

# Determination 2022/014

**Regarding the authority's decision not to issue a notice to fix for earthworks and a retaining wall**

**101B and 101C Grafton Road, Thames**

## Summary

This determination considers whether the authority was correct to refuse to issue a notice to fix for site works that occurred over a period of years. The determination also considers the compliance of the work and the status of the developer as a specified person.



The legislation discussed in this determination is contained in Appendix A. 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 (e.g., 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, Katie Gordon, National Manager Building Resolution, 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. the owners of 338 Parawai Road, M Walls and B Buchan, who applied for the determination (“the applicants”).
  - 1.2.2. the current owner of 101B Grafton Road, G Hunt, one of the two properties where the sitework was carried out (“the owner of 101B”).
  - 1.2.3. the current owner of 101C Grafton Road, J Ayden & A Rogers, one of the two properties where the sitework was carried out (“the owners of 101C”).
  - 1.2.4. Thames-Coromandel District Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.
- 1.3. I consider the developer, HuntN Tradings Ltd (“the developer”), who owned both 101B and 101C Grafton Road when the majority of building work was carried out, as a person with an interest in this determination.
- 1.4. The determination arises from building work that was carried out along the boundary between the applicants’ property and the two properties at 101B Grafton Road (“101B”) and 101C Grafton Road (“101C”). The building work considered in this determination consists of the construction of a retaining wall and earthworks preparatory to or associated with the construction of the building (“the building work”) (refer paragraphs 6.19 to 6.21 for more detail). The determination does not consider the earthworks that were carried out before 2015 (“the siteworks”).
- 1.5. The applicants are of the view that the building work does not comply with the Building Code and is causing their property to subside and their driveway to crack.

---

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

These concerns were raised with the authority, and the authority did not issue a notice to fix.

- 1.6. The matter to be determined<sup>2</sup> is therefore whether the authority was correct in its decision to refuse to issue a notice to fix for the building work. In determining this matter, I must also consider whether the building work complies with Clause B1.3.6 of the Building Code.

## 2. The building work

### The sites

- 2.1. The applicants' property is located at the crown of the hill, with 101B and 101C located part way down the hill on its southern flank.
- 2.2. 101B and 101C share a common boundary with the applicants' property at 338 Parawai Road. This boundary is the southern boundary of the applicants' property and the northern boundary of both 101B and 101C.
- 2.3. The applicants' property is a large (2,062m<sup>2</sup>) property, with a sloping contour. The property is accessed by a long driveway, which is steep in places, and at its upper extent runs parallel with the southern property boundary. Public records state that the dwelling was constructed in 1961.
- 2.4. Prior to excavation work carried out on 101B and 101C as part of the subdivision, the southern boundary line of the applicants' property consisted of a diffuse break of slope, beyond which lay gentle to moderately steep slopes, protruding approximately 7m downslope into 101B and 101C<sup>3</sup>.
- 2.5. The driveway alongside the southern boundary is underlain by poorly compacted non-engineered fill to a maximum depth of 1.7m. This fill previously extended onto 101B and 101C and graded down to natural grades at a moderately steep slope angle.
- 2.6. 101B and 101C Grafton Road have been excavated so they are largely flat, other than a steep slope along the northern boundary. A previous owner constructed the dwelling on 101B in 2016, and the dwelling on 101C was constructed in 2020.

---

<sup>2</sup> Under sections 177(1)(b) and (2)(f) of the Act.

<sup>3</sup> Refer Appendix A3: Summary of the applicants' engineer's report.



- 2.10. The embankment varies in height from 2.7m to 4.8m. It is lower and less steep in the area contained within 101C, and grows higher and steeper with the contour of the hill to reach its maximum height within 101B. The slope of the embankment behind the retaining wall varies from 30°–35° to the horizontal on 101C, to 45°–47° to the horizontal on 101B.
- 2.11. The embankment within 101C is covered with a green geotextile planting mat and seeded with grass.
- 2.12. Earth anchors<sup>5</sup> have been installed within the 101B section of the embankment, at depths of up to 1.8m, perpendicular to the slope face. A geotextile cloth was also installed across the extent of the bank and has been seeded with grass.

### The retaining wall

- 2.13. The embankment is now retained by a 1.2m high timber pole retaining wall, which runs along its foot across both 101B and 101C (approximately 48m).
- 2.14. The wall is constructed from 200mm diameter timber poles, treated to comply with NZS 3605<sup>6</sup> and installed at 900mm centres to a depth of 1.2m. The poles are spanned by H4 treated 50mm x 50mm timber boards. The section of the retaining wall on 101C has a concrete apron poured against the toe of the wall, which has reduced the face height of the wall to 1.05m.
- 2.15. The area behind the wall has been backfilled with drainage metal in a geotextile-lined trench. The consented plans for the wall show a 110mm perforated pipe at the bottom of the trench, running to the stormwater system, and a shallow channel constructed within the drainage metal along the top of the wall, also running to the stormwater channel. I have received no information from the parties as to whether this drainage was incorporated into the wall when it was built.
- 2.16. The specific building work that is included within this determination is summarised in **Table 1**. There is more information about this work in paragraphs 3.6 to 3.16 of this determination.

**Table 1: Building work considered by this determination**

Date	Building work	Property (carried out by)
November 2015	Earthworks to remove vegetation from the embankment, including removal of some soil from the surface.	<ul style="list-style-type: none"> <li>101B and 101C (Developer).</li> </ul>
April 2016	Earthworks to remediate a failure of the embankment. Works covered a 1 to 2m	<ul style="list-style-type: none"> <li>Mainly within 101B (Developer).</li> </ul>

<sup>5</sup> Earth anchors are large screw-like devices inserted into the ground to provide support to the slope.

<sup>6</sup> New Zealand Standard NZS 3605 Timber piles and poles for use in building.

	wide area and involved backfilling the area with hardfill.	
July 2016	Construction of a 1.2m high retaining wall along the base of the embankment.	<ul style="list-style-type: none"> <li>• 101B and 101C (Developer).</li> </ul>
June 2017	Earth anchors installed in embankment.	<ul style="list-style-type: none"> <li>• 101B (Developer).</li> </ul>

### 3. Background

#### Subdivision and related earthworks

- 3.1. The following information on the subdivision and related earthworks is provided for context only.
- 3.2. On 20 March 2007, the authority granted a subdivision consent to create five new sections at 101 Grafton Road. The subdivision went ahead, with certificates of title for the new sections issued on 12 December 2008.
- 3.3. It is evident that, soon after the subdivision consent was granted in 2007, earthworks were carried out on 101B and 101C Grafton Road. The authority's file notes that in December 2007, the previous owners of the applicants' property contacted the authority to raise concerns about these earthworks, which they claimed were causing their driveway to subside. The previous owners made several more complaints to the authority about the impact that earthworks were having on their property. In 2013 alone, the authority's file shows that it visited the subdivision site at 101B and 101C Grafton Road three times. At each visit, the authority noted that the embankment below the applicants' driveway was unretained and degrading. The authority also noted that the unretained bank was potentially being affected by stormwater discharge from the applicants' driveway. However, the issue remained unresolved, as the authority noted that there was no condition on the subdivision consent to require the developer to install retaining walls.
- 3.4. This work is not the subject of this determination. Instead, this determination concerns the building work carried out from 2015 onwards, as mentioned in paragraph 2.16 and discussed at paragraphs **Error! Reference source not found.** to 6.20.
- 3.5. The applicants purchased their property in May 2015. The applicants advise that at the time the concrete guttering along the southern edge of their driveway had already largely collapsed due to soil slumping along the boundary line, and there was a fine crack in the first concrete plate at south-east end of the driveway.



**Figure 2: Photograph of embankment in May 2015**

### **Earthworks from 2015 and the retaining wall**

- 3.6. In November 2015, the developer carried out further earthworks on the properties, which involved cutting away and removing vegetation from the bank below the applicants' boundary, as well as shaping the embankment ("the 2015 earthworks"). The applicants were concerned about this and considered the works had excavated part of their own property, along the boundary at the top of the bank. They expressed their concerns to the authority.
- 3.7. In April 2016, additional earthworks were carried out to remediate a failure of the embankment mainly within 101B. An area of approximately 1–2m wide was backfilled with hardfill.
- 3.8. It is these earthworks, and the subsequent building work associated with the embankment and retaining the embankment, that are the subject of this determination. The key events from the date of these earthworks have been summarised in **Error! Reference source not found.**

- 3.9. Two building consents were sought to construct the new dwellings and retaining walls. A crib retaining wall was proposed to retain the earthworks on 101B. The approved drawings also noted to the applicants' driveway:

NEW CONCRETE BUND. ALL STORM WATER FROM DRIVEWAY TO BE COLLECTED AND PIPED TO [STORM WATER] SYSTEM.



**Figure 3: Photograph of November 2015 earthworks**





### **Figure 4: Photograph of November 2015 earthworks**

- 3.10. After the building consent was lodged for the crib wall, the developer submitted a new design for retaining wall. The proposed design showed a 1.2m high timber retaining wall in place of the crib wall. The structural and architectural drawings still showed a “new concrete bund” to collect stormwater and pipe it to the stormwater system on the applicants’ property.
- 3.11. The retaining wall was approved for construction in June 2016 pursuant to two building consents (ABA/2016/356 for 101B; and ABA/2016/342 for 101C). The approved architectural drawings dated 16 June 2016 show a 1.2m high timber retaining wall. However, this conflicted with the approved structural drawings within the same building consent documents dated 16 June 2016, which show the crib wall design. This error appears to have been rectified shortly after the building consent was issued. A second set of structural drawings showing the 1.2m timber retaining wall were stamped “APPROVED” and dated 23 June 2016.
- 3.12. Construction started on the timber retaining walls. The authority subsequently discovered the surcharge and contours on the approved plans, which showed a 20° slope above the retaining wall, did not reflect the November 2015 earthworks that had resulted in a 45° slope.
- 3.13. A producer statement for construction review (PS4) was issued for the section of retaining wall located in 101C on 23 February 2017, and the authority issued a code compliance certificate for this section of the wall on 24 February 2017.
- 3.14. On 25 May 2017, the developer applied for an amendment to building consent ABA/2016/356 to “alter the retaining wall” for the section of wall within 101B. The consent application stated that compliance with Clause B1 was by way of specific engineered design (SED), and a PS1 was supplied on 6 June 2017 for the revised design. The authority granted the amendment on 27 June 2017.
- 3.15. It appears during the interval between when the amendment was sought and granted, the developer installed earth anchors within the 101B section of the embankment, at depths of up to 1.8m, perpendicular to the slope face. A geotextile cloth was also installed across the extent of the bank, to the top of the retaining wall, and subsequently seeded with grass.
- 3.16. No code compliance certificate has yet been granted for the section of the wall within 101B.

**Table 2: Summary of events**

Date	Action
2015	
23 July 2015	Authority's records show the developer purchased 101C.
November	<p>Properties 101B and 101C:</p> <p>Developer carries out earthworks to clear and excavate the embankment.</p> <p>A photograph provided by the applicants shows a hairline crack across the driveway had developed prior to this work.</p> <p>Correspondence between the parties notes that the developer will erect a retaining wall, but due to concerns about the impact of recent heavy rainfall on the embankment, requires the applicants to address drainage from the driveway before the wall is constructed. Applicants advise that before the embankment excavation there were no erosion problems from surface water runoff.</p> <p>A photograph shows a channel eroded in the embankment caused by heavy rain.</p>
6 November	Applicants complain to the authority about the earthworks, claiming a large volume of earth has been excavated.
7 November	Authority visits the site and notes the developer has scrapped off vegetation, but has not exceeded excavation quantities, and that work has been done in a professional manner. Considers that in the short-term the earthworks will not pose any increased risk to the applicants' or the developer's properties. Notes uncontrolled stormwater coming off the applicants' property onto the embankment and that the developer is going to erect an engineer-designed retaining wall.
11 November	<p>Authority visits the site and notes that the subdivision consent does not appear to have considered the existing surcharge from the applicants' driveway. There were no conditions in the subdivision consent requiring stabilisation of the embankment below the driveway.</p> <p>Estimates quantity of soil removed in November 2015 earthworks as around 15m<sup>3</sup> across both sites and notes that</p>

	<p>this “falls well within the permitted earthworks standards” under the District Plan.</p> <p>Officer records they would have expected an engineered retaining wall to be required. Notes also that uncontrolled stormwater flowing from the applicants’ property onto the embankment has potential significant adverse effects for both properties.</p>
18 November	<p>Authority’s internal emails note: “appears surcharge imposed by existing concrete driveway and then subsequent vehicle loads were not taken into account when subdivision was granted and due to the subdivision earthworks the long-term structural integrity of the driveway has been undermined.”</p>
15 December	<p>Applicants place sandbags down length of driveway above 101B, up to the remaining gutter.</p>
<b>2016</b>	
February	<p>Applicants install concrete kerbs along the outside edge of the driveway. Both this, and earlier sandbags are intended as temporary measures, while they wait for the concreter to install a nib wall.</p>
3 February	<p>Developer advises retaining wall design is being finalised, but notes a slip on the embankment, mainly within 101B, had come down due to recent heavy rain, with the damage already done before the sandbags were in place.</p>
5 February	<p>Authority’s records show the developer purchased 101B.</p>
April	<p>Developer carries out earthworks to remediate the slip on the embankment. Works cover a 1 – 2m wide area and involve backfilling the area with hardfill.</p>
8 April	<p>Properties 101B and 101C:</p> <p>Developer engages a geotechnical engineer (“the developer’s geotechnical expert”) to complete a geotechnical assessment of the soils on both sites. Testing is conducted on the building platforms, but not on the embankment.</p> <p>Reports do however note the existence of a slip on the embankment. Reports are stated to be subject to the construction of a crib wall to retain the embankment.</p>

	<p>Site plans attached to the report for 101C refer to a 1.5m high crib retaining wall to be installed along the embankment.</p> <p>(See Appendix A for more details of this report).</p>
16 April	<p>Properties 101B and 101C:</p> <p>The developer's engineer produces an engineering design for a proposed crib retaining wall for both 101B and 101C. The design allows for a surcharge of 5kPa from the applicants' driveway and notes the wall will be up to 4.8m high within 101B and 1.6m high within 101C.</p> <p>The authority stamps the design as approved on 16 June 2016.</p>
10 May	<p>Applicants contact authority regarding previously raised concerns about the 2015 excavation of the embankment. Authority advises "preparatory works were acceptable as part of a building project".</p>
11 May	<p>The developer's builder, acting as its agent, applies for a building consent for 101C Grafton Road, to construct a dwelling and crib retaining wall.<sup>7</sup> A Producer Statement Design (PS1) for a crib retaining wall forms part of the consented documents.</p>
12 May	<p>Authority investigates situation regarding damage to the applicants' driveway. Notes earthworks have altered the terrain and existing situation, and stormwater runoff will affect the building of the retaining wall. Concludes should the driveway fail it would be a "civil issue" and the authority in future would be obligated to assess the situation under section 124 of the Act.<sup>8</sup></p>
19 May	<p>The developer's builder, acting as its agent, applies for a building consent for 101B Grafton Road, to construct a dwelling and crib retaining wall.<sup>9</sup></p>
8 and 9 June	<p>Properties 101B and 101C:</p>

<sup>7</sup> Certificate of title submitted with the consent documentation confirms the developer is the owner of the property.

<sup>8</sup> Section 124 provides territorial authorities with powers concerning dangerous, affected or insanitary buildings.

<sup>9</sup> Certificate of title submitted with the consent documentation confirms the developer is the owner of the property.

	<p>Developer submits a revised retaining wall design for both building consent applications. The design by the developer's engineer is for a 1.2m high timber retaining wall to be constructed along the foot of the embankment. The design assumes the retaining wall will have a backfill angle of 30°. No additional surcharge is indicated at the top of the slope.</p>
17 June	<p>Properties 101B and 101C:</p> <p>Authority issues building consents for 101B (ABA/2016/356) and 101C (ABA/2016/342). Conditions on the consents state that a chartered professional engineer is to provide a PS4 for the retaining wall foundations and construction, confirming that all work has been carried out in accordance with the consent. The documents supporting the application are contradictory in their information about the retaining wall, with one describing a full height crib wall and another describing a timber retaining wall.</p>
23 June	<p>Properties 101B and 101C:</p> <p>Authority approves revised retaining wall design for both building consents. The revised design is for a timber pole retaining wall, with the consented plans also showing a 20° slope on the embankment between the top of the wall and the boundary, instead of the assumed 30° slope.</p>
July	<p>Applicants install a concrete nib wall along the edge of the driveway.</p> <p>A photograph provided by the applicants shows the crack across the driveway has started to widen.</p> <p>Developer starts constructing the 1.2m high timber retaining wall on 101B and 101C.</p>
6 July	<p>Developer's engineer conducts site visit and reports that "retaining wall bored hole down to specifications depth. 450 – 500 holes. Ok to go ahead". Authority provided with copy of report on 7 July 2016.</p>
6 July	<p>Authority inspects the retaining wall later in the day and fails the inspection, noting "surcharge and contours [on the plan] does not appear to reflect the earthworks [on site]". Notes the engineer will need to review the wall's design using a 45° backslope, and that a continuous drainage coil is to be installed behind the wall.</p>

20 July	Applicants request the authority to stop the building work on the retaining wall on 101B, as it is being constructed on or over their boundary. State their driveway is developing “huge cracks”.
21 July	Authority visits the site and requests outstanding PS1 and PS4 from the developer’s engineer for the retaining wall. Authority notes retaining wall is almost complete and “there is no point in stopping the building work”, but it will review situation once the engineer has signed off the wall.
July/August	Developer provides a proposed slope protection and erosion control design to mitigate the effect of the steeper-than-consented slope on the embankment. Proposal uses earth anchors to stabilise the slope and a polypropylene geotextile mat to prevent erosion.  The applicants refuse to agree to the design, as its support anchors would encroach into their property.
August	Applicants continue to express concerns to authority that the retaining wall has not been constructed adequately and recommend the authority inspects it.
19 August	Developer’s engineer advises authority that the original ‘cribwall’ for 101B is no longer feasible due to space requirements and the economic cost.
25 September	Photographs sent by the applicants to the authority show how the embankment has eroded from underneath the driveway
16 November	Developer’s builder applies for code compliance certificate for construction of the dwelling and the section of timber retaining wall on 101C. <sup>10</sup>
Sometime between June and November	Property 101C: Embankment covered with geotextile matting and seeded.
<b>2017</b>	
26 January	The authority engages a multidisciplinary engineering firm (“the authority’s engineers”) to assess the constructed

<sup>10</sup> The application names the developer as the owner of 101C.

	retaining wall and ground conditions, who advise what measures would be required to make it compliant.
8 February	<p>Authority's engineers provide a report following their assessment of the retaining wall and ground conditions on 101B that concludes remedial work is required to the slope of the embankment above the retaining wall.</p> <p>The report also concludes the developer's engineer's design underestimates the back-slope of the embankment at the base of the slope and does not capture "the true nature of the soil material and strength properties". Considers there is "considerable risk" of the surface soils at the top of the slope slumping and withdrawing support from the applicants' land. Considers the wall's design is suitable to retain toe of slope but recommends remediation using an in-ground barrier pile wall along the boundary near the top of the slope, to "provide long-term stability to upper slope zone".</p> <p>(See Appendix A for more details of this report).</p>
23 February	<p>Authority's engineer provides a report following its assessment of the retaining wall and ground conditions on 101C that concludes no further works are required to the section of wall on 101C.</p> <p>The report also notes:</p> <ul style="list-style-type: none"> <li>• the developer has placed planting mat and grass seed across the slope above the wall</li> <li>• there is a very low risk of surface stormwater from the applicants' property discharging over the slope</li> <li>• even should such a discharge happen, there is a very low risk of stormwater causing instability and damage to the slope.</li> </ul> <p>The report concludes the retaining wall as constructed on 101C is sufficient to retain the toe of the slope, and that the slope above the retaining wall is sufficiently stabilised, such that a PS4 could be provided for the wall on 101C.</p>
23 February	<p>Authority's engineer, engaged at this point by the developer, provides a PS4 for the section of the retaining wall constructed on 101C.</p> <p>The notes on the PS4 confirm the construction of the timber pole retaining wall and state that it has been "constructed</p>

	generally in accordance with” the consented design supplied by the developer’s engineer.
24 February	Authority issues code compliance certificate for 101C.
1 March	Applicants again request authority to stop the works on 101B and 101C on the basis that some of the work is occurring over the boundary on their property and concerns the embankment is subsiding, the fence is hanging in places, there is damage to the concrete nib, and the crack in the driveway is widening. Authority advises it is dealing with the matter.
10 March	Property 101B Authority advises developer they will need to supply a completed PS1, revised design and calculations for the wall, and that once the authority has received these, the developer will have to apply for an amendment to the building consent.
3 April	Authority’s records show there is a change of ownership for 101C.
13 April	Authority inspects the site at 101B. Notes the developer is working on building the retaining wall. States the land slumping is a civil matter between the applicants and the developer.
25 May	Developer applies for an amendment to the building consent for 101B. <sup>11</sup> Amendment is to “alter the retaining wall”. Compliance with Clause B1 is stated by way of specific engineered design (SED). Plans attached to the amendment application show earth anchors installed at depths of up to 1.8m into the embankment, with geotextile erosion control matting installed across the embankment face.
4 June	Applicants’ photographs show the crack has widened further. One plate can be seen higher than the adjacent plate. The applicants commented the driveway is moving towards the edge of the property.
6 June	Authority receives a PS1 from the authority’s engineer, dated 16 March 2017, confirming the compliance of the proposed revised retaining wall design with Clause B1 for

<sup>11</sup> Application and certificate of title submitted with it records the developer as the owner.



	101B. PS1 notes that “confirmation of anchor installation will be required by site observation”.
20 June	Authority’s records show a change of ownership for 101B.
27 June	Authority issues amendment to the building consent for 101B (ABA 2016/356 A) for alterations to the retaining wall.
June	Developer installs earth anchors within the section of the embankment in 101B. Geotextile cloth installed, and grass seeded.
11 August	Applicants appoint a surveyor (“the applicants’ surveyor”) to establish the boundary line with lots 101B and 101C. Surveyor confirms that the boundary pegs are in the right position, and notes slumping to the south in the south-eastern corner of the applicants’ property.
September and October	Applicants correspond and meet with the authority to discuss ongoing concerns over the retaining wall, slumping, and stormwater.
31 October	<p>Applicants engage a geotechnical engineering firm (“the applicants’ engineer”) to assess the slope conditions of the embankment and the associated siteworks.</p> <p>Applicants’ engineer provides a report dated 31 October 2017. Report concludes that the non-engineered fill underlying the driveway has failed, with subsequent cracking of the driveway. The damage is attributed to the siteworks at 101B, as they have removed support to the driveway.</p> <p>A copy of the report is provided to the authority on 8 November 2017.</p> <p>(See Appendix A for more details of this report).</p>
20 December	<p>The authority engages its engineer to review the applicants’ engineer’s report of 31 October 2017.</p> <p>The authority’s engineer provides a review dated 20 December 2017. The review considers the applicants’ engineer’s description of the earthworks is valid, and notes that the original timber pole retaining wall designed by the developer’s engineer was “below par” from an engineering perspective. However, construction changes made onsite, namely the earth anchors and geotextile cloth, may mitigate some of the design’s shortfalls.</p>

	<p>Also notes that the discharge of stormwater from the applicants' property is the most likely reason for the issues with the driveway, and that the owner of 101B and developer should not have to remediate what is an historical problem.</p> <p>(See Appendix A for more details of this report).</p>
<b>2018</b>	
13 January	Photograph provided by the applicants shows the crack has lengthened down the driveway.
30 May	<p>Developer's builder applies for a code compliance certificate for 101B<sup>12</sup>, which includes the section of retaining wall.</p> <p>Application is accompanied by a completion report and PS4 for the wall from authority's engineers. PS4 states the timber pole retaining wall was constructed generally in accordance with the consented design provided by the developer's engineers. Confirms that slope protection work has been installed in accordance with the authority's engineer's design.</p>
31 July	Applicants send update to authority about the failing bank and driveway. Authority responds that the earthworks were investigated in 2015 and did not breach district plan standards, and that a discussion was had with an internal expert regarding driveways, who considered it was a private matter, not coming under any building or resource consent regulations.
9 August	<p>Authority engages a geotechnical engineering firm ("the authority's geotechnical engineer"), to undertake a geotechnical review of the as-built retaining wall at 101B. The scope of the review excludes issues related to driveway cracking and slumping on the applicants' property.</p> <p>In a report dated 9 August 2018, the authority's geotechnical engineer concludes that although the retaining wall at the toe of the slope was undersized, it would perform adequately to support the overall slope. However, issues with the shallow instability of the slope above the retaining wall have not been sufficiently addressed by the installation of the earth anchors and erosion matting. The slope only has</p>

<sup>12</sup> The application records the developer as the owner of the property.

	<p>marginal stability for a shallow failure; its stability needs to be further addressed to improve this.</p> <p>If nothing is done there is likely to continue to be inadequate shallow stability and ongoing creep, although catastrophic failure is unlikely.</p> <p>The report recommended that additional works be completed to remediate the slope to satisfy long-term performance requirements and compliance with the Building Code.</p> <p>(See Appendix A for more details of this report).</p>
October	<p>Photographs provided by the applicants showing the crack across the driveway. One side has lifted further up than the other side. The crack appears to be approximately 20mm wide.</p>
<b>2019</b>	
December 2018 to February 2019	<p>Authority presents a draft design for the remediation of the retaining wall at 101B to the applicants. Design involves supporting the driveway by foundation piling to avoid the possibility of future deflection in the retaining wall piles from driveway surcharge.</p> <p>Throughout January and February 2019, the authority and applicants discuss aspects of the design. Applicants do not consider that the proposed design addresses issues concerning stabilisation of the embankment or restoring lost ground levels. On 21 February 2019, applicants advise authority that they are not prepared to accept the proposed design.</p>
January	<p>Photographs provided by the applicants show the driveway crack has widened to approximately 30mm.</p>
6 March	<p>Authority advises applicants that, based on engineering reports, it is of the view the driveway is constructed on uncertified fill and that stormwater has been discharging from the driveway over edge of bank for an extended period. The authority believes these two factors have contributed significantly to the movement and slumping of the driveway and bank over a period.</p>

## 4. The experts' reports

- 4.1. Numerous experts' reports have been commissioned regarding the sitework:
- the developer's geotechnical expert's report of 8 April 2016
  - the authority's engineer's report of 23 February 2017
  - the applicants' engineer's report of 31 October 2017
  - the authority's engineer's desktop review of 20 December 2017
  - the authority's geotechnical engineer's report dated 9 August 2018.
- 4.2. The conclusions from these reports have been summarised in table 2 above at the point in the timeline of events that they were written. This indicates the date that the information was available to the parties. Longer summaries of the reports have been included in Appendix A.

## 5. The submissions

- 5.1. The applicants applied on 19 August 2019 for a determination on whether the building work complied with the Building Code and on the authority's decision not to issue a notice to fix.
- 5.2. Both the applicants and the authority have made submissions on this matter, which I have summarised below. The owners of 101B and 101C did not make a submission, nor did the developer.

### The applicants' submissions

- 5.3. The main points made in the applicants' submissions were as follows.
- 5.3.1. The November 2015 earthworks removed "truckloads of silt and roots" from the embankment and created a 5m fall, yet no safety fence was erected. From November 2015 to June 2017 the cut bank remained unprotected and exposed to the elements.
- 5.3.2. The soil under the driveway is non-engineered fill, based on the geological reports.
- 5.3.3. Despite the PS4 issued by the authority's engineer for the siteworks within 101C, the embankment in 101C continues to "fall away and ends up on the [owners of 101C's] sidewalk and the length of the 1.2 [metre] retaining wall".

- 5.3.4. The authority did not visit the site during the installation of the earth anchor system in 101B, and the embankment “continues to slump” after its installation. The applicants did not endorse this system or give permission for the earth anchors to enter their property.
- 5.3.5. The report of the applicants’ surveyor confirms that all the plans approved by the authority show the boundary in the wrong place. The boundary is not the edge of the driveway but is located between 0.5m and 1m to the south. The applicants have advised the authority of this, but the authority has dismissed the surveyors’ report.
- 5.3.6. In January 2018, the applicants lost the water supply to their dwelling, which they suspect is due to ground movement under the driveway. Water supply is now via a temporary above-ground connection.
- 5.3.7. The applicants are unable to fence their boundary as this “land has gone down the bank”. They have a section of their driveway that they cannot use because there is insufficient supporting ground underneath it. When they purchased the property, the driveway had one fine crack in one plate. It now has four plates cracked running the length of 101B. There is nothing to prevent the embankment continuing to settle.
- 5.3.8. The applicants disagree that this is a “civil matter” or that the discharge of stormwater from their property is the problem. The camber of the driveway directs stormwater to the driveway’s inside edge and a storm drain.
- 5.3.9. The applicants would like their lost ground and original boundary reinstated to its “original elevation”, and the bank supported by a full height retaining wall. Although the authority has made an offer to fix the damage to the driveway, it still does not want to address the original cause of the damage and the ongoing deterioration of the driveway.
- 5.4. On 9 December 2019, the applicants provided another submission noting that a safety fence has not yet been constructed along the boundary, and that the authority’s submission showed three different owners of this property had brought the issue of the retaining wall to the authority’s attention. The applicants included new photographs of the driveway and bank.
- 5.5. On 16 February 2020, the applicants sent through a submission stating there had been a significant change to the “top plate” of the driveway. The right side of the “plate” had dropped, and the gap had widened. The applicants provided further photographs of the driveway.
- 5.6. In a submission dated 24 July 2020, the applicants provided photographs that showed further widening of the driveway crack up to 50mm. The photographs also showed one side of the driveway plate was now elevated above the other.



**Figure 5: Photograph of driveway crack**

### **The authority's submission**

- 5.7. The authority made a submission dated 27 September 2019. The main points from the authority's submission are as follows.
- 5.7.1. Regarding the compliance of the retaining wall, the authority engaged its geotechnical engineer to prepare a report on whether the consented retaining wall and remedial ground anchoring system complies with Clause B1. The report concluded that full compliance is not achieved for 101B.
  - 5.7.2. A code compliance certificate has not been issued for building consent ABA 2016/356 for 101B. A compliant safety barrier to prevent falling has not yet been erected.
  - 5.7.3. The authority concluded it was not necessary to issue a notice to fix to the developer for the building work to construct the retaining wall following the failed site inspection on 6 July 2016 for the following reasons:
    - a) the authority was not aware of any repeated breaches of the Act or Building Code by the developer
    - b) the breach regarding compliance with Clause B1 was not deemed significant, as partial compliance of the retaining wall was achieved, particularly as the breach was caused by a genuine mistake in design

- c) the authority did not believe the building work was unsafe or likely to become unsafe
  - d) there were not reasonable grounds to think any non-compliance was likely to be continued, as the developer advised its was prepared to take steps to verify and remedy any non-compliance, including: seeking confirmation from its engineer as to whether the building work complied with the Building Code; and providing an alternative design (if required) to ensure the building work complied.
- 5.7.4. As there was a change of ownership for the property at 101C on 3 April 2017, and a change of ownership for the property at 101B on 20 June 2017, the authority could not issue a notice to fix in relation to the building work to construct the retaining wall by the previous owner under building consents ABA 2016/342 and ABA 2016/356. The authority referred to two previous determinations<sup>13</sup> that noted a notice to fix can only be issued to the owner who contravened or failed to comply with the Act: where building work has been carried out by a former owner, the current owner cannot be issued with a notice to fix.
- 5.7.5. The authority also noted that previous changes of ownership had occurred for 101B on 15 December 2010 and on 5 February 2016. A change of ownership also occurred for 101C on 15 December 2010 and on 23 July 2015.
- 5.7.6. With respect to 101C, the authority stated that, based on the PS4 provided by the authority's engineer on 23 February 2017, it was satisfied on reasonable grounds that this section of the wall had been built in accordance with the consent and so felt able to issue a code compliance certificate for it.

## Responses to the draft determination

- 5.8. The draft determination was sent to parties and the developer on 17 December 2021.
- 5.9. The applicants accepted the draft determination, reiterating previous points regarding when the authority could have issued a NTF. They also outlined their view that the authority's failure to issue a NTF resulted in damage to the driveway of their property, stating:

...there was a period between the excavation of the land and the construction of the wall where the failure to install a retaining wall caused damage to the driveway of our property. The Council had knowledge of the cracks and in that

---

<sup>13</sup> Determination 2014/035 and Determination 2015/073.

period prior to the construction of the wall in July 2016 and failed to issue a notice to fix. The failure to do so lead to avoidable damage.

- 5.10. The owners of 101C accepted the draft determination, saying, “When purchasing the property in 2020 this situation [the subject of this determination] was not disclosed to myself or my solicitor at any time during the purchasing process.”
- 5.11. The authority accepted the draft determination, providing some information about the building consents and the dates of sale of the properties. In respect of its decision not to issue a notice to fix, the authority noted:

Due to the Authority’s customer focussed approach at that time, the consenting team worked with the parties to achieve compliance, unless the situation on site was deemed to be dangerous, insanitary, or high risk. The building work on site did not meet these criteria. In these lower risk situations, working to achieve compliance with the parties took preference over the issuing of notice[s] to [fix] and enforcement action.

- 5.12. The owner of 101B did not wish to comment on the draft determination. The developer, who is a person with an interest, did not respond to the draft determination.

## 6. Discussion

### Preliminary matter: ownership 101B and 101C

- 6.1. It is important to know who owned the properties at the various times that the subject building work was carried out on 101B and 101C, as this affects who was responsible for the work and the authority’s ability to exercise its powers.
- 6.2. There is some inconsistency between the dates when the parties believe that ownership of these properties changed hands and who is stated to be the owner on the various consent and other documentation I have seen.
- 6.3. The authority advises that it holds “Sale of Ownership or Occupancy” documents that confirm settlement dates indicating when the properties changed ownership after 2015:
- 101B – 5 February 2016 and 20 June 2017
  - 101C – 23 July 2015, 3 April 2017 and 30 September 2020.
- 6.4. The authority has advised that it holds records to show that the developer purchased 101C on 23 July 2015 and 101B on 5 February 2016. However, correspondence from the parties, including a record of a site visit by the authority



carried out on 18 November 2015, show the developer was carrying out the 2015 siteworks on both properties at that time<sup>14</sup>.

- 6.5. It may be that inconsistency regarding the dates of ownership reflects when the agreement to sell was in place, rather than when the title passed. This would be common in development situations, where although an agreement has been made to purchase a property, title does not pass until the code compliance certificate has been granted or some other agreed date.
- 6.6. For the reasons discussed in paragraphs 6.41 to 6.58, it is not necessary for me to form a conclusion on whether the developer owned the 101B while the 2015 earthworks were being carried out.
- 6.7. It is clear the developer was still the owner of 101C at the point that the work to cover the embankment with geotextile matting and seed was done on that property. The developer is named as the owner in the application for a code compliance certificate on 29 November 2016, by which stage the work had been completed.
- 6.8. What is less clear is whether the developer was still the owner of 101B in June 2017 when the earth anchors and geotextile erosion matting was installed on the embankment on 101B.
- 6.9. However, an amendment to the building consent (ABA 2017/0356A) was sought for this work, and that application names the developer as the owner of 101B. The application for the consent included a certificate of title, which also names the developer as the owner. It appears, from the timelines of events that the parties have provided, this work was carried out in the interval between when the amendment to the consent was applied for (25 May 2017) and when it was granted (27 June 2017).<sup>15</sup>
- 6.10. In light of the evidence available to me, I have taken the view that the developer was still the owner of 101B at the time that the building work on that property that is subject of this determination was consented and carried out, and I proceed on this basis.

## The legislation

- 6.11. The applicants have requested a determination about the authority's decision not to issue a notice to fix for the building work. They have also asked for a determination on whether the building work complies with Clause B1 *Structure of the Building Code*.

---

<sup>14</sup> This record also refers to the developer as the owner of both 101B and 101C.

<sup>15</sup> The determination does not address any issues related to sequencing of the work with the approval.

6.12. The applicants are not the owners of the properties where the building work has occurred, but of a neighbouring property, which they allege has been negatively impacted by the works. My examination of the work's compliance with Clause B1 is therefore limited to the requirements in the Building Code that concern protection of "other property".

6.13. Other property is defined in Clause A2 of the Building Code (and similarly in the Act) as:

means any land or *buildings* or part thereof which are—

(a) not held under the same *allotment*; or

(b) not held under the same ownership—

and includes any road

6.14. The definition makes clear that other property includes both land and buildings held separately from the property where the work is occurring. This interpretation is consistent with that adopted in previous determinations<sup>16</sup>, including Determination 2019/029<sup>17</sup>, where it was considered in relation to Clause B1.3.6.

6.15. The requirement to protect other property is contained in the objective for Clause B1 and in the specific performance criteria in Clause B1.3.6.

#### **Clause B1—Structure**

##### **Objective**

The objective of this provision is to:

(a) ...

(c) protect *other property* from physical damage caused by structural failure.

##### **Performance**

#### **B1.3.6**

*Sitework*, where necessary, shall be carried out to:

(a) provide stability for construction on the site, and

(b) avoid the likelihood of damage to *other property*.

6.16. Accordingly, a performance requirement for any 'sitework' is that it is carried out to avoid the 'likelihood of damage' to 'other property'.

6.17. Section 17 of the Act stipulates that all building work must comply with the Building Code, and both the Act and Building Code make it clear that "building work" includes "sitework".

---

<sup>16</sup> For example, Determination 2015/003: compliance of a retaining wall between two properties (10 February 2015).

<sup>17</sup> Determination 2019/029: Regarding the compliance of a retaining wall and associated sitework (27 June 2019).

6.18. "Sitework" is defined in both Clause A2 of the Building Code and section 7 of the Act as:

**sitework** means work on a *building* site, including earthworks, preparatory to or associated with the *construction, alteration, demolition, or removal of a building*

6.19. Therefore, the sitework in this case includes the earthworks, which were done in preparation for or association with the construction of the new dwellings. This includes all the work on the retaining wall and embankment covered by the building consents (including the amendment) issued for 101B and 101C. It also includes the preparatory earthworks carried out in November 2015 to ready the site for construction, which were not included within those building consents. These are the siteworks outlined in paragraph 2.16 of this determination.

6.20. The building work considered in this determination therefore consists of the November 2015 earthworks to clear and shape the embankment, the April 2016 earthworks to remediate a failure in the embankment, the July 2016 construction of the 1.2m high timber retaining wall at the base of the embankment, the 2016 addition of geotextile matting to the embankment within 101C, and the June 2017 addition of geotextile matting and installation of earth anchors to the embankment within 101B.

6.21. Regarding the requirement to avoid the "likelihood of damage" to other property in Clause B1.3.6, I have adopted the reasoning from *Auckland CC v Selwyn Mews Ltd*<sup>18</sup> that:

... in cl B1.3.6 "the likelihood of damage to other property" refers to a real and substantial risk of such damage.

6.22. Accordingly, what I must now consider is whether the building work, including siteworks, on 101B and 101C has been carried out to avoid the likelihood of damage. This means whether there was a real and substantial risk of damage to the applicants' property, specifically their land and driveway.

### **Compliance of the building work**

6.23. The earthworks carried out pre-2015 as part of the subdivision of the adjacent property are not within the scope of this determination. However, there is record of the embankment showing signs of degradation in 2013<sup>19</sup>, and at one point slumping was occurring. For this determination, which can only consider the compliance of the building work (not the earthworks that were part of the subdivision), I must distinguish between any existing issues and any potential effects of the subdivision earthworks versus the building work that is the subject of this determination.

---

<sup>18</sup> Refer 18/6/03, Judge McElrea, DC Auckland CRN2004067301-19.

<sup>19</sup> On 9 April 2013, the authority identified the excavated face of the slope was deteriorating, as some material had slipped away, and gradual erosion was evident.

- 6.24. The original slope from the southern boundary down into the adjacent properties was gentle to moderate. It is apparent from the authority's records that the previous owner of 338 Parawai Road raised concerns shortly after the pre-2015 earthworks were carried out as part of the subdivision of the adjacent property. A photograph of the embankment before the 2015 earthworks were carried out shows a grassy slope (see Figure 2).
- 6.25. The 2015 earthworks were carried out much closer to the boundary than any previous excavation and removed most of the vegetation (see Figures 2 and 3).<sup>20</sup> I note the record of the authority's site visit after the November 2015 earthworks and clearing of vegetation along the embankment comments on a lack of consideration given in the subdivision consent to the surcharge imposed by the applicants' driveway and its use.
- 6.26. I turn now to the subject building work, which is the 2015 and onwards earthworks and the construction of the retaining wall. In considering the compliance with Clause B1.3.6 of this building work, I have had the benefit of the numerous experts' reports commissioned by the parties (refer to Appendix A). The dates and key points from these reports are as follows.
- 6.26.1. 8 April 2016 – developer's geotechnical expert provides assessment of sites' soils and stability as part of building consent application, although does not test the embankment. Makes recommendations based on a crib retaining wall being constructed on the embankment within both 101B and 101C. Site plan attached to the reports shows a full-height crib retaining wall. The report notes the existence of a slip on the embankment.
- 6.26.2. 8 and 23 February 2017 – authority's engineer inspects ground conditions and retaining wall and reports further remedial work is required across the upper slope on 101B, but no further work is required on 101C.
- 6.26.3. 31 October 2017 – applicants' engineer assesses embankment slope conditions and building work and concludes the non-engineered fill underlying the driveway has failed; the work undertaken by developer was not considerate of the applicants' land and has caused damage to the driveway by removing the underlying support.
- 6.26.4. 20 December 2017 – authority's engineer concurs with applicants' engineer's description of the building work and concludes the 1.2m high timber-pole retaining wall, as designed and built, is "below par". However, subsequent changes may have mitigated some of the design's shortfall, and that the uncontrolled discharge of stormwater from the driveway is the most likely cause of the damage to the embankment.

---

<sup>20</sup> The applicants were of the view the work was carried out over their boundary. However, the surveyor did not identify that any work was carried out over the boundary.

6.26.5. 9 August 2018 – authority’s geotechnical engineer assesses the stability of the embankment and retaining wall within 101B. The report noted the surface of the retaining slope was “uneven and hummocky”, which indicated relatively shallow downslope movement. The cracking along the driveway was noted as generally parallel to the top of the slope, at approximately 9m long and roughly 2.5m from the top of the slope. The report also noted:

the issue of shallow instability above the retaining wall does not appear to have been sufficiently addressed by the installation of the anchors and erosion matting.

The report concludes that additional work is required to remediate the slope so that it complies with the Building Code.

- 6.27. The applicants have also provided comprehensive photographic evidence to show the progress in the embankment and driveway’s deterioration since the 2015 earthworks. The photographs show the situation has worsened significantly since then, from hairline cracks in 2015 to 50mm wide cracks (refer to Figure 4). My conclusion is that the 2015 earthworks have further destabilised and accelerated the slumping of the bank, and this conclusion is supported by the conclusions reached by the parties’ various experts as to the stability of the bank after the 2015 earthworks.
- 6.28. The parties vary in their perception of how much foliage and earth was removed during the 2015 earthworks. Irrespective of the earthworks’ scope, in my opinion it is clear the work was not carried out to avoid the likelihood of damage to other property and has in fact caused damage to both the applicants’ embankment and driveway. Therefore, the 2015 earthworks were not carried out in compliance with Clause B1.3.6.
- 6.29. At this stage, it becomes necessary to consider the building work carried out to 101B and 101C separately after the 2015 earthworks, as the outcomes of the building work have been different for each property.
- 6.30. Originally a full-height crib wall was proposed, but the authority later approved the change to a 1.2m high timber retaining wall. It is clear from the engineering reports that when this retaining wall was originally constructed it was not adequate to retain the embankment, which will lead to continued slumping of the driveway. The authority’s own engineer describes it as “below par” in 2017.
- 6.31. The authority’s engineering report, dated 8 February 2017 stated:

The retaining wall design...has used a backslope angle equal to the soil friction angle, and has not considered the additional soil material above 30° slope. The presented design also considers the toe soils as ‘Firm Clay’, whereas previous site testing and reporting by [the authority’s engineer] suggest that the upper soils were ‘softer’ than firm (stiff) clays. In short, the presented design has not captured the true nature of the soil materials and strength properties and is therefore considered to be ‘non-conservative’ and not very robust.

The report continued to state the possibility of the upper slope becoming softened and at “increased risk of ‘slumping’”, which would result in a loss of support to the neighbouring driveway. The authority’s engineer recommended an additional concrete barrier pile wall be installed across 101B to provide long term stability to the upper slope area.

### **101C**

- 6.32. The section of the embankment within 101C is less steep and smaller than that within 101B, and there is a greater margin between the top of the embankment and the edge of the applicants’ driveway. The authority’s engineer reported the 101C section of the embankment is now sufficiently stabilised and issued a PS4 in respect of the retaining wall. Accordingly, the authority has issued a code compliance certificate for the building work that includes this section of the retaining wall.
- 6.33. The applicants have advised that this section of the embankment has continued to erode, and that the owners of 101C have tried unsuccessfully to get the developer to address the issue. I have not received any evidence from the parties regarding the continuing performance of the embankment on 101C. In the absence of such evidence, I will accept the authority’s engineer’s assessment of the current stability of the embankment, and the authority’s assessment of the code compliance of the retaining wall on this property.

### **101B**

- 6.34. Turning now to 101B, the embankment in this area is much steeper and has been subject to additional siteworks (namely the installation of earth anchors) as an attempt to stabilise it. I consider it clear that these measures have been unsuccessful. The photographs and geological reports clearly show the embankment remains unstable and has continued to slump, as the retaining wall is not sufficient to retain the embankment. As stated earlier, the authority’s geotechnical engineer’s report noted that if no action is taken due to the inadequate shallow stability of the embankment ongoing creep is expected. The likelihood of damage to the applicants’ property is a very real one.
- 6.35. In its correspondence and submissions, the authority has raised the issue of whether the stormwater discharging from the applicants’ driveway has exacerbated the situation. I note the approved drawings identified that a new concrete bund was to be installed on the applicants’ property to direct and collect the stormwater. This appears to have not been constructed during the build, with a dispute regarding the presence of stormwater.
- 6.36. The dwelling and driveway on the applicants’ property has been in place for over 35 years, and I assume the driveway has remained functional over that time. There appears to have been no issues, caused by stormwater or otherwise, until the natural contours of the land supporting the driveway were altered. The first time the issue of stormwater appeared was after the initial earthworks, pre-2015. In

other words, there was no issue with stormwater discharge until the earthworks created one. This situation is likely to have been exacerbated by the later 2015 earthworks, which steepened the slope of the embankment and left the soil exposed.

6.37. In addition, since being alerted to the possibility that stormwater was degrading the embankment the applicants have taken several steps to prevent stormwater discharging over the edge of their driveway, starting in December 2015 and culminating in the construction of a concrete nib wall in July 2016. There has been no suggestion that these measures have been ineffective, yet the embankment has continued to slump.

### **Conclusion on compliance**

6.38. I am of the view the 2015 earthworks within 101C were not carried out to avoid the likelihood of damage to the applicants' property. I consider the likelihood of such damage was a real and substantial risk, given that there was already tangible evidence of the slope's instability before the earthworks were carried out.

6.39. Accordingly, I conclude the building work on 101C did not comply with Clause B1.3.6, as it was not carried out to avoid the likelihood of damage. However, it has since been remediated to ensure no more damage occurs. I have reached this conclusion in the absence of any evidence that there is ongoing slumping or erosion of the embankment.

6.40. With respect to the portion of the building work carried out within 101B, I conclude this does not and never has complied with Clause B1.3.6 of the Building Code. The retaining wall or the subsequent additional mitigation measures have not been sufficient to stabilise the slope. There remains a "real and substantial risk" of damage to the applicants' property, as the embankment has been subsiding ever since the 2015 earthworks were carried out.

### **Refusal to issue a notice to fix**

6.41. Having concluded that the sitework did not comply with Clause B1.3.6, the next issue becomes whether the authority was correct to decide not to issue a notice to fix in respect of it.

6.42. Under section 164 of the Act, an authority can issue a notice to fix where it considers on reasonable grounds that a specified person is contravening or failing to comply with the Act or Building Code.

6.43. Section 163 of the Act defines a specified person:

specified person means—

- (a) the owner of a building:
- (b) if a notice to fix relates to building work being carried out,—
  - (i) the person carrying out the building work; or
  - (ii) if applicable, any other person supervising the building work:

6.44. A notice to fix can only be issued in respect of work that the authority knows to be in contravention or non-compliant. The offence is a serious one involving a fine of up to \$200,000 and reflects the main purpose of a notice to fix, which is to ensure compliance and provide effective penalties for those that do not comply.

6.45. In its submissions, the authority has stated that it did not issue a notice to fix following the failed site inspection for the retaining wall on 6 July 2016 because it was not aware of any repeated breaches by the developer regarding the Act or Building Code. The breach in terms of Clause B1 was not deemed significant, as partial compliance was achieved and the breach was caused by a mistake in the design. The authority believed the building work was not unsafe or likely to become unsafe or that non-compliance was likely to continue.

6.46. The authority also stated:

Due to the Authority's customer focussed approach at that time, the consenting team worked with the parties to achieve compliance, unless the situation on site was deemed to be dangerous, insanitary, or high risk. The building work on site did not meet these criteria. In these lower risk situations, working to achieve compliance with the parties took preference over the issuing of notice[s] to [fix] and enforcement action.

6.47. However, there was a continued breach of the Building Code by leaving the earthworks inadequately retained, which was left unaddressed from 2015 to 2017, when ownership of the property changed. I consider the following as evidence the building work to 101B was breaching Clause B1.3.6:

6.47.1. The earthworks did not factor any surcharge from the neighbouring driveway into account when excavating the embankment. The applicants raised their concerns with the authority, although no enforcement steps were taken.

6.47.2. The retaining wall was not constructed to the approved drawings and the concrete bund to address stormwater runoff was also not constructed. Several reports from 2017–2018 identified the embankment was not sufficiently retained.

6.47.3. As a result of the insufficient retaining, the embankment on 101B has continued to slump because of the earthworks removing support to the non-engineered fill. The driveway cracks have also visibly continued to expand in size.



- 6.48. I consider there was clear evidence on which to base the issue of a notice to fix for the continued non-compliance of the building work to 101B, during 2015–2017. Despite this evidence, a notice to fix was not issued.
- 6.49. The authority has now missed the opportunity to require the owner of 101B, via a notice to fix, to make the work compliant, as the property has now changed hands and several years have since passed. If the non-compliance was not addressed prior to sale the authority could not address a notice to fix to the new owners.
- 6.50. While there was some time between the earthworks and construction of the retaining wall, I maintain the view expressed in previous determinations<sup>21</sup> that a notice to fix can be issued more than 6 months after the completion of the building work. There is no time limit on when such a notice to fix might be issued.
- 6.51. Therefore, I am of the view it would have been appropriate to issue a notice to fix to ensure the remediation was addressed prior to the property changing ownership in June 2017<sup>22</sup>.

### **Issue of a notice to fix**

- 6.52. At the point in time when the developer was the owner the authority could have issued a notice to fix to them. However, the ownership of the property changed during construction. I now need to consider whether the authority could have issued a notice to fix to the developer as a person supervising the building work.
- 6.53. The definition of ‘supervise’ in section 7 includes the provision of the control or direction and oversight of the building work to ensure the building work is completed competently. In addition, sections 84 and 85 use the term ‘to supervise’ in respect of licensed building practitioners. Determination 2010/073<sup>23</sup> considered what supervision meant when considering whether an insurance company could be issued a notice to fix. In that determination, it was decided the insurance company did not provide sufficient assistance to come within the definition of supervise.
- 6.54. The factors that point to the developer supervising more than the insurance company include that they appear to be the sole decision-maker regarding the site work until early 2016. The developer’s line of business is in property development, and they would have more knowledge than an insurance company in matters relating to construction. The developer in late 2015 also had the sole interaction with the authority regarding the site works. I would require more information about

---

<sup>21</sup> See for example Determination 2014/051 The issue of a notice to fix for the construction of a deck without building consent (*Ministry of Business, Innovation and Employment*) 20 October 2014.

<sup>22</sup> I note here for completeness that the authority would only have been able to issue a notice to fix to the developer as a specified person under section 163(a) from the point at which the developer owned the property.

<sup>23</sup> Determination 2010/073 The issue of a notice to fix to the owner only of a house (*Ministry of Business, Innovation and Employment*) 23 August 2010.

the role of the developer with the building work after early 2016, but for the following reasons I consider that information would be irrelevant.

- 6.55. In early 2016, the developer engaged the services of a builder and geotechnical and structural engineers due to the increased complexity of the work. The developer did not have any professional skills associated with building work, and a licensed building practitioner and engineers were required for the proposed building work. The licensed building practitioner rather than the developer would have been more involved in directing and controlling any building work. So, if the developer previously met the definition of 'supervise' after this point they would no longer to meet this definition.
- 6.56. Therefore, it is possible the developer was supervising the building work before the builder and the other professionals were engaged and the building consent was issued in 2016. After this point, in my view, the developer could not be described as supervising the building work. However, the developer was still the owner of the property until June 2017 and the authority could have issued a notice to fix as the owner.
- 6.57. Under the circumstances, I may have reversed this failure by the authority and required a new decision be made. However, as there is a new owner, a notice to fix cannot be issued to that owner.
- 6.58. It would also be inappropriate to issue a notice to fix to the developer, even if they were a specified person due to the number of years that have passed since the work was carried out and the fact that the developer no longer has control over the site so will not necessarily have the ability to remedy any breaches.

### **Conclusion on the notice to fix**

- 6.59. Accordingly, I conclude the authority should have issued a notice to fix to the developer, preferably as soon as it became evident the developer had carried out earthworks that were non-compliant, and then when it was clear the retaining wall was not sufficiently retaining the embankment to 101B. Among other things, the notice should have required the developer to demonstrate how compliance with Clause B1.3.6 of the Building Code was to be achieved.
- 6.60. As the properties have now changed owners, and the developer (as the person supervising the building work early in the project) has no ability to remedy the contravention, it would not be appropriate for the authority to issue a notice to fix for the sitework.

## **7. Decision**

- 7.1. In accordance with section 188 of the Building Act 2004, I determine that:

- 7.1.1. the building work on 101B does not comply with Clause B1.3.6 of the Building Code.
- 7.1.2. the building work on 101C does comply with Clause B1.3.6 of the Building Code.
- 7.1.3. the authority was incorrect in its decision to refuse to issue a notice to fix for the sitework. However, for the reasons discussed in paragraph 6.58, there is no value in me directing that this decision be reversed.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 7 July 2022.

**Katie Gordon**

**National Manager, Building Resolution**

## Appendix A

### **A1 – Summary of the developer’s geotechnical expert’s assessment dated 8 April 2016**

The developer engaged Phoenix Consulting Engineers Ltd (“the developer’s geotechnical expert”) to complete geotechnical assessments of the soils on both 101B and 101C. The expert carried out assessments on 12 and 15 March 2016, looking at the suitability of the sites and soil for constructing dwellings on the two properties.

The expert provided two assessment reports on 8 April 2016. The reports provided options for the foundation designs for the proposed dwellings and noted that the recommendations were based on the “construction of the crib wall to retain the upper slopes on the north boundary to the property”.

The expert did not carry out a slope stability analysis of the embankment, although both reports noted:

There was no obvious sign of the slope movement on the lower roadside slopes, but there was a slip on the up hill slope, we understand that the uphill slope will be retained by a Permacrib wall.

No slope stability has been carried out as part of this report.

A crib retaining wall is shown on the site plan as extending to the northern side of the property at 2.5m deep and the eastern side of 101B at 1.5m deep.

### **A2 – Summary of the authority’s engineer’s reports dated 8 and 23 February 2017**

The authority engaged multidisciplinary engineering firm Mercury Bay Civil Design (“the authority’s engineers”) to assess the approved timber retaining wall and ground conditions. The engineers inspected the retaining wall on both properties and assessed the adequacy and slope stability integrity of the slope.

#### **8 February 2017 – relating to 101B**

The engineers provided a report dated 8 February relating to 101B. The report identifies that further remedial work is required to the slope of the embankment above the retaining wall on 101B. It concludes that the developer’s engineer’s design underestimates the back-slope of the embankment at the base of the slope; it considers that while the wall’s design is suitable to retain toe of slope, further remediation using an in-ground barrier pile wall is recommended along the boundary near the top of the slope.

### **23 February 2017 – relating to 101C**

The engineers provided a report dated 23 February relating to 101C. The report noted that further remedial work was required across the upper slope on 101B but the certifying engineer was “confident that no further works were required to the section of wall across 101C”.

The report described retaining wall as being 1.2m in height, with 200mm diameter H5 treated poles, with select poles at 225mm diameter. The poles are embedded into concrete socket footings by a depth assumed to be at least 1.2m depth and spaced at 0.9 – 1.0m centres.

The section of the retaining wall on 101C has a concrete apron pavement poured against the toe of the wall, which has reduced the face height of the wall to 1.05m and increased the embedment depth to approximately 1.35m to 1.4m (minimum). This section of the wall has been constructed on an area where the upper topsoils and a shallow depth of natural soils have been removed into “reasonably firm and competent silty clay-based soils”.

The report also noted the developer has placed planting mat and grass seed across the slope above the wall. There is a very low risk of surface stormwater from the applicants’ property discharging over the slope, and even if such an event should happen, there is a very low risk of stormwater causing instability and damage to the slope.

The report concluded the retaining wall as constructed on 101C was sufficient to retain the toe of the slope, and the slope above the retaining wall is sufficiently stabilised, such that a PS4 could be provided.

The authority’s engineers provided a PS4, also dated 23 February 2017, for construction monitoring engineer observations. The notes on the PS4 stated:

Confirm Timber Pole Retaining Wall Construction – Lot 3

Timber pole retaining wall constructed generally in accordance with consented engineering design by [the developer’s engineer]

### **A3 – Summary of the applicants’ engineer’s report dated 31 October 2017**

The applicants engaged a geotechnical engineering firm GCL Geotechnical (“the applicants’ engineer”), to assess the existing slope conditions of the embankment and the impact of the adjacent sitework developments. The engineer’s provided a report dated 31 October 2017.

### **Existing site topography**

The report described the existing site topography, noting the southern boundary line of the applicants' property now comprises a steep break of slope, with slope angles 45 to 47° to the horizontal. The bank has a height of up to 3.6m with the base of the bank currently retained by a 1.2m high retaining wall, which provides a total bank height of up to 4.8m.

The bank is presently covered with a green geotextile cloth, which was installed in June 2017 to remediate ongoing slumping across the slope face. An earth anchor system had also been installed to depths of up to 1.8m within the bank in 101B, as a further method to remediate any up-slope failure.

Prior to the construction of the embankment, the southern boundary line of the applicants' property consisted of a diffuse break of slope, beyond which lay gentle to moderately steep slopes, protruding approximately 7m downslope in 101B and 101C.

### **Slope instability features**

Cracking has developed within the driveway adjacent to the bank. At the time of the report, the cracking was up to 30mm wide in places and located approximately 2m up-slope of the southern boundary line. The cracking appears to be associated with slumping and rotation of the driveway along the southern edge. The slumping is in order of 100mm to 300mm. The report noted that the engineers understood the cracking had appeared soon after the construction of the embankment and has progressively worsened since.

Slumping along the top of the bank is evident, where this is able to be observed, as the majority of the bank is covered in green matting. Slumping is evident from the slight drop in ground level along the southern edge of the driveway. It is understood the slumping has occurred in conjunction with the driveway cracking.

### **Review of aerial photographs**

A review of aerial photographs from 2001 to 2015 shows that between 2001 and 2007 the adjacent Lot 3 (101C) and Lot 4 (101B) were undeveloped sites. Sometime midway through 2015 the northern bank (southern boundary bank) has been cut to a grade and horizontal extent. In late 2016, the timber retaining walls appear to exist, with the up-slope bank appearing clean cut.

### **Ground conditions**

Non-engineered fill has been identified in the hand auger investigations to the bank, to depths of between 0.8m and 1.7m, with the fill increasing in depth from west to east along the boundary. This fill consists of gravelly silt and clay silt with minor gravel, which is loosely packed and stiff, moist to wet, moderate plasticity, and moderately sensitive to insensitive. Down-hole shear strength testing undertaken within the non-engineered fill, provides undrained shear strength of between 44kPa and 68kPa.

The residual soils underlay the fill to a depth of at least 3m. The soil consists of silt and clayey silt, which is generally very stiff to hard, moist with low to moderate plasticity and insensitive. The down-hole shear strength testing undertaken provided an undrained shear strength of between 79kPa and >191kPa, with strengths generally increasing with depth.

Groundwater was not encountered within any of the hand auger bores indicating a coherent and perched groundwater depth of at least 3m from existing ground level in the vicinity of the bank. This was deemed consistent with the elevated nature of the site relative to local surface water and ground water features.

### **Bank and driveway stability**

The cut embankment appears to have slumped in the past leading to significant cracking with the applicants' concrete driveway, which is located immediately alongside the top of the embankment. The cracking has appeared to advance down the driveway.

The report commented on the causes of the driveway and bank failure, noting the driveway is underlain by poorly compacted non-engineered fill to a maximum depth of 1.7m. Previously the non-engineered fill extended onto 101B and C, and graded down to natural grades at a moderately steep slope angle. While the non-engineered fill does not provide competent conditions as a driveway sub-grade, it appears that no significant damage occurred to the driveway due to this fill prior to the construction of the embankment, based on discussions with the applicant.

The creation of the embankment subsequently removed the support previously provided to the fill, likely leading to ground subsidence and slumping along the southern edge of the driveway. The effect of the slumping has been exacerbated with the proximity of the top of the embankment and driveway edge.

The stability of the embankment has likely been further compromised by driveway stormwater flowing onto the embankment face. The report commented the significance of this was difficult to determine from site observations and discussions with the applicants.

The report also commented on the effectiveness of the remedial measures to stabilise the bank. It was noted the effectiveness was difficult to assess at that stage because they were mostly recent features, but the following comments were noted:

The remedial measures appear to have been provided a piecemeal approach to the stability of the cut batter and clearly should have been undertaken as part of the formation of the cut batter in the first place.

...

The driveway should not be replaced until it is certain that any movement within the driveway sub-grade has ceased.

### **Conclusions**

The report concluded that the works undertaken within 101B and 101C were not considerate of the neighbouring effects, which directly led to damage of the driveway. Furthermore, it appears the works encroach slightly into the applicants' property and take no consideration of driveway and boundary surcharges.

The report noted it was difficult to assess the success of the remedial works on the embankment and recommended the state of the driveway be monitored and significant repairs only undertaken once the movement has been stabilised. The report also recommended that should further issues occur, the southern edge of the driveway be retained to at least the base of the non-engineered fill.

### **A4 – The authority's engineer's desktop review dated 20 December 2017**

The authority subsequently re-engaged its engineer to carry out a desktop review of the geotechnical report commissioned by the applicants.

The review dated 20 December 2017 noted the applicants' engineer's description of the earthworks was considered valid and concurred with their own observations and site measurements. The report also noted:

There is no doubting that the originally designed, and subsequently built 1.2m high timber pole retaining wall ([the developer's engineer]) was below par as far as constituting a 'robust engineering design'.

The report commented that since the construction of the wall, there have been changes at the site that could be viewed as 'positively mitigating' some of the perceived shortfalls in the robustness of the design.



The review considered the ‘ongoing and historic’ discharge of stormwater is the “most likely” cause of deterioration, soil movement and soil erosion that have led to settlement issues affecting the driveway.

The authority’s engineer also made provided the following comments on the applicants’ engineer’s geotechnical report.

- It is possible the settlement and cracking issues are due solely to the driveway being constructed over non-engineered fill, as well as in conjunction with ground water seepages and non-controlled stormwater discharges.
- Generally, the soil type is able to stand at angles steeper than 30° for a considerable period of time when un-retained. However, this does not mean that such cuts can go unsupported in perpetuity.
- The fact there is no groundwater lends weight to the “hypothesis” the driveway is settling due to the uncontrolled fill, rather than as a result of any “theoretical slumping”.
- The “slightly under-done pole retaining wall” at the toe of the slope is doing a “good job” of retaining the toe. There is no actual “failure load” on the structure and no lateral soil mobilisation. The installation of the earth anchors was carried out to prevent near surface soils from slumping across the top of the slope and threatening any dwelling on 101B.
- The work to stabilise the upper slope is to protect the slope, and not to protect the pre-existing problems due to the driveway being constructed on “poor quality sub-grade and sub-base material”.
- The current owner of 101B and developer should not have to fix a “perceived problem with the [applicants’] driveway, [that] has pre-existed for a considerable time, and likely caused by poor design and construction of the driveway itself”.

## **A5 – The authority’s geotechnical engineer’s report dated 9 August 2018**

On 13 July 2018, the authority engaged a firm of geotechnical engineers, Tonkin + Taylor (“the authority’s geotechnical engineers”), to assess the stability of the existing slope and retaining wall at 101B and determine if remedial stabilisation work was required.

The report dated 9 August 2018 noted that its scope excluded the stability and cause of the driveway cracking and slumping on the applicants’ property.

The authority's geotechnical engineer made the following observations based on a desktop review of the documentation provided by the authority. The engineers also reviewed the report commissioned by the applicants.

- In July 2016, the authority approved a design produced by the developer's engineer for the retaining wall, which assumed a backfill angle of 30°, with no additional surcharge indicated at the top of the slope.
- In January 2017, the authority's engineer conducted a site visit assessment and concluded the consented design was inadequate due to an under-estimation in the design of the back-slope angle and a failure to consider the lower strength of soils present in the backfill. There was an identified risk of failure of soils above 30° and of ongoing shallow slips that may lead to withdrawal of support to neighbouring land. The authority's engineer recommended a concrete barrier pile wall to remediate the design.
- In March 2017, the authority's engineer provided calculations to demonstrate that the developer's engineer's design for the timber retaining wall is at risk of failure and presented an alternative solution of pivoting-head ground anchors with matting. The authority's geotechnical engineer also noted:
  - the design assumes the existing pole retaining wall is sufficient to retain soil within a 30° back-slope angle, and appears to assume that failure will only be initiated as far back as the top of the slope
  - the design assumes that ground water does not influence upper soils and the soils beneath the pavement are inherently stable
  - there was no vehicle surcharge considered in the design, despite the neighbouring property having a driveway with parking adjacent to the top of the slope
  - the soil design parameters appear to have been assumed, based on local experience with no geotechnical investigations.

The authority's geotechnical engineer stated from its review of the documentation that there were several design factors that should have been considered, including:

- allowing for a vehicle surcharge on the neighbouring property
- allowing for slope failure (local and global), including under the existing driveway on the applicants' property.

The authority's geotechnical engineers carried out a site visit on 28 June 2018 and noted the following.

- The timber retaining wall appeared in generally good condition, with no indication of significant displacement of the timber poles. Ground anchors were sighted at the surface of the retained slope.
- Matting across the retained slope was not secured adequately, with restraining pins easily removed by hand.
- The retained slope is overgrown, impeding assessment of historic shallow failures. However, the surface of the slope is uneven and hummocky, which is indicative of relatively shallow downslope movement.
- On the applicants' property, cracking along the driveway is generally parallel to the top of the slope, approximately 9m long and approximately 2.5m from the top of the slope.

The authority's engineer carried out a slope stability analysis, which found that the critical Factor of Safety for a shallow failure for a static case was 1.16, and global failure was 1.40. The slope stability analysis results for the embankment indicated that global stability is anticipated to be close to an acceptable static design case, and the retaining wall at the toe of the slope, while undersized, is expected to perform adequately to support the overall slope. However, the issue of shallow instability above the retaining wall does not appear to have been sufficiently addressed by the installation of the earth anchors and erosion matting.

### **Conclusions and recommendations**

From the site visit and analysis, the authority's engineers made the following conclusions.

- The slope is generally at a 45° angle, with a hummocky appearance typical of shallow slope instability.
- The installed erosion matting is loose and appears to have been insufficiently pinned to the slope.
- Geotechnical investigations at the crest of the slope indicate the subsurface conditions generally comprise non-engineered fill overlying Holocene alluvial deposits.
- Factors of Safety for a shallow failure above the toe of the retaining wall are close to 1.0, indicating marginal stability. This will need to be addressed to improve the slope stability to at least a Factor of Safety of 1.5. The installation of the earth anchors is considered to have made little improvement to overall stability, due to their limited capacity, localised

effect, the length of the anchors and the presence of low-strength, wet non-engineered fill at the crest of the slope.

- The crack along the applicants' driveway appears to increase periodically and this 'stick-shift movement' supports the conclusion that the shallow slope stability of the embankment is marginal and driven by rainfall conditions.

The report recommends that additional works be completed to remediate the slope to satisfy long-term performance requirements and ensure compliance with the Building Code. The authority's engineer suggested the following remedial work.

Option	Comments
1) Do nothing	Inadequate shallow stability and ongoing creep expected, but catastrophic failure unlikely.
2) [Earth anchors]	[Earth anchors] (grouted galvanised steel bars) inclined at 10-15° to the horizontal could be installed to reinforce the slope. There may be a requirement to install these beyond the property boundary.
3) Mid-slope row of pile	Installation of a row of bored piles approximately half-way up the slope will increase slope stability and prevent further slope movement.
4) Rockfill toe buttress	Installation of a rockfill toe buttress over the existing retaining wall and lower slope to provide toe support to the affected area.

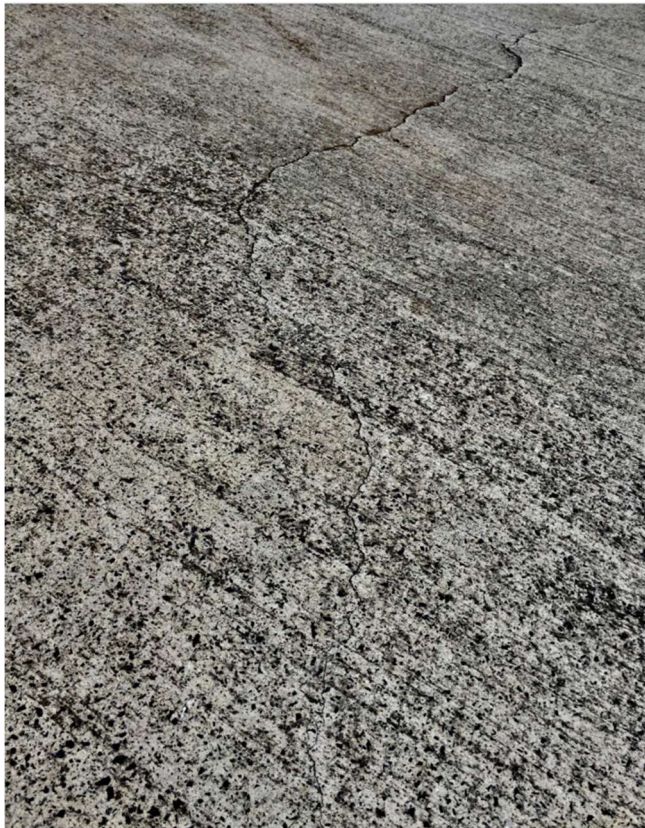
The authority's engineer also recommended that with all the above options drainage works should be incorporated into the solution, to limit the build-up of pore water pressures within the slope. The current erosion matting appears to be in poor condition and will need to either be replaced or remediated and pinned to the slope with galvanised steel pins, plus galvanised 'hog ties' to pin the sheets of the matting together.

## Appendix B

### Selected photographs taken 25 September 2016 by the applicants



**Photographs dated 3 March 2017**



**Photograph dated 11 September 2017**

