



## Determination 2017/080

# The granting of a building consent for alterations to an existing building at 102 Dillon Street, Waihi Beach subject to notification that the land is subject to a natural hazard

### Summary

This determination concerns the natural hazards provisions of the Building Act in relation to alterations to a residential property that is subject to flooding. The determination considers the size of the flood event, whether the conditions under section 71(2) of the Act have been met, and whether the building consent for the alterations should be issued with notification under section 73.

### 1. The matter to be determined

- 1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004<sup>1</sup> (“the Act”) made under due authorisation by me, Katie Gordon, Manager Determinations, Ministry of Business, Innovation and Employment (“the Ministry”), for and on behalf of the Chief Executive of the Ministry.
- 1.2 The parties to the determination are:
  - the owner of the property, the Dallas-Parker Family Trust (“the applicant”)
  - Western Bay of Plenty 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 granting of a building consent for alterations to a house including the condition that the consent was to be subject to notification under section 73<sup>2</sup>. The authority is of the view that the land is subject to a natural hazard (inundation).
- 1.4 The matter to be determined<sup>3</sup> is therefore the authority’s exercise of its power of decision in granting the building consent under section 72 of the Act subject to notification under section 73. In making this decision I have considered whether the land is subject to a natural hazard, and if the land is subject to a natural hazard whether the building consent application has satisfied section 71(2).
- 1.5 In making my decision, I have considered the submissions of the parties, and the other evidence in this matter.

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<sup>1</sup> The Building Act, Building Code, Acceptable Solutions and Verification Methods, past determinations and guidance documents issued by the Ministry are all available at [www.building.govt.nz](http://www.building.govt.nz) or by contacting the Ministry on 0800 242 243.

<sup>2</sup> Unless otherwise stated all references to sections are to sections of the Act and all references to clauses are to clauses of the Building Code. The relevant sections of the Act are set out in Appendix A.

<sup>3</sup> Under sections 177(1)(b) and 177(2)(a) of the Act.

## 2. The building work

- 2.1 The building work consists of alterations and additions to the rear of a single-storey timber-framed house located on a site that slopes down from the street front to the rear (southwest) of the property.
- 2.2 The building work includes the addition of a new bedroom, kitchen, living room, and deck. The extension steps down from the floor level of the existing house (floor level 5.450m approximately), with the finished floor level of most of the extension at RL 4.225<sup>4</sup>.

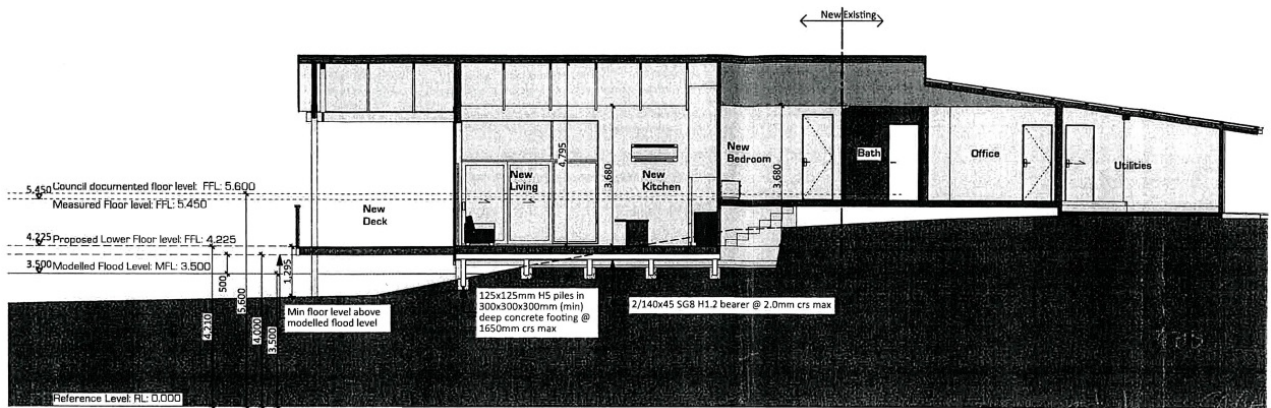


Figure 1: Section (not to scale)

- 2.3 The existing building is about 73m<sup>2</sup> in area. The proposed house extension is 50m<sup>2</sup> plus the additional deck area of 81m<sup>2</sup>.
- 2.4 The plans show a “flood zone” (which I take to be in relation to a 2% Annual Exceedance Probability (“AEP”) flood event<sup>5</sup>) at 3.5m RL, as shown in Figure 2 below. I have not received information for this property regarding flood events of a greater magnitude than 2% AEP.

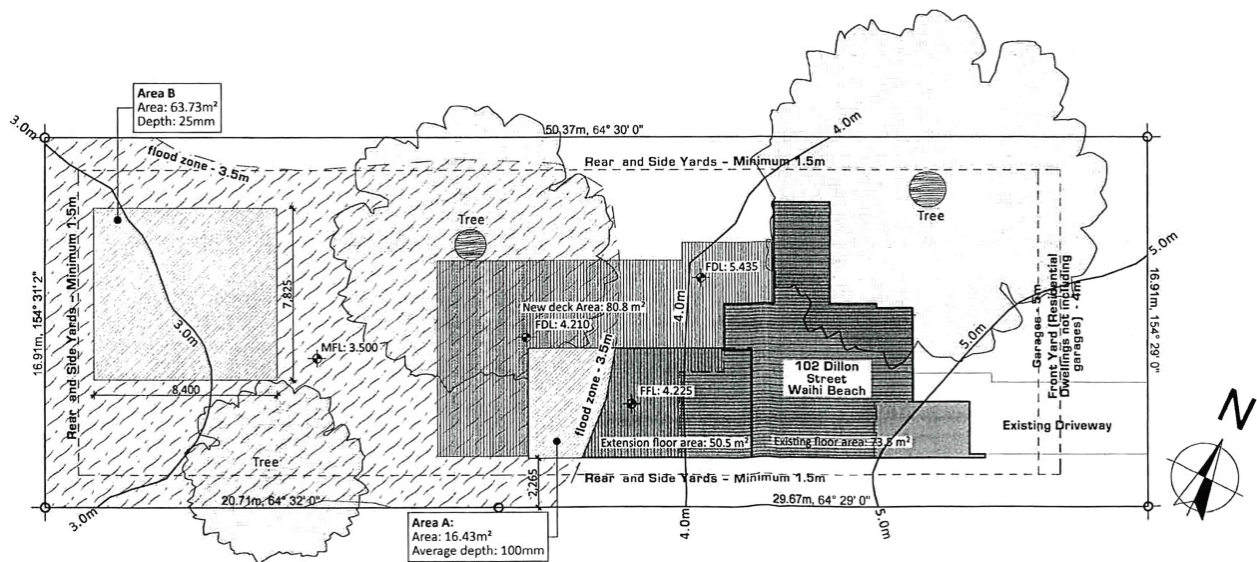


Figure 2: Site plan (not to scale)<sup>6</sup>

<sup>4</sup> Vertical heights are measured above (or below) a reference surface called a datum: in this case the Moturiki Datum

<sup>5</sup> The term ‘2% AEP’ means an event having a 2 percent probability of occurring annually. This is often referred to as a “50-year event”, and a 1% AEP as a “100-year event”.

<sup>6</sup> Note “Area B” on Figure 2 denotes an area where it is proposed to scrape off topsoil to a depth of 100mm

### 3. The background

- 3.1 Resource consent was granted on 29 October 2015, subject to conditions that included a requirement for the finished floor level (“FFL”) to be RL 4.225. Under the heading “Reasons for decision” it was noted:

The rear of the site has been identified as being potentially subject to flooding. The applicant proposes to construct additions to the existing dwelling which are located within an identified flood zone. It is proposed the dwelling will achieve a minimum floor level of RL4.225 Moturiki Datum, above the identified flood hazard.

- 3.2 On 23 May 2016 the authority wrote to the applicant’s architect regarding the application for building consent, advising that the land is subject to the natural hazard inundation, and that if the building consent was granted under section 72 of the Act then the authority was required by section 73 to notify the Registrar General of Land and an entry would be placed on the title.

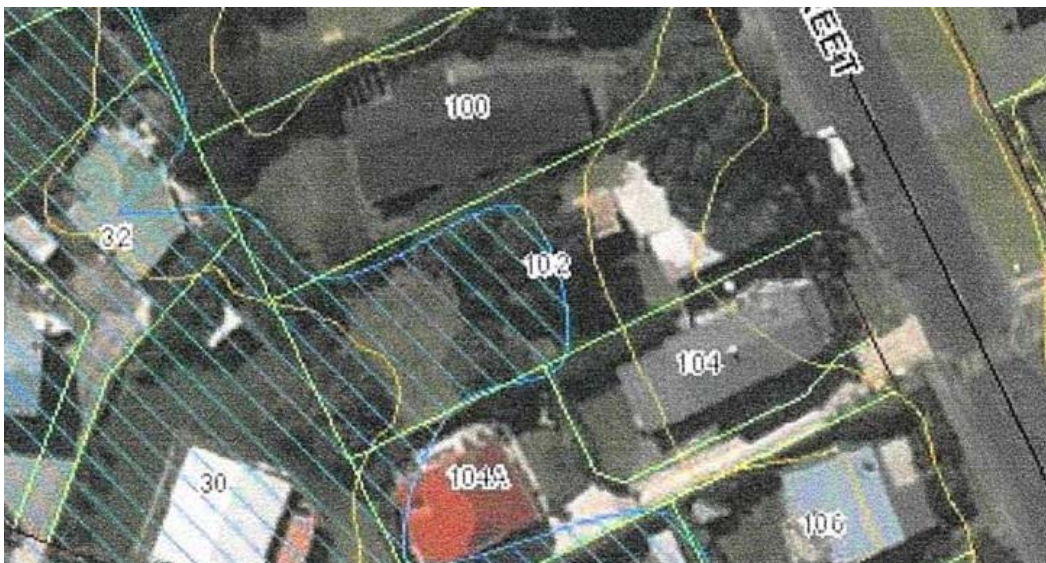
- 3.3 The authority stated:

Alternatively, the property owners can produce supporting documents or information such as professional opinion from an independent expert verifying that the natural hazard as indicated by the District Plan Maps is a highly unlikely event or with minor effect.

(I note here that if the inundation was found to be minor or trivial then it would not constitute a natural hazard for the purpose of sections 71- 74, and the authority could grant the building consent under section 49 of the Act without notification.)

### 3.4 The consultant’s report and continued correspondence

- 3.4.1 The applicant engaged a consultant who is a chartered professional engineer (“the consultant”) to review and respond to the authority’s letter of 23 May 2016. In a letter dated 10 July 2016, the consultant described the location of the extension, noting that the area in which the extension is proposed is marked as flood prone on the authority’s online Geographic Information System (“GIS”). The consultant included an image (see Figure 3 below), with hatching representing a “1 in 50 year flood event” (otherwise referred to as a 2% AEP flood event).



**Figure 3: Aerial view showing area of 2% AEP flood event hatched**

- 3.4.2 The consultant observed that the proposed extension took into account the identified flood zone by providing an elevated floor over the flood area, and the floor is to be supported on piles with no filling in the ponding zone. The consultant stated the proposed design resulted in no reduction in the site storage area and the effect of the building on the flooding would be negligible.
- 3.4.3 The consultant confirmed the following:
- Peak Flood Level of RL 3.5 for the nominated stormwater event.
  - Proposed Building floor level of RL 4.225 (725mm above the floor level and in excess of the [authority's] required freeboard of 500mm).
  - No filling is being undertaken on the site and there is no identifiable reduction in the available storage within the current site boundary.
  - The building construction is light weight timber framing with short timber piles, bearers and joists. Again this type of construction provides minimal intrusion into the floodable area, and will have an insignificant effect on mitigation storage.
  - Foundations and pile fixings are suitably sized and treated to meet the strength and durability requirements based on potential submersion in a large scale flood event (to the design ponding level of RL 3.5).
- 3.4.4 The consultant concluded that, based on a review of the drawings 'all of the conditions are met and ensure that the location of the building in the area proposed is appropriate and there are no adverse effects likely to occur'.
- 3.4.5 By email on 13 September 2016 the authority advised it had reviewed the consultant's report, but remained of the opinion that the consent should still be subject to notification under section 73. The authority confirmed that the building work would comply with the Building Code, but noted that 'the building is still subject to the natural hazard and the effect would not be minor'.
- 3.4.6 On 20 September 2016 the applicant signed a statement confirming that it was understood the building consent was for building work that is on land subject to a natural hazard and that the consent would be subject to notification under section 73.
- 3.5 The Ministry received an application for a determination on 14 June 2017.

## **4. The submissions**

### **4.1 The initial submissions**

- 4.1.1 The applicant provided a submission on 2 July 2017. The applicant was of the view that the building consent should not have been subject to notification under section 73 for the following reasons (in summary):
- The reasons given in the resource consent condition demonstrates that the authority considers the effect of the project with regard to the inundation to be less than minor. The consultant has confirmed this view.
  - With reference to Determination 2013/047<sup>7</sup>, the applicant is of the view the circumstances are similar: the proposed extension would not be likely to be subject to inundation, and adequate provision has been made to protect the land, building work and other property.

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<sup>7</sup> *Determination 2013/047 Regarding the refusal to grant building consent without a section 73 notice for a garage on land subject to inundation (20 August 2013)*

- The applicant referred to paragraph 6.3.1 of Determination 2013/047 and holds the view the circumstances in this case are similar in regards to:
  - the inundation being of temporary and minimal effect
  - there being no potential for affecting the land, the proposed building work or other property in such a way as to require protection, and
  - there being no potential for causing damage that will need to be restored.

4.1.2 The applicants provided copies of:

- drawings of the proposed building work
- correspondence between the parties
- a summary of events
- the consultant's report
- the resource consent decision
- a report titled "Coastal protection areas re-assessment" dated April 2015, prepared for the authority.

4.1.3 The authority acknowledged the application on 19 June 2017 but made no submission in response.

## **4.2 The draft determination and submissions in response**

4.2.1 A draft of this determination was issued to the parties for comment on 17 July 2017. The draft concluded that that the land was subject to inundation that was more than minimal or trivial and so the natural hazard provisions applied, and that as adequate protection had not been made to protect the land the authority was correct in issuing the building consent subject to notification under section 73.

4.2.2 In a response received on 31 July 2017 the applicant advised they did not accept the draft determination, and attached an article titled "Wave-assisted coastal flooding"<sup>8</sup>. The applicant submitted that the "flood zone" shown in Figure 2 was not the 2% AEP but rather was the 1% AEP level taken from the Coastal protection areas re-assessment report prepared for the authority, and the applicant is of the view that the inundation hazard is significantly less than the draft concluded. The applicant also considers the authority has been overly conservative in its delineation of the flood hazard zone.

4.2.3 The applicant disputed the interpretation in the draft determination of section 71(2) with regard to the protection of other property, setting out the view that the use of the word "or" means that protection is not required for both the land and the building work and implies some discretion may be exercised in requiring mitigation of the hazard. The applicant is of the view that it is unreasonable in this case to expect them to mitigate the hazard given the possible course of action would be to:

- construct the building such that it does not have an adverse effect on the hazard – which the applicant has done
- fill in the land so the land was above 3.7RL or higher and no longer subject to flooding – though this would likely have an adverse effect on flooding of neighbouring properties

<sup>8</sup> "Wave-Assisted coastal flooding | NIWA" Bell, Rob, and Giovanni Coco. (1 March 2005)

- major flood mitigation and stormwater management solutions throughout the area – which would be the responsibility of the authority.
- 4.2.4 The applicant referred to Determination 2013/047, noting that there had been no requirement to protect the land in that case and the consent could be issued without being subject to a section 73 notification. The applicant also referred to guidance issued by the Ministry of Environment, taking the view that this supported the applicant’s stance that there was no requirement to protect the land in this case.
- 4.2.5 The authority responded on 15 August 2017, accepting the draft without further comment.
- 4.2.6 In response to some of the points raised by the applicant in their submission, I note the following:
- The flood zone indicated in Figure 2 is from the authority’s GIS, which the authority subsequently confirmed was based on rainfall event modelling (refer paragraph 4.3.2 and paragraph 4.3.4).
  - The issue of interpreting the word “or” as used in the natural hazard provisions was raised in *Logan v Auckland City Council*<sup>9</sup> and considered in Determination 2017/048<sup>10</sup>. Although “or” is generally used when expressing an alternative, that is not the case when interpreting the conditions to be met in 71(2)(a). The conditions under section 71(2)(a) are for protection of land *and* the building work, *and* (where the circumstances mean it is relevant) other property<sup>11</sup>.
  - Determination 2013/047, referred to in the applicant’s submission, concerned a site where the inundation was of temporary and minimal effect, the inundation had no potential for affecting the land or the proposed building work or other property in such a way as to require protection. Determination 2013/047 concluded that section 71 did not apply because the land on which the building work was to be carried out was not subject to or likely to be subject to a natural hazard of a type that requires the application of section 71.

### 4.3 Further information and submissions received

- 4.3.1 On 28 August 2017 clarification was sought from the authority as to the basis for the flood zone areas shown on the GIS (refer paragraph 3.4.1 and Figure 3) and whether the natural hazard for which the section 73 notification was made was inundation from a rainfall event or from coastal inundation.
- 4.3.2 On 6 September 2017 the authority confirmed that the natural hazard considered is flooding by rain fall event, and that the flood zones on the GIS were from a stormwater modelling report and related to a 2% AEP event. The authority noted that a separate report was carried out for coastal hazards and it was this that had been cited by the applicant.
- 4.3.3 On 14 September 2017 the authority provided a copy of the most recent stormwater modelling report dated March 2017<sup>12</sup>, though it was noted that planning maps had yet to be updated to reflect the levels in this report. The report was forwarded to the applicant on the following day, and the application for determination was suspended to allow the applicant to review this information.

<sup>9</sup> CA243/99, 9 March 2000. [p 28, 29]

<sup>10</sup> 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)

<sup>11</sup> The condition requiring protection of other property is only required to be met in relation to section 71(1)(b) where the building work is likely to accelerate, worsen, or result in a natural hazard on any other property (i.e. the ‘other property referred to’ in section 71(1)).

<sup>12</sup> I note the design rainfall events include 2% AEP but not 1% AEP.

- 4.3.4 On 8 October 2017 the applicant advised that they accepted the flooding maps produced in the stormwater modelling report represent a 2% AEP, and noted that there was no information regarding water flow velocities. The applicant made no further comment regarding the determination.
- 4.3.5 On 17 October 2017 the parties were advised that the determination would be issued shortly and the parties needed to indicate an intention to make further submissions if they intended to do so. Neither party responded with any further comment.

## 5. Discussion

### 5.1 Is the land subject to a natural hazard?

- 5.1.1 Under section 71(1), 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.
- 5.1.2 In order to consider whether the authority correctly exercised its powers when it granted building consent subject to notification under section 73, I have to first consider whether, in terms of section 71(1)(a), the land on which the extension is to be constructed is subject to a natural hazard.
- 5.1.3 Based on the analysis in a previous determination (2013/047) the applicant has put forward the view that the inundation in this case is not a natural hazard, and therefore the building consent should not have been subject to notification under section 73.
- 5.1.4 Section 7 provides the term “natural hazard” has the meaning given to it by section 71. Section 71(3)(a) to (e) defines a natural hazard by the event occurring (in this case inundation) but does not give an indication of the extent of that event. This was previously considered in regards to inundation in Determination 2008/82:

6.2.9 Although section 71 [of the current Act] does not state what [magnitude of] event should be applied to situations subject to inundation, I consider that at least the 100-year event would be appropriate...”

I maintain the view that the 100-year (or 1% AEP) frequency of the event (or 1% AEP) referred to in Determination 2008/82 reflects the “likelihood” test in section 71(1) and I consider it is relevant in this case.

- 5.1.5 The reasons for concluding that section 71 requires an assessment of whether the effect of a natural hazard will be more than minimal or trivial are in line with the Court of Appeal decision in *Logan v Auckland City Council*<sup>13</sup>. In summary, the Court of Appeal’s comments made it clear that some judgment is required in determining when land will be subject to a natural hazard, that the provisions do not require the elimination of all [inundation], and that such judgments involve ‘a sensible assessment involving considerations of fact and degree’.
- 5.1.6 In this case the question to be answered is whether the hazard in a 1% AEP flood event on the site in question will be of a minimal or trivial effect such that it does not constitute a natural hazard.
- 5.1.7 Based on the details set out in paragraph 2 and the drawings provided, the relative level of flood water in a 2% AEP flood event on the property would be RL3.5. According to the contours shown on the site plan (see Figure 2), this means that the

<sup>13</sup> CA243/99, 9 March 2000.

modelled flood waters would reach a depth of over 0.5m at the rear of the property and taper off up the slope toward the extension. The flood zone shown on the same site plan (see Figure 2) indicates approximately half of the site would be subject to inundation, including an area where part of the extension and the deck are located.

- 5.1.8 I have not received any information regarding flood levels for a 1% AEP event for this site, nor have I received information regarding the anticipated duration, flow rate (if any), or whether flooding in a 1% AEP event is or is not likely to cause damage to the land. However, it must be assumed that, depending on the size of the flood basin, the land will be inundated to a greater extent in a 1% AEP event, than it will in a 2% AEP event.
- 5.1.9 Based on the information before me, I am of the view that the level and extent of inundation of the property in a 1% AEP event is likely to be more than minimal or trivial. As the natural hazard is more than minimal or trivial, the provisions under sections 71 to 74 of the Act apply.

## 5.2 Application of section 71(2)

- 5.2.1 Section 71(2) provides that if certain conditions are satisfied, section 71(1) does not apply:

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.

- 5.2.2 I must now consider whether adequate provision has been made to protect the land and building work from the natural hazard (71(2)(a)). The applicant seems to be of the view that as the building work is protected from the natural hazard, and the building work does not accelerate, worsen, or result in a natural hazard on that land or any other property, the conditions of section 71(2) have been met and the building consent should not be subject to notification under section 73. However the criteria in section 71(2)(a) is for protection of both the land and the building work, not just the building work.
- 5.2.3 The term “protect the land” in section 71(2)(a) and the extent to which the land must be “protected” from inundation has been considered by the High Court<sup>14</sup>, the Court of Appeal<sup>15</sup>, and in previous determinations.
- 5.2.4 “Adequate provision for protection of the land” from inundation does not mean section 71(2) requires the total elimination of the possibility of inundation (as the land would then no longer be subject to a natural hazard). The level of protection from inundation required to satisfy section 71(2) will be a question of degree and will need to take into account factors such as maximum depth, velocity, and frequency of occurrence, and the likely effects of the natural hazard on the land. That degree of protection is likely to be less than that required to protect buildings, although this will not be the case where there is a significant risk of erosion causing loss of support for the building.

<sup>14</sup> *Auckland City Council v Logan*, 1/10/99, Hammond J, HC Auckland, AP77/99

<sup>15</sup> *Logan v Auckland City Council* CA243/99, 9 March 2000.



- 5.2.5 There appears to be no dispute between the parties that adequate provision has been made in this case to protect the building work from the natural hazard and that the proposed building work complies with the Building Code. Previous determinations have taken the position that compliance with the Building Code will be accepted as “adequate provision” to protect the building work<sup>16</sup> and I remain of that view. Accordingly I accept that the condition under section 71(2)(a) to protect the building work has been met.
- 5.2.6 Although the building work has been designed in such a way as to protect the building work from the effect of inundation, the requirement to protect the land from the inundation must also be met for section 71(2) to apply. Floodwater is not expected to inundate the extension floor level in a 2% AEP, and the entrance to the property and the house from the street is unlikely to be inundated.
- 5.2.7 As noted in paragraph 5.1.9, I consider the level of inundation in this case to be greater than minor or trivial; the depth of the water at over 0.5m at the rear of the property in a 2% AEP event is significant, and likely to be greater in a 1% AEP event.
- 5.2.8 The building work proposed in this case will have no effect on the fact that the site will continue to be subject to inundation to this extent. The applicant has not pointed to any positive steps that could constitute “adequate provision to protect the land” from inundation as required by section 71(2)(a). I am therefore of the view that the condition under section 71(2)(a) to protect the land has not been met in this case.

### **5.3 Conclusion**

- 5.3.1 I conclude that as the building work is proposed to be carried out on land subject or likely to be subject to inundation, and adequate provision has not been made to protect the land from the natural hazard, the authority correctly exercised its powers in issuing the building consent subject to notification under section 73 of the Act.

## **6. The decision**

- 6.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the authority correctly exercised its powers of decision in granting the building consent subject to notification under section 73, and accordingly I confirm the authority’s decision.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 13 November 2017.

Katie Gordon  
**Manager Determinations**

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<sup>16</sup> See *Determination 2007/110 Building consent for a house on land subject to coastal hazards [6.4.5(a)]* (17 September 2007).

## Appendix A

A.1 The relevant sections of the Building Act 2004 discussed in this determination:

### **71 Building on land subject to natural hazards**

- (1) 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.
- (2) 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.
- (3) In this section and sections 72 to 74, natural hazard means any of the following:
  - (d) inundation (including flooding, overland flow, storm surge, tidal effects, and ponding):

### **72 Building consent for building on land subject to natural hazards must be granted in certain cases**

Despite section 71, a building consent authority that is a territorial authority must grant a building consent if the building consent authority considers that—

- (a) the building work to which an application for a building consent relates will not accelerate, worsen, or result in a natural hazard on the land on which the building work is to be carried out or any other property; and
- (b) the land is subject or is likely to be subject to 1 or more natural hazards; and
- (c) it is reasonable to grant a waiver or modification of the building code in respect of the natural hazard concerned.

### **73 Conditions on building consents granted under section 72**

(1) A building consent authority that is a territorial authority that grants a building consent under section 72 must include, as a condition of the consent, that the building consent authority will, on issuing the consent, notify the consent to,—

...

- (c) in any other case, the Registrar-General of Land.