably level with the lowest point being towards the east corner, and a high point to the south corner.
- 2.3. Property maps from the authority dated 1 October 2021, copies of which were provided to the Ministry by the owner, indicate:
- 2.3.1. There are no reticulated surface water or foul water systems at Beach Road.
- 2.3.2. Approximately half of the property, closest to Beach Road, is a "flood risk area".<sup>6</sup>
- 2.3.3. The property is in a "coastal inundation" area described as "Year 2120 – 1% AEP"<sup>7</sup>, and is within the 500m "buffer line from [the] coast", and Haumoana Inundation RMU ('flooding resource management unit').<sup>8</sup>

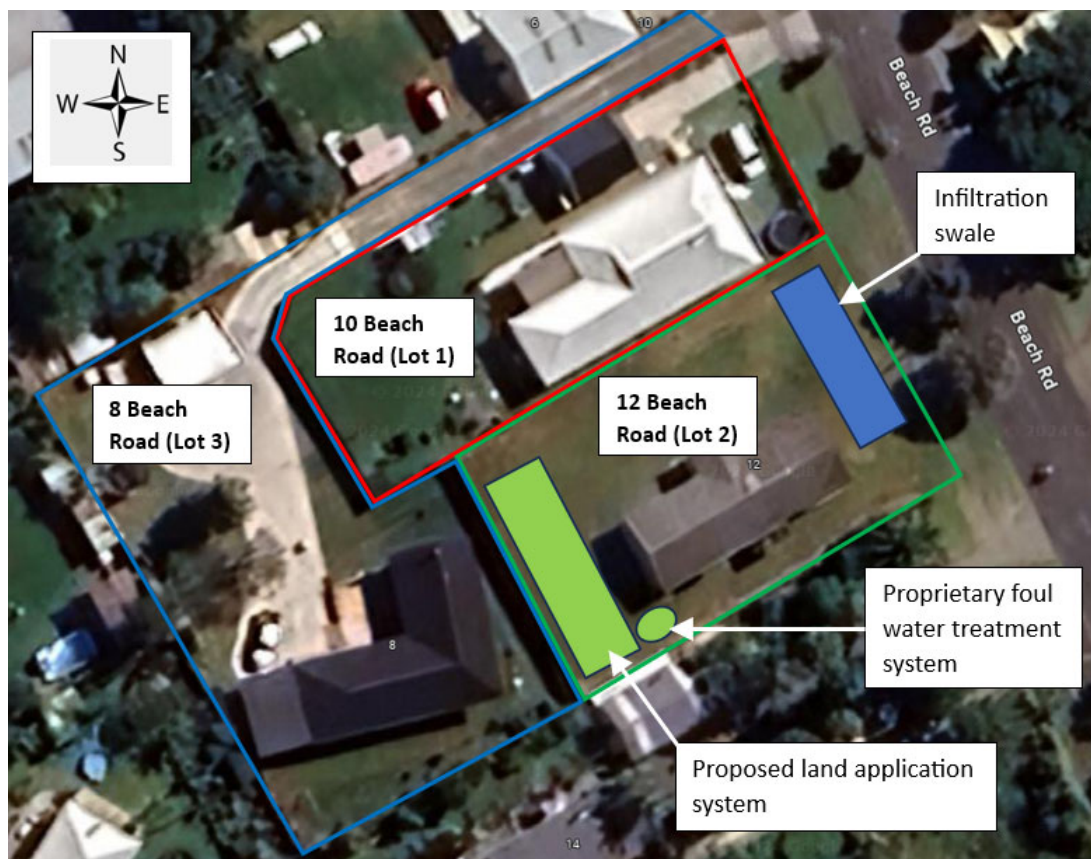
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<sup>5</sup> The parties advise the dwelling has already been relocated onto the property and is temporarily supported on some timber dunnage.

<sup>6</sup> A corresponding "Flooding" plan from the Hawke's Bay Emergency Management Group dated 16 July 2019, compiled from records from Hawke's Bay Regional Council, refers to the other half of the property being a "Low risk" flooding area.

<sup>7</sup> I note the same plan does not indicate the property is in an area subject to any present day or year 2065 coastal inundation in a 1 percent event. Annual exceedance probability (AEP).

<sup>8</sup> Measured from Google Maps NZ (accessed on 29 April 2024) the horizontal distance from the north-east boundary of the property to the nearest part of the coastline is approximately 230m to 260m.



**Figure 1. Site plan (not to scale)<sup>9</sup>**

Note: The property boundaries and locations of foul water and surface water systems as shown are indicative only.

### Surface water disposal system

- 2.4. The design for the on-site surface water disposal system was undertaken by a Chartered Professional Engineer. The design was supported by a Producer Statement – Design (PS1) dated 8 October 2021, and stated compliance with clause E1.<sup>10</sup> The PS1 also confirmed the construction monitoring would be conducted by the engineer.
- 2.5. The design was further supported by an “engineering servicing report” (number H20190090, ESR-V3, version 3) dated 13 February 2020; this was included in the plans and specifications accompanying the building consent application. The report included but was not limited to (in summary):

<sup>9</sup> Figure 1 has been generated from Google Maps NZ, accessed on 29 April 2024.

<sup>10</sup> Specifically, E1/VMA (sic) and E1/AS1 (I have assumed by E1/VMA it was intending to refer to verification method E1/VM1). Acceptable Solution E1/AS1 (first edition, amendment 10, effective 1 January 2017 to 3 November 2021). Further, I note the PS1 refer to “Earthworks and stormwater design” for the “subdivision” at “10 Beach Road”, however, the two plans referenced only refer to the proposed design for 12 Beach Road.

- 2.5.1. A topographical survey plan (H20190090-S001 dated 6 September 2019).
  - 2.5.2. Surface water calculations.
  - 2.5.3. Consideration to the potential flooding hazard on the property.
  - 2.5.4. An email from the surface water designer to the Hawke's Bay Regional Council dated 9 October 2019 which acknowledged the presence of "a high water table" and "ground water was encountered" when a test pit was dug (1m deep).<sup>11</sup>
  - 2.5.5. Proposed 'site plan' H20190090-LOT 2-D300 Revision 2 dated 27 July 2021.
  - 2.5.6. Proposed 'details plan' H20190090-LOT 2-D310 Revision 1 dated 27 July 2021.
  - 2.5.7. The infiltration swale has "sufficient capacity to contain a 50 year storm event".
- 2.6. The surface water disposal system relies on forming an 'infiltration swale' ("the swale") on the property 1.5m from the north-east boundary, between the relocated dwelling and the grassed verge and pedestrian pavement along Beach Road. The swale is orientated to run parallel with the north-east boundary of the property.
  - 2.7. The proposed swale is 19m long, 580mm deep, with a capacity of 25m<sup>3</sup>.<sup>12</sup> The width at the top of the swale is 4m, and is 500mm wide at the base, with 1 in 3 battered slopes. In the centre of the swale is a 400mm x 400mm "polymer pit." 100mm below the invert of the swale, is "200mm sand or approved permeable soil" on 500mm of "graded 60 – 100mm ballast/rocks no fines" incorporating a "filter fabric".
  - 2.8. The surface water from the roof is taken by 60mm and 80mm diameter downpipes down into 100mm diameter below ground drains that terminate at the "polymer pit".
  - 2.9. Taken together, the overall depth of the construction of the swale is 580mm + 100mm + 200mm + 500mm = **1.38m**. The plans indicate a reduced (existing) level of 11.75 at all four corners of the swale. This implies the reduced level at the base of the construction of the swale would be approximately 10.37.

### **Foul water disposal system**

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<sup>11</sup> The email does not state which test pit was being referenced or its location on the property (being the former 10 Beach Road property, prior to the subdivision).

<sup>12</sup> The plan states, at note 6, "Location, size, invert level and connection points are conceptual only and subject to detail design".

- 2.10. The design for the on-site foul water disposal system relies on using a proprietary aerated wastewater treatment system (“AWTS”)<sup>(13)(14)</sup> in combination with a land application system incorporating absorption beds<sup>15</sup>.
- 2.11. In this case, the design for the land application system is based on 107m<sup>2</sup> of ‘soakage’ or absorption beds, formed using two beds, 3m wide and 17.8m long, laid 1.5m apart.
- 2.12. The plans shows the 100mm diameter below ground foul water drainage from the dwelling connecting to the AWTS.
- 2.13. The proposed design for the foul water disposal system was supported by a ‘Statement of design – PS1’, signed by the foul water designer, dated 14 July 2021. The stated means of compliance with the Building Code was verification method G13/VM4 (Foul Water: On-site Disposal), B2 Durability, and AS/NZS 1547:2012.
- 2.14. The design was further supported by a “Onsite wastewater design report” dated 14 July 2021. The report included but was not limited to (in summary):
- 2.14.1. Ground water was noted at a depth greater than 1.2m (for both winter and summer periods), and there was “no sign of ground water or mottling<sup>16</sup> in [the] bore holes”.
- 2.14.2. There was no potential flooding.<sup>17</sup>
- 2.14.3. The disposal field soil category was described as “moderate draining”, referring to AS/NZS 1547:2012, Table E1 (‘Assessment of soil textures’).
- 2.14.4. Calculated the total daily wastewater production to be 1600 litres per day. This is less than the capacity of the AWTS which can accommodate 2200 litres per day, and the “land application system is designed to discharge a maximum volume of 1600 litres per day”.
- 2.14.5. Site location and layout plans, and a cross-section of a ‘conventional soakage bed’; this shows a 3m wide bed with 100mm diameter PVC pipes

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<sup>13</sup> AS/NZS 1547:2012, section 1.9, defines an AWTS as ‘a system which uses the processes of aeration followed by clarification to achieve biological treatment of wastewater’. Australian / New Zealand Standard AS/NZS 1547:2012 *On-site domestic wastewater management* as cited in Acceptable Solution G13/AS1 (second edition, amendment 8, effective 27 June 2019 to 3 November 2021).

<sup>14</sup> The product specification from the manufacturer for the AWTS refers to compliance with Australian / New Zealand Standard AS/NZS 1546:1.2008 *On-site domestic wastewater treatment units Part 1: Septic tanks* and Verification Method G13/VM4, and clause G13.3.4, as well as AS/NZS 1547:2012 and has “an expected lifespan of 50 years”.

<sup>15</sup> AS/NZS 1547:2012, section 1.9, defines ‘Land application system’ as ‘the system used to apply effluent from a wastewater treatment unit into or onto the soil for further in-soil treatment and absorption or evaporation’.

<sup>16</sup> Contrasting colours, spots or streaked areas of colour in soil.

<sup>17</sup> It is not clear if this statement was meant to refer to the potential flooding of the property (or part thereof), or any potential flooding of the land application system, or both.

incorporating 16mm holes every 500mm. The pipes are laid in 300mm of 'distribution aggregate' (20mm to 40mm in size) with a minimum cover of 75mm over the top of the pipes. Above this aggregate is a 'filter cloth' and a minimum of 100mm to 150mm of topsoil. The overall depth of the 'soakage bed' would be between 400mm to 450mm below existing ground level.

2.14.6. An 'assessment of environmental effects'. Section 1.7 titled 'Surface [and] Ground Water' states:

It is proposed to treat the water to a high standard prior to discharge and the proposed irrigation system will introduce the water into the topsoil horizon using Soakage Beds. A low application rate of treated effluent into the topsoil will significantly reduce the likelihood of any breakout or runoff or any risk of surface water contamination. With the ground water levels being [greater than] 1.2m this conservative DLR<sup>18</sup> also means the risk of ground water contamination is virtually nil. A majority of the undeveloped areas of the site are suitable for...Soakage Beds when the necessary setbacks are observed<sup>19</sup>. Risk Minor to Nil.<sup>20</sup>

2.14.7. Manufacturer's details of the proprietary AWTS<sup>21</sup> and associated 'home owners guide' for the care and maintenance of the system included (but was not limited to) 'perform regular monthly visual checks of your system and field', information on high water table installations, and detailed the process of regular servicing and maintenance inspections, as well as potential causes and remedial action to take in the event the alarm sounds (the alarm is integral to the AWTS).<sup>22</sup>

2.14.8. A copy of an 'On-site Effluent Treatment National Testing Programme (OSET NTP) certificate for the proposed proprietary AWTS dated 31 August 2010 which confirmed it met the secondary effluent quality requirements of AS/NZS 1547:2000.

<sup>18</sup> AS/NZS 1547:2012, section 1.9, defines Design Loading Rate (DLR) as 'the loading rate that applies to the distribution of effluent to the design area of an absorption trench or bed or mound land application system, expressed in L/m<sup>2</sup>/day or mm/day, and equivalent to the [Long-term acceptance rate] of the land application system reduced by a factor of safety'.

<sup>19</sup> For the purposes of this determination, I have assumed the statement regarding setbacks is in reference to section B5 'Site clearances...' of the onsite wastewater design report, and AS/NZS 1547:2012, Appendix R titled 'Recommended setback distances for land application systems' including table R1 that refers to 'vertical setback distance' to groundwater between 600mm to greater than 1.5m depending on soil conditions and the highest seasonal water table level.

<sup>20</sup> It is not clear if 'risk', in this case, is referring to the ground water contamination, or ground water level, or the observance of setbacks of the system layout, or a combination of all three items.

<sup>21</sup> The building consent application plans and specifications includes details of three different types of proprietary AWTS's. For the purposes of this determination, I have relied on the one specified on the "site plan" 01 dated 7 July 2021.

<sup>22</sup> This includes the irrigation pump not working, air supply not working, no power at the tank, and a blocked septic filter.



### 3. Background

- 3.1. On 11 December 2019, the owner applied for a subdivision consent under the Resource Management Act 1991 for the land “currently occupied at 10 Beach Road”. The application included reports from the surface water designer<sup>23</sup> and foul water designer<sup>24</sup> that provided details for the proposed means of disposing of both surface water and foul water on the property. The documentation also noted the risk of inundation (flooding).
- 3.2. On 28 August 2020, the authority prepared a report in respect of the proposed subdivision, including reference to the proposed surface water and foul water disposal systems and the property “being within a 50 year flood zone”.
- 3.3. On 31 August 2020, the authority issued a resource consent (RMA20190549) for the subdivision of the former 10 Beach Road, to create three separate Lots (including Lot 2 ie 12 Beach Road). The resource consent included details regarding the disposal of surface water and foul water on Lot 2.
- 3.4. On 27 October 2021, the owner applied for a building consent (ABA20211360) with the description, “relocate dwelling and internal alterations”. The application for building consent stated the means of compliance with clause B2 was Acceptable Solution B2/AS1, clause E1 was Acceptable Solution E1/AS1, and clause G13 was Acceptable Solution G13/AS1. Included in the building consent plans and specifications were copies of the following:
  - 3.4.1. A ‘resource consent discharge permit’ from Hawke’s Bay Regional Council dated 21 July 2020. The permit confirmed details of the setting out and size of “the land treatment field”, including (but not limited to) the minimum depth of the absorption bed at 450mm below finished ground level, and no discharge was to be within “600mm of the highest seasonal groundwater level”.
  - 3.4.2. A specification for the “drainage systems” stated, “carry out drainage work as applicable to: [Acceptable Solution] G13/AS2<sup>25</sup> and [Acceptable Solution] E1/AS1...”.
  - 3.4.3. A “geotechnical assessment” report for the subdivision dated 14 February 2020. The report included in summary (but was not limited to):
    - (1) The site is partially located within a 50-year flood zone.
    - (2) Confirmed details of subsoil investigations carried out on site.

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<sup>23</sup> Reference number H20190090 dated 10 December 2019.

<sup>24</sup> Project number WF6177 dated 19 July 2019. I note the report referred to a different proprietary AWTS product from that included in the building consent application plans and specifications.

<sup>25</sup> Acceptable Solution G13/AS2 ‘Drainage’ (second edition, amendment 8, effective 27 June 2019 to 3 November 2021).

- (3) No groundwater was encountered in areas where hand-augers were undertaken.
- (4) Some water seepage was observed in all test pit locations at approximately 1m below ground level at the time of the investigations (on 8 October 2019).
- (5) Further standing groundwater was encountered in test pits at 1.7m below ground level.
- (6) Nearby Hawke's Bay Regional Council well<sup>26</sup> recorded groundwater fluctuating between 2m and 2.4m below ground level which is consistent with the groundwater levels seen at the test pits.
- (7) Referred to the reports prepared by the surface water designer and foul water designer dated December 2019 and November 2019 respectively.
- (8) Concluded with "no significant geotechnical effect as a result of the proposed stormwater and effluent disposal plans" was envisaged.

3.5. On 28 April 2022, the authority granted and issued the building consent. The building consent was granted subject to a waiver under section 67 for clause "G13.3.4 for the duration of the event".<sup>(27)(28)</sup> The building consent also referred to "The relevant, known natural hazard in relation to this land is: d) inundation (flooding)".

3.6. On 15 November 2022, the authority sent a letter to owner's legal advisor outlining concerns with the onsite disposal systems at a neighbouring property "which are failing in normal rainfall events". The disposal systems at the neighbouring property are similar to those proposed for 12 Beach Road. The authority was of the view that:

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<sup>26</sup> The report did not identify which well was being referenced, or the period of time the monitoring results were being taken. I note data on the wells is available at [www.hbrc.govt.nz/environment/groundwater/](http://www.hbrc.govt.nz/environment/groundwater/). A well near to 12 Beach Road appears to be number 'well.16965' located at the Haumoana Pump Station close to the Clive Grange Domain Reserve and mouth of the Tukituki River. The data from 'well.16965' suggests that between May 2020 and May 2024 the groundwater level varied between 4.21m to 6.49m from "land surface".

<sup>27</sup> G13.3.4, "If no sewer is available, facilities for the storage, treatment, and disposal of foul water must be constructed" to take account of sub-clauses (a) to (k). However, it appears the waiver to clause G13.3.4 in this case did not limit its application to any one or combination of sub-clauses (a) to (k), therefore, I have assumed the waiver applied to the whole clause.

<sup>28</sup> It is not clear from the Form 5 alone what "event", or period of time ("duration"), the authority was referring to. However, the 'Building consent – residential processing checklist' dated April 2022 states, "...for a duration of time in the event of the flood hazard affecting the on-site waste water system". Regardless, the same checklist goes on to state the "Effluent disposal system is outside of [the] flood zone, therefore the natural hazard won't affect [the] Effluent system". I note, the same checklist did not raise concerns with surface water swale or the proposed outfall.

...the onsite disposal system design details that have been supplied and approved for the Property [ie 12 Beach Road], if constructed, are unlikely to comply with the New Zealand Building Code...In particular,...B2 Durability...E1 Surface Water...[and]...G13 Foul Water...[and] considers it unlikely that if built as designed, the property will receive a Code Compliance Certificate.

## 4. Submissions

### The authority

- 4.1. The authority provided a letter to the Ministry dated 20 December 2022; this repeated the concerns raised in its letter to the owner's legal advisor dated 15 November 2022, and stated (in summary) the design is unlikely to comply with:
  - 4.1.1. Clause B2 (B2.2 and B2.3.1) because "The secondary wastewater treatment tank, effluent field and drainage must last 15 years. Based on the information the [authority] has today, it is not confident that the effluent field will last the specified period".
  - 4.1.2. Clause E1 (E1.2, E1.3.1, E1.3.3) because the authority "no longer considers that surface water resulting from an event having a 10 [percent] probability of occurring annually and which is collected and concentrated by buildings or sitework, can be disposed of in a way that avoids the likelihood of damage or nuisance to other property". Further, the authority "does not expect that the drainage system for the disposal of surface water can be constructed to convey surface water to an appropriate outfall".<sup>29</sup>
  - 4.1.3. Clause G13 (G13.2, G13.3.4) because the "building will not be provided with an adequate system for the storage, treatment, and disposal of foul water". Further, if "the system were constructed, there is unlikely to be adequate capacity for the volume of foul water and frequency of disposal (as the effluent field may be inundated), there is a likelihood of contamination of soils, and ground water".
- 4.2. The authority also provided to the Ministry a letter dated 15 December 2022 from an engineering consultancy in which it stated (in summary):
  - 4.2.1. The authority "should not have issued [the] building consent for [the] residential development of 12 Beach Road".
  - 4.2.2. The "site does not have and cannot be provided with adequate on-site disposal areas for stormwater and sanitary effluent in accordance with [clauses] E1 and G13...or ensure contamination of surface water and groundwater by effluent does not occur on a regular basis".

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<sup>29</sup> Clause A2 – Interpretation, defines "outfall", for surface water, as 'that part of the disposal system receiving surface water...from the drainage system...For surface water, the outfall may include a natural water course, kerb and channel, or soakage system'.

- 4.2.3. In regards a neighbouring property, “when groundwater was encountered within the design depth of the disposal area during construction is evidence at least seasonally high groundwater will compromise the performance of the proposed disposal system”. The system “has proved inadequate”, and the “disposal system consented for construction on 12 Beach Road is to be formed at a lower level.
- 4.2.4. Evidence of “inadequate discharge to ground by soakage” is supported “by the requirement for regular pumping and trucking off site of effluent from the effluent disposal system formed on a neighbouring property which “is being triggered by high water alarms within the system”.
- 4.2.5. “Revoking the Building Consent for...12 Beach Road will reduce the requirement for concentrated discharge of stormwater and sanitary effluent onto a property where its position...makes such disposal highly susceptible to regular and on-going unacceptably poor performance”.
- 4.3. In correspondence to the Ministry dated 22 May 2024, the authority stated (in summary):
- 4.3.1. Based upon the information provided in the application for building consent on 27 October 2021, the authority was satisfied on reasonable grounds that the proposed building work would comply with the Building Code and the consent was granted and issued. However, the authority has since learnt that the reports did not properly identify the groundwater level and did not consider how the storm and wastewater systems would function together and be Building Code compliant.
- 4.3.2. It referred to issues with the surface water and foul water disposal systems at a neighbouring property failing “following a large rain event with a high volume of rain fall over a short period of time”. The water table at a neighbouring property was encountered at 920mm below ground level at the time of constructing the swale.
- 4.3.3. It is assumed that the same issues will apply at 12 Beach Road, given the similar ground levels of the adjacent properties.
- 4.3.4. The authority has obtained expert advice.<sup>30</sup>
- 4.3.5. The design for the surface water disposal system “is unlikely to meet the requirements of the building code for the actual conditions”.
- 4.3.6. The design for soakage rates stated by the surface water designer “is based on results from what appear to be an incorrectly undertaken test. Results

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<sup>30</sup> The advice appears to relate to several properties. It is not clear if it was informed by any site-specific tests (eg bore holes or test pits) at 12 Beach Road; rather the advice appeared to be as a result of a review of the resource consent and building consent documentation and a site visit in 2024).

suggest drainage equivalent to a sand, however [a] review of information from site investigation suggests that the soil is silt and clay". The "difference in drainage potential between what was used in the design (sand drainage) and what is actually present (silt) far exceeds the factor of safety. i.e. the factor of safety was insufficient to accommodate the likely errors introduced by the assumed drainage potential".

- 4.3.7. There was an "incorrect identification of groundwater level and the overestimation of drainage potential" based on assumed conditions.
  - 4.3.8. "With lower permeability soils, groundwater may not freely flow into hand auger holes and test pits and so it is not uncommon to have observed water levels being below the actual groundwater level. Soil descriptions suggest that groundwater, and the capillary fringe (wet area above the water table which also impacts drainage potential) is higher than stated. Site observations by [the authority] and [the authority's expert] also support this. Antecedent conditions also greatly influence groundwater level in low permeability soils e.g. if it had been wet prior to the storm event, the groundwater levels would still be near surface and the soils would have minimal drainage potential".
  - 4.3.9. If the building work were to continue (as currently designed) the authority believes the work would not meet the purposes of section 3(a)(i)(ii),(b) and the principles set out in section 4(2)(a)(i),(b),(q)(ii).
- 4.4. In a correspondence to the Ministry dated 19 June 2024, the authority (in summary):
- 4.4.1. Referred to issues with the foul water disposal system on a neighbouring property.
  - 4.4.2. Referred to clause G13.3.4(a) and (f).
  - 4.4.3. The ground water level at a neighbouring property is 1m below ground level, and possibly higher at other times.
  - 4.4.4. The effluent field is designed to be a depth of approximately 450mm below ground level, and the Hawkes Bay Regional Council require that 'The point of discharge shall be no less than 600mm above the highest seasonal groundwater table'. On this basis, the design would appear not to satisfy those requirements.

## **The owner**

- 4.5. The owner submits (in summary):
- 4.5.1. There are no valid grounds for building consent ABA20211360 to be reversed, and it does "comply with the Building Code".

- 4.5.2. The authority has provided no evidence to date “showing that the ‘onsite disposal systems’ ...at a [neighbouring property] ...have failed during normal rainfall events”.
- 4.5.3. The authority has provided “no evidence or specific details...to date supporting the [authority’s] assertions that the ‘onsite disposal system design’ will not comply with clauses B2 Durability – B2.2, B2.3.1, E1 Surface Water – E1.2, E1.3.1, E1.3.3, and G13 Foul Water – G13.2, G13.3.4” at 12 Beach Road.
- 4.5.4. “There is no logical basis for extrapolating the alleged issues with the disposal systems at a [neighbouring property] and then applying those to 12 Beach Road in the absence of any specific evidence”.

### **The surface water designer**

- 4.6. On 15 May 2024, the surface water designer provided the following information (in summary):
  - 4.6.1. The calculation for the surface water “contributing catchment” for sizing the swale system includes the roof area.<sup>31</sup> “The storage available in both the “rock trench” and the swale above it exceed the 10 [percent] AEP storm runoff for the site” and was “sized to meet the requirements placed on the site during the resource consent process”.
  - 4.6.2. The “polymer pit” provides a location for the roof drainage to discharge to, provides an outlet to disperse the roof drainage to ground, and is a maintenance access point for the soakage system.
  - 4.6.3. The swale has been designed to “include times when the water table is higher and disposal to ground takes longer”.
  - 4.6.4. The plans “don’t clearly show the intention of removing the base of the pit to help expediate drainage through the rock trench”.
  - 4.6.5. In the absence of any “stormwater infrastructure that serves the site” the surface water runoff “needs to be disposed of to the ground” and “water stored in swale will...eventually infiltrate to ground either via the polymer pit or via the natural infiltration through the base of the pervious swale”.
  - 4.6.6. In compliance with clause E1.3.1, the proposed polymer pit “is an appropriate discharge location for the roof drainage aspect of this system”.
  - 4.6.7. The rock layer, below the sand layer, “provides additional storage during periods when the groundwater table was lower than during higher periods”.

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<sup>31</sup> The contributing catchment area also includes Lot 2 (ie 1000m<sup>2</sup>, this value includes the roof area) and an additional 260m<sup>2</sup> of road reserve (ie a total area of 1260m<sup>2</sup>).

- 4.6.8. The report from the foul water designer refers to ground water at a depth of greater than 1.2m and “nor was there any change of colour or mottling in their boreholes that indicated that ground water reaches this height”.
- 4.6.9. Ground water at the site is expected to vary seasonally and referred to the “geotechnical assessment” report dated 14 February 2020 (refer to paragraph 3.4.3). This indicated no ground water was encountered in any of the hand augers, “but there was some seepage at around 1m (which aligns with what was seen during the soakage test...)”. It was not “until they reached 1.7m [below ground level] that the geotechnical investigation found standing water” and this “is consistent with the nearest [Hawke’s Bay Regional Council] wells (ref 1119 and 249) which record groundwater fluctuating between 2m and 2.4m [below ground level]”.<sup>32</sup>
- 4.6.10. The design for the swale was “as shallow as possible” and to “provide a difference between the 1.7m [below ground level] standing water and the base of the rock trench close to the seasonal fluctuation of groundwater in the nearby wells”. A clearance of 320mm has been achieved “between the base of the [rock] trench and the standing water level encountered during the geotechnical investigation”.
- 4.6.11. The geotechnical report dated 14 February 2020 has been preferred in the design with respect to ground water level over the soakage test which noted ground water at 1m<sup>(33)</sup>, particularly since the testing referred to in the report “went much deeper than the soakage test” (while noting the soakage test was not undertaken by persons with a geotechnical background).
- 4.6.12. Parts of Haumoana were flooded during cyclone Gabrielle, but this particular site was not flooded despite the authority’s pump that serves the area failing, and the rainfall “exceeded the design storms (NIWA estimate was a 1 in 400 storm for the Heretaunga plains)”.
- 4.7. In a correspondence to the Ministry dated 20 May 2024, the surface water designer stated (in summary):
- 4.7.1. They have provided no new information regarding ground water levels.

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<sup>32</sup> Based on the screenshot provided by the surface water designer, it appears well 1119 is at or near to 31A Beach Road, and well 249 is at or near to 16 Grange Road South. I have received no records to confirm or verify the water level data relied on by the surface water designer or included in the geotechnical assessment report dated 14 February 2020.

<sup>33</sup> The soakage test is referred to in an email from the surface water designer to the Hawke’s Bay Regional Council dated 9 October 2019. A copy of the email is included in the building consent plans and specifications.

- 4.7.2. The surface water design “relies on infiltration” data it obtains “about groundwater levels from Geotechnical Reports”<sup>34</sup>.
- 4.7.3. The design for the surface water disposal system “exceeds the Building code requirements” and “was a specific engineered design, rather than following an acceptable solution”.
- 4.8. In a correspondence to the Ministry dated 21 May 2024, the surface water designer stated (in summary):
- 4.8.1. The swale accepts sheet flow from the surrounding ground and has a sump connected to the drainage pipes from the dwelling. This sump discharges into a layer of drainage metal acting as a soakage pit laid beneath the swale to assist with filtration.
- 4.8.2. The swale has a storage volume of 20.79m<sup>3</sup> and an additional 42m<sup>3</sup> of rock trench beneath the swale.
- 4.8.3. They had tested the infiltration rate of the soil at the site. When digging the soakage test pit water was noted at a depth of 1m. Despite this the soakage test showed that water still drained from the site at a rate of 435mm/hour.
- 4.8.4. A factor of safety of 2 for the soakage rate was used in their calculations, i.e. a soakage rate of 217.5mm/hour. The soakage method in Verification Method E1/VM1 doesn’t use any factors of safety with respect to infiltration rates. This means the rock trench beneath the infiltration swale is twice the size needed to comply with E1/VM1.
- 4.8.5. The Geotech investigation for the site dug a number of test pits and in one of them some seepage was found at 1m, with standing water being reached at a depth of 1.75m. Other test pits didn’t show any ground water.
- 4.8.6. The site has had some fill put on it in the past and it is assumed that the seepage could be the result of where the layer of the fill meets the native ground level.
- 4.8.7. Ground water levels fluctuate during the year and in light of a possibly high-water table at the site a conservative approach was taken for the stormwater solution. This involved creating a stormwater infiltration swale, with sufficient above ground storage such that the volume of the 10 percent AEP design storm could be fully attenuated in the swale, in the event that a high ground water level impacts on the discharge rate.

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<sup>34</sup> The surface water designer did not clarify which “geotechnical reports” they relied on. Therefore, for the purposes of the determination, I have assumed this included the report dated 14 February 2020 (refer to paragraph 3.4.3).



- 4.8.8. In a 2 percent AEP storm with a 1-hour duration (ie the storm duration used in E1/VM1), a total of 28.5m<sup>3</sup> runoff would be expected from the site.
- 4.8.9. The 4m wide x 21m long x 0.5m deep rock filled pit beneath the swale has a base area of 84m<sup>2</sup> and a volume of 42m<sup>3</sup>.
- 4.8.10. Therefore, with an infiltration rate of 217.5mm/hour, the minimum volume of the rock trench needs to be 26.9m<sup>3</sup> to meet the requirements of a 2 percent AEP storm.
- 4.8.11. The above assumes that water can freely drain from the rock trench, if the groundwater table is at 1.75m then this should be sufficient evidence that disposal of stormwater to ground can be used to dispose of water from a 2 percent AEP storm.
- 4.8.12. However, if the water table is at 1m (rather than the 1.75m indicated in the geotechnical report) part of the rock trench beneath the infiltration swale would be inundated with water. The depth of the rock trench above the 1m mark is 0.26m, so the volume of the rock trench provided above the 1m mark is 21.8m<sup>3</sup>, which means in a 2 percent AEP event, if the groundwater level was at 1m below ground level, then a maximum of 5m<sup>3</sup> of water will overflow the soakage pit into the infiltration trench. Because the infiltration trench has a capacity of 20.79m<sup>3</sup> before the water reaches ground level at the site, even if the groundwater level reaches 1m below ground level, stormwater in a 2 percent AEP event will not enter buildings.
- 4.8.13. In a 10 percent AEP storm with a 1-hour duration (as per E1/VM1), a total of 19.3m<sup>3</sup> runoff is expected from the site. This volume of runoff is less than the volume of storage available above ground in the swale confirming that the performance requirements of a 10 percent AEP storm can be met even if it coincides with a period of time of a high-water table. Therefore, the swale itself has sufficient volume above ground to avoid damaging any other property.
- 4.9. In a correspondence to the Ministry dated 23 May 2024, the surface water designer stated (in summary):
- 4.9.1. The design for 12 Beach Road has not yet been built.
- 4.9.2. If groundwater is unexpectedly present when constructing a soakage solution we would expect the designer would be contacted so that the design could be amended.
- 4.10. In a further correspondence to the Ministry dated 7 June 2024, the surface water designer stated (in summary)<sup>35</sup>:

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<sup>35</sup> The correspondence was in response to a request for further information from the Ministry dated 7 June 2024 regarding infiltration rates based on soil conditions.

- 4.10.1. The volume above ground in the swale<sup>36</sup> is sufficient to hold the entire runoff volume of a 1-hour duration 10 percent AEP storm regardless of the rate of infiltration.
- 4.10.2. The infiltration rate just relates to how quickly the water will soak away. Regardless of what the actual infiltration rate of the soil is, the runoff from a 10 percent AEP design storm will be fully contained within the swale while it slowly infiltrates the soil, and even if that infiltration rate is slower than what was measured, it will still not impact other property.
- 4.10.3. The swale can't fully contain a 1 hour-long 2 percent AEP storm unless infiltration is occurring. However, even if the infiltration rate used in the calculations turns out to be lower than what was measured, the proposed solution will still meet the performance standard of the surface water will not enter the proposed building at 12 Beach Road.
- 4.10.4. This is because the plans for 12 Beach Road show a finished floor level of 14.19m and a ground level of 11.90, giving a freeboard of 2.29m.<sup>37</sup> This means, if the swale ends up overflowing in a 2 percent AEP design storm because the actual infiltration rate turned out to be lower than the measured rates used in design process, surface water will not enter the proposed building at 12 Beach Road due to the generous freeboard allowance.

## The foul water designer

- 4.11. The foul water designer did not provide a submission.

## 5. Discussion

- 5.1. The matter to be determined is the authority's decision to grant and issue the building consent for the relocation of a dwelling and associated building works at 12 Beach Road, Haumoana.
- 5.2. In deciding this matter, I must consider if the proposed on-site surface water and foul water disposal systems for 12 Beach Road comply with clauses B2, E1 and G13.

## Legislation

- 5.3. Section 17 states all building work must comply with the Building Code to the extent required by the Act.

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<sup>36</sup> For the purposes of this determination, I have assumed "above ground in the swale" refers to the reduced level at base of the swale approximately 580mm below the surrounding ground level as shown on plan H20190090-LOT 2-D310 Rev 1 dated 27 July 2021.

<sup>37</sup> As detailed on building consent plan 20/1663 03 Revision B dated 7 July 2021.

- 5.4. Section 49(1) states 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.
- 5.5. In this case, the authority has identified several clauses of the Building Code which it believes are at issue:
- 5.5.1. B2.2 - *Building* materials, components and *construction* methods shall be sufficiently durable to ensure that the *building*, without reconstruction or major renovation, satisfies the other functional requirements of this code throughout the life of the *building*.
- 5.5.2. B2.3.1 - *Building elements* must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the *specified intended life* of the *building*, if stated, or...(b) 15 years if:
- (i) those *building elements* (including the *building* envelope, exposed plumbing in the subfloor space, and in-built chimneys and flues) are moderately difficult to access or replace, or
  - (ii) failure of those *building elements* to comply with the *building code* would go undetected during normal use of the *building*, but would be easily detected during normal maintenance.
- 5.5.3. E1.2 - *Buildings* and *sitework* shall be constructed in a way that protects people and *other property* from the adverse effects of *surface water*.
- 5.5.4. 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*.
- 5.5.5. 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,...(refer to paragraph 1.11).
- 5.5.6. G13.2 - *Buildings* in which *sanitary fixtures* and *sanitary appliances* using water-borne waste disposal are installed must be provided with -
- (a) an *adequate* plumbing and drainage system to carry *foul water* to appropriate outfalls; and
  - (b) if no *sewer* is available, an *adequate* system for the storage, treatment, and disposal of *foul water*.

- 5.5.7. G13.3.4 - If no *sewer* is available, facilities for the storage, treatment, and disposal of *foul water* must be constructed –
- (a) with *adequate* capacity for the volume of *foul water* and the frequency of disposal; and
  - ...
  - (d) to avoid the likelihood of contamination of soils, ground water, and waterways except as permitted under the Resource Management Act 1991; and
  - ...
  - (f) to avoid the likelihood of blockage and leakage...(refer to paragraph 1.12).

### The building consent

- 5.6. Building consent ABA20211360 for 12 Beach Road was granted by the authority on 28 April 2022 under section 49 and included a waiver to clause G13.3.4 under section 67.<sup>38</sup>
- 5.7. I am of the view the authority would not have granted the building consent unless it considered the requirements of section 49 had been met at the time the decision was made (refer to paragraph 4.3.1).
- 5.8. Regardless, I have considered the plans and specifications that accompanied the application for building consent and whether they demonstrated compliance with the clauses of B2, E1 and G13 noted in the tables below.

### The proposed surface water disposal system

- 5.9. I am of the view the proposed surface water disposal system will comply with clause E1, if it was constructed in accordance with the building consent plans and specifications, for the following reasons (refer to table 1):

**Table 1: Compliance with clause E1 Surface Water**

Clause	Means of compliance
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<sup>38</sup> Section 67 Territorial authority may grant building consent subject to waivers or modifications of building code (1) A building consent authority that is a territorial authority may grant an application for a building consent subject to a waiver or modification of the Building Code. (2) A waiver or modification of the Building Code under subsection (1) may be subject to any conditions that the territorial authority consider appropriate.

E1.3.1	<p>Based on the plans and specifications provided with the building consent application (refer to paragraphs 2.4 to 2.9 inclusive), as well as the additional information provided by the surface water designer (refer to paragraphs 4.6 to 4.10) I am of the view the surface water resulting from an event having a 10 percent probability of occurring annually and which is collected or concentrated by the dwelling or sitework, is likely to be disposed of in a way that avoids the likelihood of damage or nuisance to other property.</p> <p>In this case the dwelling and siteworks (excluding the land application system for the foul water system and the surface water swale itself) is approximately 221m<sup>2</sup> (as detailed on the site plan 20/1662 01 Revision A dated 7 July 2021).</p> <p>Based on the calculations provided by the surface water designer (eg as detailed in paragraph 4.8) it appears the volume or capacity of the swale, in combination with the rock filled soakage trench, has been designed to accommodate the surface water in an event having a 10 percent probability of occurring annually (notwithstanding the catchment area of the Lot as a whole, and an additional area of road reserve has also been considered).</p> <p>The swale is to be wholly located on the property at 12 Beach Road. However, I note it is proposed to be constructed in an area mapped by the authority as being subject to possible inundation (flooding).<sup>39</sup></p> <p>There is a lack of evidence to support the authority’s view that the ground water level (which is likely to be affected by seasonal variations) at 12 Beach Road is higher than what was tested at the property by the surface water designer and as noted in the “geotechnical assessment” report for the “10 Beach Road Subdivision”<sup>40</sup>. Regardless, even if that was the case, and ground water was encountered at approximately 920mm below ground level for a period of time (as stated by the authority at 10 Beach Road; refer to paragraph 4.3.2) this is still lower than the invert of the swale (at 580mm below ground level), and it is only likely to affect the lower part of the 500mm deep rock filled soakage trench (until such time as the water is dispersed).<sup>41</sup></p> <p>Therefore, based on the calculations provided by the surface water designer, it is unlikely the capacity of the swale will be exceeded in a 10 percent AEP event, to any extent that will overflow and cause a nuisance or damage to other property.</p> <p><b>Compliance is demonstrated</b></p>
E1.3.3(a)	<p>The authority has not raised concerns regarding the proposed collection of surface water from the roof of the dwelling, its associated downpipes, or below ground drainage to the point it enters the swale (refer to paragraph 1.10.2).</p>

<sup>39</sup> I note a notification under section 72 identifies inundation as a natural hazard on the Record of Title 963819 for Lot 2 DP 554406.

<sup>40</sup> Dated 14 February 2020.

<sup>41</sup> Refer to building consent plan H20190090-LOT 2-D310 Revision 1 dated 27 July 2021.

	<p>Site plan 01 revision A dated 7 July 2021 does give an indication of the proposed setting out and specification for the drainage system to convey water from the dwelling to the outfall by gravity flow, and I have been provided with no contrary evidence that suggests compliance would not be demonstrated based on this design.</p> <p>Rather, the issue for the authority appears to be if the swale is an “appropriate outfall”.</p> <p>I am of the view the swale is an outfall, as defined in Clause A2 Interpretation, being “that part of the disposal system receiving surface water...from the drainage system” including a “soakage system”.</p> <p>However, I need to consider if it is an “appropriate outfall” taking into account the site-specific design of the soakage system based on the volume of surface water likely to be collected by the catchment area (notwithstanding it appears the swale also has “sufficient capacity to contain a 50 year storm event” due to the potential flooding of the property, and the proposed location for the swale appears to be in an area likely to be affected by flooding {as indicated on the authority’s maps for Haumoana}).</p> <p>In this case, the below ground surface water drainage system terminates at the “polymer pit” shown on building consent plans and is then dispersed to ground through layers of sand and rock (ie the soakage trench to be constructed below the invert level of the swale).</p> <p>I accept the ground water level will be subject to seasonal variation. However, based on the available data in this case it appears the invert level of the swale is likely to be above the variable ground water levels (for example, refer to paragraph 3.4.3). Regardless, even if water levels were to rise for a period of time (as inferred by the authority, refer to paragraph 4.3.2), it is likely to affect the time taken for soakage to occur, rather than necessarily cause the full volume or capacity of the swale to be exceeded and overflow.</p> <p>Based on the information made available to me, I am of the view the drainage system for the disposal of surface water will convey that water to an appropriate outfall using gravity flow.</p> <p><b>Compliance is demonstrated</b></p>
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### The proposed foul water disposal system

5.10. I am of the view the proposed foul water disposal system will comply with clause G13, if it was constructed in accordance with the building consent plans and specifications, for the following reasons (including table 2):

### Table 2: Compliance with clause G13 Foul Water

Clause	Means of compliance
G13.2(a)	<p>The proposed plumbing and drainage system is detailed on site plan 01 revision A dated 7 July 2021 and the building consent application and specifications refer to compliance with Acceptable Solution G13/AS1 and G13/AS2. The authority has not raised any issues with the adequacy or compliance of the proposed plumbing and drainage (up to the point it connects to the AWTS (refer to paragraph 1.10.1).</p> <p>The proposed proprietary AWTS is an appropriate outfall (as the term 'outfall' is defined in Acceptable Solution G13/AS1).</p> <p>The proprietary AWTS has been subject of the 'On-site effluent treatment national testing programme' and an associated performance certificate dated 31 August 2010 refers to meeting the secondary effluent quality requirements stated in the former AS/NZS 1547:2000.</p> <p>The provision of product system specifications, installation instructions, and 'home owners guide' by the manufacturer of the proprietary AWTS; the system specifications refers to compliance with AS/NZS 1546.1:2008, AS/NZS 1547:2012, and Verification Method G13/VM4.</p> <p>I consider this system will adequately carry the foul water to an appropriate outfall.</p> <p><b>Compliance is demonstrated</b></p>
G13.2(b)	<p>The authority stated, "The building will not be provided with an adequate system for the storage, treatment, and disposal of foul water".</p> <p>The adequacy of the storage and treatment of the foul water using the proprietary AWTS is noted above. The calculated total daily wastewater production is 1600 litres per day; this is less than the capacity of the AWTS which can accommodate 2200 litres per day.</p> <p>The disposal of the treated foul water on the outlet side of the AWTS is via a land application system incorporating absorption beds. The design for the system has been supported by a 'Statement of design – PS1' dated 14 July 2021 (refer to paragraph 2.13) and 'onsite wastewater design report' dated 14 July 2021 (refer to paragraph 2.14). The report included (but was not limited to) the depth of recorded seasonal groundwater being greater than 1.2m (see also paragraphs 3.4.1 and 3.4.3), the moderate drainage nature of the soils, the proposed size, materials and setting out of the land application system, and an 'assessment of environmental effects'.</p> <p>Further, the overall design depth of the proposed land application system absorption beds appears to be between 400mm to 450mm below existing ground level. Therefore, the design does not support the assumption the land application system is likely to be affected by variable groundwater levels given the difference in levels is possibly greater than 750mm (ie 1200mm – 450mm); this is greater than the requirements of AS/NZS 1547:2012, Appendix R, table R1 that refers to</p>

	<p>‘vertical setback distance’ to groundwater of 600mm or more depending on soil conditions and the highest seasonal water table level. Therefore, based on the available data regarding the variable seasonal ground water level, it appears this avoids the likelihood of contamination of soils and ground water.</p> <p>I have also taken into consideration paragraph 4.3.2, and the possibility ground water may be encountered at approximately 920mm below ground level for a period of time. However, this is still lower than the invert of the proposed absorption beds.</p> <p>Based on this I consider this is an adequate system for the storage, treatment and disposal of the foul water.</p> <p><b>Compliance is demonstrated</b></p>
G13.3.4	<p>The authority stated, “If the system were constructed, there is unlikely to be adequate capacity for the volume of foul water and frequency of disposal (as the effluent field may be inundated), and there is a likelihood of contamination of soils, and ground water”.</p> <p>As noted above, the plans and specifications do demonstrate there would be adequate capacity in the AWTs and land application system for the volume of foul water anticipated and frequency of disposal.</p> <p>There is a lack of evidence to support the notion the land application system may be inundated at 12 Beach Road. The proposed location for the AWTs and land application system to the rear (west side) of the property is not in the flood risk area identified in the authority’s maps<sup>42</sup>. This is also supported by the building consent checklist completed by the authority that states, the “Effluent disposal system is outside of [the] flood zone, therefore the natural hazard won’t affect [the] Effluent system”.</p> <p>Further, the property is not in a current coastal inundation area identified in the authority’s maps, however, it is shown as being affected in 2120 in a 1 percent annual exceedance probability (AEP) event. However, this is beyond the limitation imposed by clause B2.3.1(b) (after the issue of the code compliance certificate).</p> <p>I have assumed the authority’s reference to “a likelihood of contamination of soils, and ground water” refers to sub-clause G13.3.4 (d), notwithstanding the additional requirement of G13.3.4 (f).</p> <p>I have received insufficient evidence to support the notion there would be a likelihood of contamination of soils and ground water at 12 Beach Road, or any likelihood of blockage or leakage. For example, the authority has not provided results of any additional tests conducted specifically at 12 Beach Road that either supports or contradicts the data in the “geotechnical assessment” report (refer to paragraph 3.4.3).</p>

<sup>42</sup> I note, the Hawke’s Bay Regional Council, refers to this half of the property being a “Low risk” flooding area.



	<p>Refer to the notes provided above regarding clause G13.2(b) and the depth to ground water and the depth of the proposed absorption beds.</p> <p><b>Compliance is demonstrated</b></p>
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### The waiver

5.11. As noted previously (refer to paragraph 3.5), the building consent was granted subject to a waiver of clause G13.3.4.

5.12. The building consent (Form 5)<sup>43</sup> stated:

In accordance with section 67 of the Building Act 2004 [the authority] has issued a waiver to the building code [G13] which has the following condition(s) – G13.3.4 for the duration of the event.

5.13. However, the condition did not limit its application to any one or combination of sub-clauses (a) to (k) inclusive of G13.3.4, therefore, I have assumed the waiver applied to the whole clause.

5.14. Further, the Form 5 did not specify either the ‘duration’ or ‘event’ to which the condition applied. Although not clear, it could be inferred from additional notes accompanying the Form 5 that the ‘event’ was related to a “known natural hazard in relation to this land” being “inundation (flooding)”.<sup>44</sup> I consider this is not clear or adequate.

5.15. Regardless, “the duration of the event” implies a modification to the Building Code rather than a waiver (albeit it is not clear if the authority did turn its mind to this as an option).

5.16. In this case, the authority’s ‘Building Consent – Residential Processing Checklist’ dated April 2022 states, the waiver was considered “...for a duration of time in the event of the flood hazard affecting the on-site waste water system”.<sup>45</sup>

5.17. However, the same checklist also states, “Effluent disposal system is outside of [the] flood zone, therefore the natural hazard won’t affect [the] effluent system”. I agree. The authority’s maps indicate the extent of the flood hazard is to the east side of the property, whereas the in-ground AWTS and land application system is proposed to be sited to the west side of the property (refer to paragraph 2.3.2 and figure 1).

<sup>43</sup> Schedule 2 of the Building (Forms) Regulations 2004.

<sup>44</sup> Section 71(3)(d). However, I note the building consent was not granted in accordance with section 72 and this was required to be considered (notwithstanding a section 72 notification was already recorded on the Record of Title on 4 June 2020 for “inundation as a natural hazard”, and the authority’s building consent processing checklist did refer it).

<sup>45</sup> An associated notification of a waiver issued by the authority to the Ministry, in accordance with section 68, stated the reason for the notification was “Clause G13.3.4: Waiver for inundation for the approved and granted to the new septic tank system [and] effluent field for the duration of the event”.

- 5.18. Therefore, not only are the details provided on the Form 5 unclear, but the statements made by the authority regarding the risk of flooding do not justify a waiver to clause G13.3.4.
- 5.19. The parties have not disputed the property is subject to some possible inundation (flooding). However, depending on the site-specific circumstances, it does not automatically follow compliance with G13.3.4 could not demonstrated, particularly if the area of the property where the AWTS and land application system is to be located is not likely to be subjected to flooding.
- 5.20. Further, I am of the view the lack of justification for waiving G13.3.4 extends to several of its sub-clauses. For example (but not limited to), the use of materials that are impervious (b), that avoids the likelihood of unauthorised access by people (h), and permits easy cleaning and maintenance (i). The building consent plans and specifications do demonstrate compliance with these sub-clauses and others, for example, based on the manufacturer's product specifications for the AWTS and the design for the land application system.
- 5.21. The authority has not provided adequate reasons to establish the grounds on which to grant the building consent subject to a waiver of clause G13.3.4. This waiver is deficient in the way it describes the conditions it imposes or the circumstances where it applies.

## **B2 Durability**

- 5.22. Regarding compliance with clause B2 I need to consider whether the building materials, components and construction methods are sufficiently durable<sup>46</sup> such that the building, without reconstruction or major renovation, will continue to satisfy the functional requirements of the Building Code throughout its life, and building elements<sup>47</sup> (with only normal maintenance) will continue to satisfy the performance requirements of the code.
- 5.23. In this case, I have considered the following items regarding the surface water and foul water drainage systems, including the in-ground AWTS and land application system:
- 5.23.1. The application for the building consent relies on compliance with Acceptable Solution B2/AS1.
- 5.23.2. The below ground surface water and foul water drainage systems rely on using 100mm diameter uPVC pipes. This complies with Acceptable Solution E1/AS1, Table 1 'Acceptable Pipe Materials', and Acceptable Solution G13/AS2, Table 1 'Materials for drainage pipes'. This includes the uPVC

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<sup>46</sup> Acceptable Solution B1/AS1 (second edition, amendment 12, effective on 28 November 2019) defines durable as: resistant to wear and tear.

<sup>47</sup> Clause A2 Interpretation defines building elements as: any structural or non-structural component and assembly incorporated into or associated with a building. Included are fixtures, services, drains etc.

pipes proposed for the land application system (refer to AS/NZS 1547:2012, Appendix L, L8)<sup>48</sup>.

5.23.3. The product specification from the manufacturer for the AWTS refers to compliance with Australian / New Zealand Standard AS/NZS 1546:1.2008 *On-site domestic wastewater treatment units Part 1: Septic tanks* and Verification Method G13/VM4, and clause G13.3.4, as well as AS/NZS 1547:2012 and has “an expected lifespan of 50 years”.

5.24. Taken together, I am of the view compliance with clause B2 has been demonstrated.

## 6. Conclusion

- 6.1. The authority has not provided clear or substantive evidence to support a presumptive position that just because some issues may have arisen at the neighbouring property, it means the same would eventuate at 12 Beach Road.
- 6.2. The authority has not provided any new site-specific test data for 12 Beach Road that would otherwise bring into doubt the information contained in the original building consent plans and specifications that the authority relied on when it granted the consent. As such, this does not support a decision to reverse the granting of the building consent ABA20211360 in this case.
- 6.3. Regardless, just because a lack of evidence at this time does not support reversing the granting of the building consent, it does not limit the authority’s enforcement powers under the Act. For example, if issues do become evident during the construction of the surface water disposal system and/or the foul water disposal systems at 12 Beach Road that would mean either (or both) of them may not function as intended.
- 6.4. Based on the information made available by the parties, including the plans and specifications accompanying the application for building consent ABA20211360, compliance with clauses B2, E1 and G13 has been demonstrated.
- 6.5. The authority has not provided adequate reasons to establish the grounds on which to grant the building consent subject to a waiver of clause G13.3.4. This waiver is deficient in the way it describes the conditions it imposes or the circumstances where it applies. I will modify the issued building consent to remove the waiver due to these deficiencies.

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<sup>48</sup> This includes, but is not limited to, reference to Australian / New Zealand Standard AS/NZS 1477:2017 *PVC pipes and fittings for pressure applications*.

## **7. Decision**

- 7.1. In accordance with section 188 of the Building Act 2004, I determine the authority's decision to grant building consent ABA20211360 is modified to remove the waiver for clause G13.3.4.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 24 September 2024.

**Andrew Eames**

**Principal Advisor Determinations**