Determination 2015/018

The refusal to issue a building consent for an outbuilding on land that the authority considers is subject to a natural hazard at 22 The Avenue, Otaki

1. The matter to be determined

1.1 This is a determination under Part 3 Subpart 1 of the Building Act 2004[1] ("the Act") made under due authorisation by me, John Gardiner, Manager Determinations and Assurance, 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 applicant, Quin Buildings Direct ("the applicant"), represented by S Borrell who is the licensed building practitioner concerned with the relevant building work
- T Hakaraia, who is the owner ("the owner")
- Kapiti Coast District Council ("the authority"), carrying out its duties as a territorial authority or building consent authority.

1.3 I have included the Greater Wellington Regional Council as a person with an interest in this determination.

1.4 This determination arises from the decision of the authority to refuse to grant a building consent because

- the authority is of the view that the land is subject to the natural hazard inundation, and
- the authority contends that the building consent application fails to protect the building work from the natural hazard.

1.5 The matter to be determined[2] is therefore whether the authority was correct in its decision to refuse to grant building consent.

1.6 In making my decision I have considered the submissions from the parties, the report of the expert commissioned by the Ministry to advise on this dispute ("the expert"), and the other evidence in this matter.

[1] The Building Act, Building Code, compliance documents, past determinations and guidance documents issued by the Ministry are all available at www.dbh.govt.nz or by contacting the Ministry on 0800 242 243.
[2] Under sections 177(1)(b) and 177(2)(a) of the Act

2. The proposed building work

2.1 The garage

2.1.1 The proposed building work consists of a detached timber framed outbuilding (a double garage/workshop) on a concrete slab, located in a very high wind zone for the purposes of NZS 3604. The proposed garage is 9m x 7.2m with a proprietary plywood external cladding system. The applicant has confirmed the interior is unlined despite some drawings showing an unnamed lining.

2.1.2 The proposed garage is located in the south west corner of the property, 1.5 metres away from any boundary. The building consent application indicates the land is subject to a natural hazard, which the applicant describes as 'ponding'.

2.1.3 The building consent application states the minimum ground clearance to the base of the cladding will be 100mm to deck or paved round, and 175mm to unprotected ground.

2.2 The site

2.3 The expert describes the site as generally flat with a typical ground level of 2.0 mRL[3]. It is located in close proximity to a number of water bodies that present potential inundation hazards, including (with proximity in brackets):

- the sea (300m): the property located on the landward side of coastal dunes and the lowest point in the dunes is approximately 3.0 MRL
- Rangiuru Stream (60m): currently no stopbanks present
- Waitohu Stream (2000m): currently no stopbanks present
- Otaki River (700m): the crest level of the stopbanks is approximately 3.6 mRL

2.4 The expert noted that the site is located in an area identified as subject to flooding in the Kapiti Coast District Plan with a designated flood level of 3.6 mRL, and that the nature of the flooding is ponded or low velocity (<1 m/s) flow.

3. Background

3.1 On 4 June 2014, the applicant lodged the building consent application with the authority. The application was supported by a letter dated 29 May 2014 from the applicant which noted:

- the site is 2.0m above mean sea level ("amsl"), with a 1% AEP[4] flood level of 3.6m amsl
- the area around the Rangiuru Stream is low-lying and 'has the potential to form a 'pond''
- the "Rangiuru Pond" is at risk from flooding from the Otaki River, local storm water, the Mangapouri, Waitohu and Rangiuru Streams, and potential flooding from the sea.

3.2 The applicant noted that the Greater Wellington Regional Council recommends any new habitable construction on the property be above the 1% AEP flood level of 3.6m, but that as the proposed building was a garage and not habitable, the applicant

[3] Referenced in terms of mean sea level from the Wellington 1953 datum.
[4] The term 'AEP of 1%' means an event having a 1 percent probability of occurring annually. This is sometimes referred to as a '100-year event'.

assumes it comes under the authority's district plan rules. The applicant is of the view that it does not make sense to raise the floor level of buildings that are used solely for vehicle storage.

3.3 The applicant went on to state their view that the building consent could be issued with a section 73 notice on the certificate of title, based on the building consent application with 'standard foundation/floor details for the floor be constructed 100mm above the existing ground level'.

3.4 On 8 August 2014 the authority wrote to the applicant, advising that the building consent application had been refused as the authority was unable to determine from the information provided that the proposed garage would comply under section 71(2)(a). The authority stated:

> In particular, the application fails to 'protect building work' from the natural hazard which has been identified on this site i.e. inundation to a depth of approx. 1600mm.

3.5 The Ministry received an application for a determination on 10 November 2014.

4. The submissions

4.1 The applicant set out excerpts from the authority's district plan regarding new and relocated buildings in ponding areas and overflow paths, and provided copies of the following relevant documents:

- The building consent application and supporting letter.
- The letter from the authority refusing to grant the building consent.

4.2 A submission was received from the authority on 5 March 2015. The authority provided: a copy of correspondence with the Greater Wellington Regional Council regarding flood modelling; natural hazard guidance information from the authority's website; guidance for the authority's staff on the process and steps for sections 71-74 of the Act; maps showing the extent and depth of flooding.

4.3 In respect of the matter being considered in this determination, the authority submitted that:

- at the time the consent application was made the authority referred to the GIS mapping that showed there was a natural hazard with flood water expected to reach 1.6m over the entire site
- there is no information on the flow rate but the duration of flooding would be 'quite long' in the order of days rather than hours
- there was no information in the consent application to indicate that the building would not be affected by the level of inundation, or that the building or land was to be protected from the inundation
- the authority considers the flooding would likely cause damage to the building and it cannot be satisfied that the building would meet the requirements of the Building Code in respect of Clauses B1, B2, E1 and E2
- it would be unreasonable for the authority to grant a waiver.

4.4 A draft determination was issued to the parties and person with an interest for comment on 16 March 2015.

4.5 In a response received on 31 March 2015, the authority accepted the draft determination without further comment.

4.6 The applicant and the owner both accepted the draft without further comment in responses received on 15 and 30 April respectively.

5. Expert's report

5.1 As described in paragraph 1.6, I engaged a firm of consulting engineers with specialist expertise in hydraulics to assist me. The expert undertook a site visit and reviewed outputs from hydraulic models, in order to provide advice on the size, nature and frequency of flooding events that would be likely to result in inundation on the subject property. The expert produced a report that was completed on 12 March 2015. Copies of this report were sent to the parties on 13 March 2015.

5.2 The expert described the properties location in respect of its proximity to water bodies and features of the site. I have included that information in paragraph 2. Given the geographic features in relation to the inundation hazard, the expert is of the view that inundation from the sea could be expected at levels exceeding 3.0 mRL, and from the Otaki River at levels above 3.6 mRL assuming that the stopbanks remain functional up to that level. The expert noted that inundation from the Waitohu or Rangiuru Streams could occur at any level exceeding the general ground levels adjacent to those streams. (Refer appendix A2 for summary tables)

5.3 In assessing the inundation at the site the expert also took into account the proposals for extension of the Otaki River stopbanks as well as potential stopbanking on the south bank of the Waitohu Stream.

5.4 The expert notes that highest levels of inundation are expected from coastal storm events and from Otaki River flood events, particularly during a stopbank breach scenario. The expert noted that the coastal inundation has not been accurately quantified and it is only when sea level rise associated with climate change is included that it could affect the site. Flooding from the Otaki River has been analysed in much greater detail however.

5.5 The expert concluded that inundation is likely to arise from the local stormwater catchment of Rangiuru Stream or from breakouts from the Waitohu Stream is at a lower level than that expected from the coast or the Otaki River, and that works are proposed on the Waitohu Stream that would further reduce this risk. The expert considers the flood level referenced in the Kāpiti Coast District Plan of 3.6 mRL as appropriate to account for the risks associated from future coastal flooding as well as stopbank breach scenarios from the Otaki River.

6. Discussion

6.1 Does the building work comply with the Building Code assuming no natural hazard?

6.1.1 Before sections 71, 72, and 73 can be considered, I must first establish whether the proposed garage would be code-compliant assuming that it was constructed on land not subject to inundation.

6.1.2 The proposed garage falls into the category of an "outbuilding", as defined in Clause A1 of the Building Code (7.01). In this case the outbuilding is not included within any other classified use, and as such the provisions of Clause E1.3.2 do not apply to the building. Therefore, under Clause E1 of the Building Code there is no requirement for the floor level of the proposed garage to be at any specific level.

6.1.3 I note also that the authority has not expressed any concerns relating to compliance of the building with the Building Code. In the absence of any information to the contrary, I am prepared to accept that the proposed garage fully meets the requirements of the Building Code if it was constructed on land not subject to inundation.

6.2 Section 71

6.2.1 There is no dispute between the parties that the site is subject to inundation, specifically ponding under section 71(3)(d), and accordingly that it falls within section 71(1). However, section 71(2) provides that if certain conditions are satisfied, section 71 does not apply.

6.2.2 The relevant condition under section 71(2)(a) is whether the authority is satisfied "that adequate provision has been or will be made to protect the land, building work, or other property referred to [in subsection 71(1)] from the natural hazard".

6.2.3 In the case of ponding I am of the view that the requirement under section 71(2)(a) cannot be met in terms of protecting the land or other property. The building work being carried out will have no effect on the impact of ponding on the site or other property; ponding will continue to occur on the land and other property regardless of construction of the proposed garage.

6.2.4 I hold the view that the building work would not cause damage to that land or other property as a result of the building work such that restoration would be required under section 71(2)(b). The building work will not accelerate or worsen the ponding by way of, for example altering the flow or depth of water; nor will the building work result in a natural hazard by, for example, causing slippage due to an increase in loading on the site.

6.2.5 However, in approaching the question of whether adequate provision has been made to protect the building work from ponding (s71(2)(a)), I must first consider the requirements of section 18 of the Act. This states that building work is not required to achieve performance criteria additional to, or more restrictive than, the Building Code.

6.2.6 In Determination 2007/110, which considered a house constructed on land subject to coastal hazards, I confirmed this interpretation when I took the view that:

> …compliance with the Building Code must be accepted as being "adequate provision" to protect the building work (and also protect other property where that is the objective of the clause concerned).

I consider that this interpretation is also valid in the present case.

6.2.7 The applicant noted the site as subject to a 1% AEP flood level that would result in flooding of 1600mm; and the authority's refusal also states that the inundation depth at the property would be approximately 1600mm. The expert found the 1% AEP from the Rangiuru Stream alone to be 2.0 mRL, with inundation from the sea at 3.67 mRL and from the Otaki River at 3.6 mRL (refer Appendix A.1).

6.2.8 There is no indication on the plans provided that the proposed garage is to be constructed on a raised platform or in such a way as to prevent the penetration of external moisture in a flooding event; accordingly I consider the proposed garage, including interior building elements, would be subject to the effects of flooding in a 1% AEP event.

6.2.9 The proposed garage is a building that has the classified use as an outbuilding and is therefore not subject to the requirements of Clause E1.3.2. However, consideration in this case must be given to Clauses B1 and B2 given the likelihood and level of inundation.

6.2.10 Building elements likely to be affected by moisture ingress may include joinery, external walls and framing, internal wall framing, fittings, and possibly electrical wiring.

6.2.11 If inundation occurs at a frequency that will adversely affect the required durability of particular building elements, for example wall framing, then in order to meet the test of protecting the building work under section 71(2)(a) the durability of those elements must be increased to match the environment in which they are required to perform. This is no different from, for example, using stainless steel fixings in a marine environment because galvanised steel fixings will not be sufficiently durable.

6.2.12 Given the level of ponding on the site and that I consider the building will be periodically inundated, this eventuality must be allowed for in the design of the building including the durability of the building elements used. I note the specification currently refers to the framing to be treated to a minimum of H1.2 and that a higher level of treatment may be required where the framing is likely to be subject to the effects of inundation.

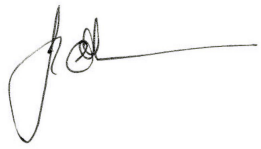
6.2.13 How compliance is to be achieved is open to the applicant to propose. I note that in respect to electrical services, these would need to be designed with appropriate safeguards if subjected to flooding, or alternatively put at a level where they will not be exposed to the risk.

6.2.14 Based on the information provided I am of the view that moisture ingress resulting from flooding of the property would cause damage to a number of building elements such that the building work would not comply with the durability requirements of Clause B2.3.1. Accordingly I conclude that as adequate provision has not been made to protect the building work the authority was correct to refuse to issue the building consent on that basis.

7. The decision

7.1 In accordance with section 188 of the Building Act 2004, I hereby determine that the authority correctly exercised its powers of decision under section 71(2) in refusing to grant building consent.

Signed for and on behalf of the Chief Executive of the Ministry of Business, Innovation and Employment on 4 May 2015.



John Gardiner
Manager Determinations and Assurance

Appendix A

A1 The relevant sections of the Act include:

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.

A.2 Summary tables from the expert's report

Table 1. Summary of Sea Level Parameters for Otaki Beach

Return period	Mean High Water Springs	Storm Surge	Wave Set-up	Climate change to 2100	Inundation level (no freeboard)
20 year (5% AEP)	2.50 mRL			+0.8 m	3.30 mRL
50 year (2% AEP)	1.02 mRL	+0.75 m	+0.85 m	+0.8 m	3.42 mRL
100 year (1% AEP)	1.02 mRL	+ 0.85 m	+1.00 m	+0.8 m	3.67 mRL

Table 2. Summary of inundation from Rangiuru Stream

Return period	Inundation level (no freeboard)	Downstream boundary (20 year event)	Inundation level (with freeboard)
50 year (2% AEP)	1.8 mRL	2.5 mRL	2.4 mRL
100 year (1% AEP) including climate change	2.0 mRL	3.3 mRL	2.6 mRL

Table 3. Summary of inundation form Waitohu Stream

Return period	Inundation level (no freeboard)	Downstream boundary (20 year event)	Inundation level (with freeboard)
50 year (2% AEP)	Property not affected in 2% AEP		
100 year (1% AEP) including climate change	2.3 mRL	3.3 mRL	2.9 mRL

Table 4. Summary of inundation from Otaki River

Return period	Inundation level (no freeboard)	Downstream boundary	Inundation level (with freeboard)
100 year (1% AEP) including climate change	3.6 mRL	20 year event	3.6 mRL