



Determination 2021/004

Regarding the proposed decision to grant a building consent conditional on a natural hazard being recorded on the property title for 76 Kaiteriteri-Sandy Bay Road, Kaiteriteri, Motueka

Summary

This determination discusses the correct interpretation of the natural hazards provisions in the Building Act (sections 71 to 74). It considers whether measures to mitigate a rockfall natural hazard constitute “adequate provision” to protect the land and buildings from the hazard.

1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004 (“the Act”) made under due authorisation by me, Katie Gordon, National Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.¹
- 1.2 The parties to the determination are:
 - the owners of 76 Kaiteriteri-Sandy Bay Road, Kaiteriteri, Motueka (“the property”), in their capacity as trustees of HMB Trust, who applied for the determination
 - Tasman District Council (“the authority”), carrying out its duties as a territorial authority or building consent authority.
- 1.3 This determination arises from the authority’s proposed decision to grant a building consent for the construction of a dwelling on the owners’ property subject to the consent being notified to the Registrar-General of Land under section 73 of the Act (“a section 73 notice”). The owners consider that they have made adequate provision to protect the land and buildings from the natural hazard in terms of section 71(2) of the Act, and, accordingly, the authority cannot require a section 73 notice as a condition of the building consent.
- 1.4 Under section 177(1)(b) and (2)(a) of the Act, the matter to be determined is, therefore, the authority’s proposed decision to grant the building consent subject to a section 73 notice. In making this determination, I must consider whether adequate provision has been made to protect the land and buildings from the natural hazard in terms of section 71(2)(a) of the Act.

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

- 1.5 Pending the outcome of this determination, and in order for the building work to proceed, the parties agreed to a building consent with a section 73 notice being granted. For this reason, and in accordance with section 188 of the Act, I have determined whether the authority's decision to grant the building consent should be confirmed, reversed or modified.
- 1.6 In making this determination, I have considered the information and arguments provided by the parties. I have not considered any other aspects of the Act or Building Code beyond those required to decide the matter to be determined.
- 1.7 Unless otherwise stated, references in this determination to sections are to sections of the Act, and all references to clauses are to clauses of the Building Code.

2. The building work and background

- 2.1 The owners are constructing a four-bedroom split-level dwelling on the property (Lot 2 DP 6300).
- 2.2 The property is a roughly rectangular 1671m² site, extending from the base of a hillside at the seafront in Honeymoon Bay, Kaiteriteri, to just short of the hill's ridge. The hillside has slopes that are typically between 35° and 45° and extend upwards for approximately 25m before reaching the neighbouring property above. The face of the slope incorporates areas of exposed rock and surface boulders, surrounded by soil, and regenerating bush.
- 2.3 The dwelling is located in the northern corner of the property, adjacent to the north-western boundary, and is accessed via a driveway leading from a private road on the property's northern corner. The dwelling is being constructed in two stages, with the first stage already largely complete.
- 2.4 In 2012, the owners engaged a firm of geotechnical and civil engineers ("the owners' engineer") to investigate the property and prepare a geotechnical report. The report, dated March 2012 ("the 2012 report"), detailed the geological setting of the property, assessed the natural hazards present, and made recommendations for developing the property and addressing the rockfall hazard. The main provisions of the 2012 report, for the purposes of this determination, are as follows:
 - With respect to the geology of the property it is underlain by deeply weathered Separation Point granite, with the granite ranging from moderately strong, moderately weathered to extremely weak, completely weathered rock. The depth of weathering decreases from west to east across the property, and there are areas of "slightly weathered rock exposures and surface boulders with a minor depth of residual soil".
 - The "geotechnical hazards that could possibly affect the [property] are slope instability, seismicity and rockfall", but there was no evidence of "larger scale instability" either on the property or in the immediate area. Although there are no active faults in the area, it was within a "high seismicity region", and the "retaining structure" would need to be designed to take this into account.
 - The surface boulders scattered across the property presented a rockfall hazard, with heavy rain events and earthquakes likely to dislodge the rocks and boulders from the slope. The development of the property needed to address this hazard.
 - The solution proposed to protect the building site from the rockfall hazard was:

by either securing the face via anchored rockfall mesh or removing the loose rocks/boulders and installing debris catch fences across the slope above the [building] site.

- The debris catch fences should be designed by an engineer, and the removal of any rocks or boulders should also be at the engineer's direction. All excavation work should be monitored by the engineer, and all cuts retained unless the engineer considered it unnecessary.
- 2.5 The authority granted two resource consents in 2012, for the dwelling (RM120514) and the earthworks associated with it (RM120512). A condition of the latter consent was that mitigation measures must be installed to address the rockfall hazard present above the building site, in accordance with the owners' engineer's 2012 report.
- 2.6 The rockfall mitigation measures were subsequently constructed by a third-party ground anchor installation company ("the installer"), with construction monitored by the owners' engineer. The work involved restraining individual boulders in place via anchors and cables, restraining the larger area of boulders on the east end of the slope via face mesh and anchors, and constructing a 1.5m high catch fence along part of the upper boundary to catch rocks from a "minor source area" on the neighbour's property above. No building consent was applied for or granted for this work.
- 2.7 The authority granted a building consent (no. 170505) for the first stage of the building work in March 2017. This stage involved constructing a 70m² garage and retaining walls. This consent was granted without making it subject to a section 73 notice. The work covered by this building consent was largely completed in 2017 and 2018, with some work held back until after the second stage of the work has been completed.
- 2.8 The owners' engineer provided a further report dated 17 January 2018 ("the 2018 report"). The 2018 report describes the rockfall hazard present on the owners' property, noting:
- The rockfall source area extends across the slope and includes a small area on the neighbouring property above. Individual or clusters of rocks that have potential to dislodge during extreme weather events or ground shaking were identified.
- 2.9 The 2018 report also describes the rockfall mitigation measures that have been installed, and notes regarding the rockfall catch fence:
- The rockfall fence has been designed to deform while arresting boulders and will likely require repair after an event. With the localised source area immediately above the fence the potential impact energy and bounce height is limited.
- 2.10 The 2018 report concludes:
- The rockfall mitigation measures installed have been specifically designed to mitigate the rockfall hazard to the dwelling below. The measures are considered appropriate for the situation. Maintaining of a dense cover of vegetation across the slope will also assist in mitigating of the hazard.
- 2.11 Attached to the 2018 report were various plans, drawings and calculations relating to the rockfall mitigation measures, and a Producer Statement – Construction (PS3) issued by the installer confirming that the work had been carried out in accordance with the owners' engineer's design.
- 2.12 On 6 April 2018, the authority issued a "territorial authority notification" for the property. The notification stated that the authority had no records of the property being "affected by flooding, land instability, land contamination or specific

earthquake hazards”. However, regarding natural hazards the notification also stated that (among other things):

- the soils at this property were “deeply weathered granites” and would be susceptible to “severe erosion when exposed, such as during earthworks or following vegetation removal”
- there may be slope failure on the steeper slopes if there is significant and prolonged rainfall, and as a result stormwater runoff would need to be carefully managed.

2.13 On 29 August 2019, the owners applied for a building consent for the second stage of the building work, to construct the rest of the dwelling. This building consent is the subject of this determination.

2.14 The authority reviewed the application and advised the owners that it proposed to issue the building consent subject to a section 73 notice. In making this decision, the authority sought internal technical advice from its Senior Resource Scientist – Hazards (“the authority’s scientist”). The authority advised the owners in a letter dated 18 September 2019 that the construction of the dwelling relied on the rockfall mitigation measures “remaining in place and fit for purpose (i.e. maintained in a functional condition)”, and that:

The land on which the building is located remains subject or likely to be subject to natural hazard (rock fall, albeit subject to mitigation measures that will require ongoing maintenance) in terms of Section 71(3)(d) [sic] of the Building Act and therefore Sections 72-74 apply.

2.15 On 19 September 2019, the owners’ engineer provided a Producer Statement – Design (PS1) and Producer Statement – Construction Review (PS4) for the rockfall mitigation measures, certifying their compliance as an alternative solution with clauses B1 Structure and B2 Durability.

2.16 On 1 November 2019, the authority issued a certificate of acceptance (CA191203) for the rockfall mitigation measures, accepting their compliance with clause B1.3.1 and B.1.3.3, but excluding clause B2.

2.17 The owners objected to the authority’s proposal to grant the building consent with a section 73 notice. The parties held a meeting on 15 November 2019 where it was agreed that they would apply for a determination about the “validity” of the authority’s proposed approach.

2.18 The Ministry received the application for a determination on 25 November 2019. As the matter to be determined concerned the section 73 notice rather than Building Code compliance of the building work, the Ministry subsequently liaised with the parties as to the possibility of a section 183 direction reversing the suspension of the authority’s power to grant the building consent. The owners sought a section 183 direction, as it would enable the building work to proceed during the determination process, and the Ministry made the direction on 24 April 2020.

2.19 The authority granted the building consent for the second stage of the building work on 14 May 2020 (Building consent no. 191097: Construct new dwelling with Masport freestanding wood burner (Stage 2)). It was granted under section 72, and the Register-General of Land was duly notified, on the understanding that whether the relevant entry on the property title remains is subject to the outcome of this determination.

3. Submissions and draft determination

Owners' submissions

3.1 The owners provided a submission with the application for a determination, dated 25 November 2019, and provided further submissions on 11 December 2019, 28 January 2020, and 1 July 2020. The owners are of the view the building consent for the second stage of the building works should be granted without a section 73 notice. This is because the rockfall mitigation measures had been carried out in accordance with the condition in the resource consent, and a certificate of acceptance issued for the work. Therefore, adequate provision has been made in terms of section 71(2).

3.2 The other main points made in the owners' submissions are as follows:

- The areas where the rocks are located are in undisturbed natural bush and isolated from the building platform. The building platform has been progressively reduced and is now limited to the lower slope. The owners have undertaken to carry out further planting of the slope. All excavated cuts made to the owners' property have been retained.
- The rockfall mitigation measures have been designed to last for "the life of the building" and the authority has accepted that it is fit for purpose through the resource consent and the certificate of acceptance. The authority cannot now decide these measures are inadequate.
- The authority's assessments (in the resource consents) of the potential risk of rockfall on the owners' property have all found the risk to be "no more than minor" or "extremely small". The rockfall mitigation measures have mitigated the hazard and minimised the minor risk.
- The authority's main concern appears to be the requirement to maintain the debris catch fence, but maintenance is outside the authority's jurisdiction with respect to compliance.
- The authority has also stated that a section 73 notice is required to document the presence of the natural hazard for future owners, but there is already adequate detail on the property file. In addition, the authority did not make the earlier building consent (for the first stage of the building work) subject to a section 73 notice, so it should not do so now.
- The owners inspect the rockfall mitigation measures at least bi-monthly and particularly after an earthquake event to ensure there is no movement.

Authority's submissions

3.3 The authority did not make a submission in relation to the application for a determination.

3.4 In an email dated 6 December 2019, the authority provided further advice from the authority's scientist. This advice repeated the earlier advice provided to the owners in the authority's letter of 18 September 2019, that the land where building work is located remained subject or likely to be subject to a natural hazard. The authority's scientist stated that this advice had been given on the basis that:

... the proposed mitigation of [the rockfall hazard] was sufficient to progress past section 71(1) and (2) of the Building Act. That is, whilst the land is subject to natural hazard (primarily falling debris), the combination of removing some rocks, the securing in place of other rocks by way of a mesh anchored to the face and/or wire ropes

securing individual boulders and construction of a benched debris catch fence is considered to provide adequate provision to protect the land and proposed building work (in terms of the Building Act).

In terms of section 72 it was likewise considered that the proposed mitigation was sufficient and therefore appropriate for Council to grant building consent on land that is subject to natural hazard (falling debris). The land in question (i.e. the site of the building works) is still considered to be subject to natural hazard albeit it with the hazard mitigated sufficiently that building consent can be granted. Where building consent has been granted on land subject to natural hazard (via sections 71 and 72) Council must require (under section 73) that a notice of the natural hazard be registered on the property title.

- 3.5 In an email dated 10 January 2020, the authority accepted that this advice is unclear in places, but relied on the authority's scientist's conclusion that a section 73 notice was required.

Draft determination

- 3.6 On 23 November 2020 a draft of this determination was issued to the parties for comment.
- 3.7 On 24 November 2020 both parties accepted the draft determination. The owners advised the Ministry that the certificate of acceptance in relation to the rockfall mitigation measures required amendment to include clause B2 Durability. The authority advised that the certificate of acceptance would be amended, following the issue of the determination, to include compliance with clause B2.

4. Legislation

- 4.1 Under section 49(1), a building consent authority must grant a building consent if satisfied that building work complies with the Building Code. However, if the building work is on land that is subject to a natural hazard, the provisions relating to natural hazards in sections 71 to 74 are relevant.
- 4.2 Under section 71, a building consent authority must refuse to grant a building consent for work on land subject to certain natural hazards unless the authority is satisfied that the land, building work, or other property will be protected or that any damage will be restored. However, a building consent refused under section 71 must be granted under section 72 if certain conditions are satisfied.
- 4.3 Section 71(1) provides:
- A building consent authority must refuse to grant a building consent for construction of a building, or major alterations to a building, if –
- a) the land on which the building work is to be carried out is subject or is likely to be subject to 1 or more natural hazards; or
 - b) the building work is likely to accelerate, worsen, or result in a natural hazard on that land or any other property.
- 4.4 Section 71(2) provides that subsection (1) does not apply if adequate provision will be made to protect the land or building work from the natural hazard, or to restore any damage to land or other property as a result of the building work. It states:
- Subsection (1) does not apply if the building consent authority is satisfied that adequate provision has been or will be made to—
- (a) protect the land, building work, or other property referred to in that subsection from the natural hazard or hazards; or

- (b) restore any damage to that land or other property as a result of the building work.

- 4.5 Section 71(3) sets out the types of natural hazards that sections 71 to 74 apply to, and these include falling debris (section 71(3)(b)).
- 4.6 Under section 72, a building consent authority must still grant a building consent for building work in certain circumstances, even though the land on which the work is to occur is subject to one or more natural hazards.
- 4.7 Section 73 sets out the conditions that building consent authorities must include in a building consent when it is granted under section 72, including notification of the consent to the Registrar General of Land.
- 4.8 Section 74 describes the steps that must be taken after notification, including in circumstances where the building consent authority determines that a notification is no longer required.

Purpose of the natural hazards provisions (sections 71 – 74)

- 4.9 The purpose of the natural hazards provisions is to protect building work, land and other property from the effects of natural hazards by placing limits on the granting of building consents for building work undertaken on land that is subject to a natural hazard.
- 4.10 The legislative policy of the provisions was discussed by the Court of Appeal in *Logan v Auckland City Council*². In that case the Court considered the interpretation of, and relationship between, the equivalent of sections 71 and 72 in the former Act (the Building Act 1991). The Court explained the policy in the following terms (note that I have changed the legislative references to reflect the current Act):
- [31] [Our analysis of the construction of sections 71 and 72] reflects an understandable legislative policy that where a building is to be constructed or major alterations to a building are to be made, it is not reasonable to issue a building consent as [a matter] of course unless adequate provision is made to protect the land concerned as well as the building work itself from the listed hazards. And if that requirement cannot be satisfied, [section 72] goes on to provide the flexibility to allow for the issue of a building consent if the set requirements of paras (a), (b) and (c) of [section 72] are met with notice to the world then being given through the entry on the title and with consequential exemption from civil liability of the [building consent] authority under [section 392(3)]. Significantly, that exemption protects the [building consent] authority against being charged with issuing a building consent in the knowledge that either the building or the land was or was likely to be subject to damage (or inundation) arising from the listed hazards.
- 4.11 Accordingly, the provisions ensure natural hazards are taken into account whenever a building consent is considered. In circumstances where adequate provision to protect the land or building work from the natural hazard cannot be made, but the building work will not accelerate or worsen the natural hazard, the provisions serve to:
- place a notice on the record of title for the property, so that future purchasers and other interested parties are made aware of the natural hazard concerned and that the building consent has been granted under section 72

² *Logan v Auckland City Council* (2000) 4 NZConvC 193,184.

- give a building consent authority certain protections from liability, under section 392 of the Act, relating to its decision to grant a building consent despite the natural hazard.³

The natural hazards decision tree

- 4.12 In the course of preparing several past determinations, a natural hazards decision tree has been developed to clarify the steps involved in applying the natural hazards provisions. A copy of this tree is appended to this determination as Appendix A.
- 4.13 It is important to note that the natural hazards decision tree is a simplified tool and there will be a number of factors that need to be considered at each step of the process in any given case.

5. Discussion

Application of section 71

- 5.1 The matter to be determined is the authority's proposed decision to grant the building consent subject to a section 73 notice. The authority is of the view that a section 73 notice is required. The owners contend that such notice is not required because they have "satisfied [the adequate provision requirement in] section 71(2)".
- 5.2 Following the process outlined in the natural hazards decision tree, the first two questions that need to be considered are whether:
- the building work would comply with the Building Code if there was no natural hazard present
 - the building work involves construction of a new building – section 71(1).
- Both of these questions are satisfied in the current case, as there is no suggestion that the building work covered by the building consent is non-compliant.
- 5.3 There is likewise no suggestion that the building work covered by the building consent will accelerate, worsen or result in a natural hazard on the owners' land or another property. Accordingly, section 71(1)(b) does not apply.
- 5.4 This brings us to the question as to whether the land where the building work is being carried out is subject to, or is likely to be subject to, a natural hazard – section 71(1)(a).
- 5.5 The owners' engineer's reports are clear that there is a risk of rockfall on the property, especially following seismic or extreme weather events. The resource consent requiring the rockfall mitigation measures was granted, and the measures themselves have been designed and constructed, on this basis. The parties, therefore, appear to agree that the land is subject or likely to be subject to a rockfall hazard.
- 5.6 However, previous determinations have established that it is not sufficient that the property in general is likely to be subject to a natural hazard; the land affected by the hazard must be that where the building work is being carried out. For the purpose of section 71, the land in question is the land that is "intimately connected" with the

³ Section 392(2) and (3) provide that if a building consent is issued subject to notification under section 73, and the building is damaged by the natural hazard, then the building consent authority is not liable in any civil proceedings.

building work⁴. Whether the land where the building work is being carried out is subject to a natural hazard depends on:

- the size of the property relative to the area occupied by the building work
- the position of the building work on the property relative to the hazard
- the extent of the property affected by the hazard in relation to both the building site and the property as a whole.

5.7 Considering these matters in relation to the owners' property, it is my view that the land where the owners' dwelling is being constructed, if left unprotected, would be likely to be affected by any rockfall. The building site is at the base of a steep slope. While much of that slope is covered with regenerating bush, I consider that the size of some of the boulders that could potentially form part of any fall, combined with the degree of the slope, mean that the vegetation would be inadequate to prevent the rockfall following its natural course to the bottom.

5.8 Previous determinations have established that section 71 requires an assessment of whether the effect of a natural hazard will be more than minimal or trivial, with respect to the likelihood of a given natural hazard occurring.⁵ In this case, I consider that the effects of any such rockfall, should it occur, would be more than minimal or trivial. A large rock or boulder, rolling or falling down a steep slope, could cause significant damage, both to buildings and people. There is no flat area or space at the bottom of the slope on the owners' land where a falling rock could lose momentum. If such a rock were to fall, and remained unstopped, it would fall straight onto the owners' building site, and the dwelling once completed.

5.9 Accordingly, I consider that the requirement in section 71(1)(a) is met in the current case. The owners' land where the building work is being carried out is likely to be subject to a natural hazard, and the effects of such a hazard would be more than minimal or trivial.

Whether adequate provision has been made to protect the land and building work

5.10 The next question to consider is whether adequate provision has been or will be made to protect the land and building work from the natural hazard under section 71(2)(a). If adequate provision has been made then the authority cannot make the granting of a building consent conditional upon a section 73 notice.

5.11 Both the High Court and the Court of Appeal have considered what constitutes adequate provision, in relation to the predecessor of sections 71 to 74 (section 36 of the Building Act 1991). In *Auckland City Council v Logan*⁶, Hammond J in the High Court stated (note that I have changed the legislative references to reflect the current Act):

[48] The word "protect" is not a term of art, nor does it have any special meaning in [section 71(2)]. It has its ordinary, everyday meaning: to guard against, or take care of. On this view, the statutory obligation is not just to do something about the results of an inundation that has in fact occurred, it is to protect against the inundation of the site itself where (at least in this case) the building and the site are intimately connected.

⁴ See, for example, Determination 2018/057 Regarding the decision to grant a building consent subject to notification under section 73 for building work on land subject to natural hazards (22 November 2018).

⁵ For example, Determination 2013/081 Regarding the issue of a building consent subject to a section 73 notice for a house on land subject to inundation (23 December 2013), and Determination 2017/048 Regarding the decision to grant a building consent subject to notification under section 73 for building work on land subject to a natural hazard (30 June 2017).

⁶ *Auckland City Council v Logan* HC Auckland AP77/99, 1 October 1999.

5.12 On appeal, the Court of Appeal in *Logan v Auckland City Council* stated (with current Act references):

[33] We should add that in determining whether the statutory risk threshold under [sections 71(1)(a) and 72(b) – that the land on which the building work is to be carried out is subject or is likely to be subject to a natural hazard] has been reached, and what will be adequate provision to protect the land under [section 71(2)], given, too, **that adequate provision for protection does not require the elimination of any possibility in all conceivable circumstances of inundation or other relevant hazards, a territorial authority can be expected to take a common-sense approach.**

[emphasis added]

5.13 Therefore, assessing whether adequate provision has been made in terms of section 71(2)(a), requires a common-sense approach, keeping in mind that there is no requirement to totally eliminate the hazard.

5.14 The owners have had significant rockfall mitigation measures installed on the property. These measures include:

- anchors and cables to restrain individual boulders in place
- mesh and anchors across the eastern end of the slope where there are larger areas of boulders on the slope’s surface
- 1.5m high catch fence along part of the property’s upper boundary to catch smaller boulders and debris from the neighbour’s property above.

5.15 I note that the owners’ engineer has identified the area on the neighbour’s property being contained by the fence as a small or minor source area for potential rockfall. In addition, the fence is located close to both the rockfall area and the property boundary, and any rocks or other debris that did dislodge during an event would not travel far, or gather much momentum, before they were restrained by the fence. Given the short distance between the source of any rocks and the catch fence, I consider it likely that any loosened rocks and debris would be rolling at this stage, having traversed an insufficient distance to gain the energy to bounce, and therefore it is unlikely there would be any damage to the land.

5.16 The much larger risk to the owners’ property comes from the larger boulders scattered across the slope within the property itself. These boulders are restrained either by mesh and anchors across the entire face of the slope or individual anchors.

5.17 The owners’ engineer has detailed the rockfall mitigation measures in the 2012 and 2018 reports, and expressed an opinion that the measures are “considered appropriate for the situation”. The owners’ engineer has also provided a PS1 and PS4 to this effect, certifying the compliance of the rockfall mitigation measures with clauses B1 and B2.

5.18 The authority’s scientist appears to have agreed with the opinion of the owners’ engineer. The authority’s scientist is quoted as advising while the land remains subject to a natural hazard, the rockfall mitigation measures put in place are “considered to provide adequate provision to protect the land and proposed building work (in terms of the Building Act).” The authority’s scientist goes on to state:

In terms of section 72 it was likewise considered that the proposed mitigation was sufficient and therefore appropriate for [the authority] to grant building consent on land that is subject to natural hazard (falling debris). The land in question (i.e. the site of the building works) is still considered to be subject to natural hazard albeit it with the hazard mitigated sufficiently that building consent can be granted.

5.19 The authority's scientist went on to conclude:

Where building consent has been granted on land subject to natural hazard (via sections 71 and 72) [the authority] must require (under section 73) that a notice of the natural hazard be registered on the property title.

5.20 As observed above, the authority accepts its scientist's conclusion that a section 73 notice is required. I am of the view that the conclusion of the authority's scientist misstates the operation of sections 71 to 74, and that the correct approach is set out by the Court of Appeal in *Logan v Auckland City Council*⁷. Just because land is subject to a natural hazard does not mean that any building consent granted in relation to it must carry a section 73 notice. There are situations where such a notice is not required, for example where adequate provision has been made to protect the land and buildings from the hazard.

5.21 I note that the authority has issued a certificate of acceptance for the rockfall mitigation measures. In doing so, the authority has accepted the adequacy of these works in terms of clause B1.3.1 (the works have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing throughout their lives) and clause B1.3.3 (account has been taken of the physical conditions likely to affect the works including imposed loads, earthquake and impact).

The need for ongoing maintenance

5.22 In the authority's view, while provision has been made to protect the land and buildings, "the construction of the dwelling relies on these [rockfall mitigation measures] remaining in place and fit for purpose (i.e. maintained in a functional condition)"⁸. It appears this is the reason the authority specifically excluded compliance with clause B2 Durability from the certificate of acceptance issued for the rockfall mitigation measures.⁹

5.23 I understand that the authority expressed concerns about the ongoing maintenance of the rockfall catch fence at their meeting with the owners on 15 November 2019.¹⁰ As far as I am aware, the authority has not expressed any concerns about the boulder restraints, although it is possible that they too could be damaged, for example, following an earthquake or extreme weather event.

5.24 The owners have advised the Ministry that there is a bi-monthly inspection regime in place for the rockfall mitigation measures, and that they also inspect the measures after earthquake events.

5.25 There are many instances where building elements, that are compliant at the time they are constructed, will require ongoing inspection and maintenance to ensure this compliance continues throughout their design lives. The Building Code deals with this through clause B2, which is based on the building elements continuing to achieve the relevant performance requirements of the Code "with only normal maintenance"¹¹. What is "normal maintenance" depends on the particular facts in each case.

⁷ At [31].

⁸ This view was expressed by the authority by way of letter dated 18 September 2019 to the owners.

⁹ The authority has subsequently advised, in its response to the draft of this determination, that the certificate of acceptance will be amended to include clause B2. However, at the time the certificate was issued, clause B2 was excluded.

¹⁰ I note the owners' engineer says the rockfall catch fence has been designed to deform while arresting boulders and will likely require repair after any such event.

¹¹ Refer clause B2.3.1.

- 5.26 As a building element, natural hazard mitigation measures also require regular inspection and maintenance. In Determination 2019/067¹², for example, I considered a relatively complex system for protecting a coastal property from the risk of inundation. The system involved a seawall, sumps, strip drains and discharge drains with non-return valves for seawater. All of these elements would require inspection and maintenance if they were to function as intended during an inundation event. Even so, I was satisfied adequate provision was made to protect both the land and building. In my view, an authority cannot find that the threshold for adequate provision in section 71(2)(a) is not met simply because regular inspection and maintenance is required, or because repairs may be needed following natural hazard events.
- 5.27 The Ministry has produced guidance on the design considerations for “passive rockfall protection structures” (such as that installed on the owners’ land), including for their long-term inspection and maintenance.¹³ It is noted in the guidance that regular inspections and maintenance are integral to maintaining the optimal performance of these structures throughout their intended design life. It suggests that an inspection and maintenance programme be prepared for the owner by the structure’s designer, with the frequency of the inspection depending on “the structure type, anticipated frequency of rockfall events, and general site conditions”.
- 5.28 The guidance incorporates a table setting out the types of inspection that should occur and their suggested frequency. This has been reproduced in Appendix B for the benefit of the parties. It includes regularly scheduled, post-event and source area inspections. The suggested frequency of these are as follows:
- regularly scheduled inspections: every 1 to 5 years, depending on the “anticipated rockfall frequency and corrosivity of environment”
 - post-event inspections: as required by rockfall or trigger event
 - source area inspections: every 5-10 years, or as warranted following rockfall or trigger event.
- 5.29 As noted above, the owners inspect the measures bi-monthly and following earthquake events. The owners could now formalise this by documenting their inspection and maintenance programme and lodging this with the authority for inclusion on the property file. Responsibility for ensuring the programme is followed will rest with the property owner at the time. The inclusion of the programme on the property file should ease any concerns the authority has about a future owner being unaware of either the rockfall mitigation measures on the property or the need to inspect and maintain them. A copy of this determination should also be placed on the property file.

6. Conclusion

- 6.1 I consider that the requirement in section 71(2)(a) has been satisfied. Adequate provision has been made to protect the land and buildings from the rockfall hazard.

¹² Determination 2019/067 Regarding the decision to grant a building consent subject to notification under section 73 and whether the land, which is adjacent to a coastal estuary, is subject to a natural hazard (20 December 2019).

¹³ Ministry of Building, Innovation and Employment *Rockfall: Design considerations for passive protection structures* (2016). Retrieved from: <https://www.building.govt.nz/building-code-compliance/b-stability/b1-structure/rockfall-design-considerations-for-passive-protection-structures/>

6.2 As section 71(2) has been satisfied, it was not correct for the authority to grant the building consent under section 72. Instead, the building consent should have been granted under section 49. As a result, the authority cannot make the building consent conditional on the Registrar-General of Land being given notice of the consent under section 73 of the Act.

7. The decision

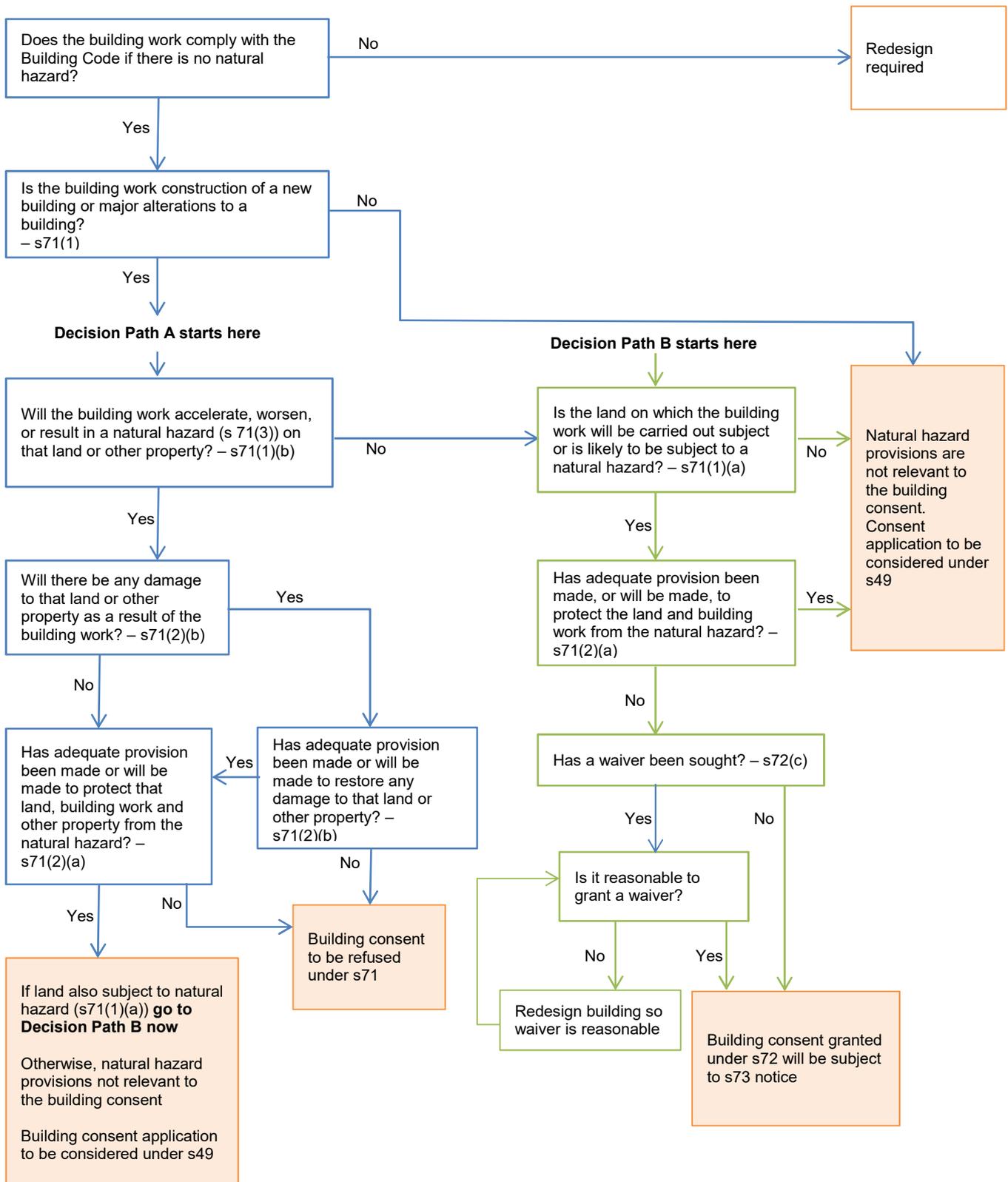
7.1 In accordance with section 188, I hereby determine that:

- the authority incorrectly proposed to grant the building consent under section 72 subject to a section 73 notice
- as the building consent was subsequently granted under section 72 subject to a section 73 notice (to allow the building work to proceed pending the outcome of this determination) that decision is modified so the building consent is considered to have been granted under section 49. The authority should now issue an amended building consent to the owners (without a section 73 notice) and notify the Registrar-General of Land under section 74 to have the entry relating to the building consent removed from the record of title for the property.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 26 February 2021.

Katie Gordon
National Manager, Determinations

Appendix A: Natural Hazards Decision Tree¹⁴



¹⁴ Note: this is a simplified tool developed to clarify the steps in applying the natural hazards provisions of sections 71 to 73 of the Act and there are a number of factors to consider at each step of the process.

Appendix B

Copied from the Ministry's guidance – *Rockfall: Design considerations for passive protection structures* (2016) p. 41:

Table 8: Inspection and Maintenance Considerations

TYPE OF INSPECTION	DESCRIPTION	SUGGESTED FREQUENCY
Regularly Scheduled	This should include removal of any accumulated debris, vegetation, inspection of mechanical components (eg posts, cables, anchors, netting, brakes, etc) and corrosion protection, and inspection and cleaning of any drainage works.	1–5 years, depending on anticipated rockfall frequency and corrosivity of environment.
Post-Event	This should include inspection of all components for damage, clean-out of any debris, and repair or replacement of any components damaged by the rockfall. The passive [rockfall protection system] should be returned to its intended design capacity following the maintenance.	As required by rockfall or trigger event.
Source Area	This should include visual inspection of potential rockfall sources to assess whether there have been any changes in condition, such as loosening or movement of blocks.	5–10 years, or as warranted following rockfall or trigger event.