

Protection of other property from coastal hazards

1 THE MATTER TO BE DETERMINED

1.1 General

1.1.1 The matter before the Authority is a dispute about a building consent for the construction of a proposed house on the seafront (“the house”), and specifically whether the house will comply with the building code (the First Schedule to the Building Regulations 1992) in respect of protecting other property against coastal hazards.

1.1.2 The applicants’ statement of the matter of doubt or dispute said:

1. The Council erred in concluding that the building consent could satisfy the terms of sections [*sic*] B1.1 to B1.3.3 (inclusive) of the Building Code . .
 - (c) . . . The Council was obliged to refuse to grant the building consent as a consequence [of section 36 of the Building Act 1991].
2. A resource consent was required . . .
3. The proposed dwelling is, generally, located too far seaward and will be susceptible to, and will cause the properties of the applicants and of other neighbouring property owners, to be susceptible to unacceptable erosion and inundation processes.
4. . . the Council has failed to have regard to the relevant provisions in the Proposed Regional Coastal Environment Plan . . .

1.1.3 The applicants subsequently queried certain conditions of the building consent.

2 THE PARTIES

2.1 The applicants are the owners of the other property acting through a firm of solicitors. The other parties are the owner of the house and the territorial authority concerned.

3 THE BUILDING

3.1 The house is two storeys high constructed on a concrete slab with concrete block sidewalls. There is a light timber frame deck approximately 1.5 m wide along three sides of the house, including the seaward side. In the words of the territorial authority:

The front (north) [ie seaward] 3.0 metres of the building is supported on 4.2 metre long [piles]. The concrete slab between the [piles] has been designed to be self-supporting.

- 3.2 The seaward end of the concrete slab is 6 m from the nearest point on the seaward boundary of the allotment.
- 3.3 The allotment is on the seafront of a spit of land. It is sited on a secondary dune. The foredune between the house and the beach is currently about 36 m from the nearest point on the seaward end of the concrete slab.
- 3.4 Erection of the house had been commenced under a building consent, but was halted when the building consent was suspended by the operation of section 17(4) of the Building Act 1991 (“the Building Act”).
- 3.5 The building consent is subject to certain conditions, including:
- (a) Condition 1 to the effect that the house has a specified intended life of the lesser of 50 years or until any part of the seaward toe of the foredune to the north is 10 metres distant from any part of the building.
 - (b) Condition 2 to the effect that the house is to be “altered, removed, or demolished” before the end of its specified intended life.
 - (c) Condition 4 to the effect that the owner shall erect and maintain impervious fences, to the height of the house’s floor, along the side boundaries.

4 THE LEGISLATION AND LEGAL ARGUMENTS

4.1 Relevant provisions of the Building Act and the building code

4.1.1 Relevant provisions of the Building Act include:

Section 2:

“Other property” 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:

Section 16:

In sections 17 to 21 of this Act, “party” means—

- (a) The territorial authority affected; and . . .
- (c) The owner affected; and
- (d) The owner of other property (if the matter for determination relates to a provision in the building code that has the purpose of protecting that other property)

Section 18:

An application to the Authority [for a determination] shall be limited to whether or not, or to what extent, particular building work or proposed building work (including any actual or

proposed demolition) complies with all of the provisions, or with any particular provision, of the building code, or to whether or. . . .

Section 20:

A determination by the Authority in relation to a matter referred to it under section 17 of this Act may incorporate waivers or modifications and conditions that a territorial authority is empowered to grant or impose and shall—

- (a) Confirm, reverse, or modify the disputed decision to which it relates or determine the matter which is in doubt . . .

Section 34(4):

The territorial authority may grant a building consent subject to—

- (a) Such waivers or modifications of the building code, or any document for use in establishing compliance with the building code, subject to such conditions as the territorial authority considers appropriate . . .

Section 36:

(1) Except as provided for in subsection (2) of this section, a territorial authority shall refuse to grant a building consent involving construction of a building or major alterations to a building if—

- (a) The land on which the building work is to take place is subject to, or is likely to be subject to, erosion . . .

unless the territorial authority is satisfied that adequate provision has been or will be made to—

- (c) Protect the land or building work or that other property concerned from erosion . . .

(2) Where a building consent is applied for and the territorial authority considers that—

- (a) The building work itself will not accelerate, worsen, or result in erosion . . . of that land or any other property; but
- (b) The land on which the building work is to take place is subject to, or is likely to be subject to, erosion . . .; and
- (c) The building work which is to take place is in all other respects such that the requirements of section 34 of this Act have been met—

the territorial authority shall, if it is satisfied that the applicant is the owner in terms of this section, grant the building consent, and shall include as a condition of that consent that the territorial authority shall, forthwith upon the issue of that consent, notify the District Land Registrar of the land registration district in which the land to which the consent relates is situated; and the District Land Registrar shall make an entry on the certificate of title to the land that a building consent has been issued in respect of a building on land that is described in subsection (1)(a) of this section. . . [and] the territorial authority and every member, employee, or agent of the territorial authority shall not be under any civil liability to any person having an interest in that building on the grounds that it issued a building consent for the building in the knowledge that the building for which the consent was issued or the land on which the building was situated was, or was likely to be, subject to damage arising, directly or indirectly, from erosion

Section 39:

(1) If any proposed building, or any existing building proposed to be altered, is intended to have a use of not more than 50 years, any building consent for that building shall be issued only on condition that the building shall be altered, removed, or demolished on or before the

end of the specified intended life, and subject to such other conditions as the territorial authority considers necessary.

(2) In subsection (1) of this section, "specified intended life", in relation to a building, means the period of time, as stated in an application for a building consent or in the consent itself, for which the building is proposed to be used for its intended use.

4.1.2 Relevant provisions of the building code include:

Clause B1 STRUCTURE

OBJECTIVE

B1.1 The objective of this provision is to:

- (c) Protect other property from physical damage caused by structural failure.

FUNCTIONAL REQUIREMENT

B1.2 Buildings, building elements and sitework shall withstand the combination of loads that they are likely to experience during construction or alteration and throughout their lives.

PERFORMANCE

B1.3.1 Buildings, building elements and sitework shall have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing during construction or alteration and throughout their lives.

B1.3.3 Account shall be taken of all physical conditions likely to affect the stability of buildings, building elements and sitework, including:

- (e) Water and other liquids,
- (r) Removal of support.

B1.3.4 Due allowance shall be made for:

- (a) The consequences of failure,
- (e) Accuracy limitations inherent in the methods used to predict the stability of buildings.

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.

Clause E1 SURFACE WATER

OBJECTIVE

E1.1 The objective of this provision is to:

- (a) Safeguard people from injury or illness, and other property from damage, caused by surface water [defined as including seawater]

FUNCTIONAL REQUIREMENT

E1.2 Buildings and sitework shall be constructed in a way that protects people and other property from the adverse effects of surface water.

PERFORMANCE

E1.3.1 Except as otherwise required under the Resource Management Act 1991 for the protection of other property, surface water, resulting from an event having a 10 percent probability of occurring annually and which is collected or concentrated by buildings or sitework, shall be disposed of in a way that avoids the likelihood of damage or nuisance to other property.

4.2 The Authority's jurisdiction

- 4.2.1 The territorial authority submitted that the Authority did not have jurisdiction to make the determination applied for because the applicants did not have the status of a party as defined in section 16 of the Building Act. The applicants argued to the contrary.
- 4.2.2 After considering all submissions and taking external legal advice the Authority takes the view that:
- (a) The applicants have the status of a party only in respect of provisions of the building code that have the purpose of protecting the applicants' property,
 - (b) The Authority has jurisdiction to determine whether the house complies with any provision of the building code that has the purpose of protecting the applicants' property (items 1 and 3 in 1.1.2 above),
 - (c) The Authority has no jurisdiction to consider matters that come under the Resource Management Act 1991 (items 2 and 4 in 1.1.2 above),
 - (d) The Authority has jurisdiction to confirm, modify, or reverse any condition of the building consent imposed by the territorial authority (as distinct from required by the Building Act).
- 4.2.3 In making its decision, the Authority has not considered whether the building complies with any other provisions of the Building Act or the building code.

4.3 The interpretation of the building code

- 4.3.1 In interpreting the clauses of the building code, the following definitions in section 2 of the Building Act should be noted:
- “Functional requirements”, in relation to a building, means those functions which a building is to perform for the purposes of this Act:
- “Performance criteria”, in relation to a building, means those qualitative or quantitative criteria which the building is to satisfy in performing its functional requirements:
- 4.3.2 The words “likely” in clauses B1.2 and B1.3.3, and the word “likelihood” in clause E1.3.1 are not defined in the Building Act or the building code. However, the word “likely” in section 64 of the Act has been considered in decided cases, and it has been held that:

“Likely” does not mean “probable”, as that puts the test too high. On the other hand, a mere possibility is not enough. What is required is “a reasonable consequence or [something which] could well happen”¹.

“Likely” means that there is a reasonable probability, or that having regard to the circumstances of the case it could well happen².

¹ *Auckland CC v Weldon Properties Ltd* 8/8/96, Judge Boshier, DC Auckland NP2627/95, upheld on appeal in *Weldon Properties Ltd v Auckland CC* 21/8/97, Salmon J, HC Auckland HC26/97.

² *Rotorua DC v Rua Developments Ltd* 17/12/99, Judge McGuire, DC Rotorua NP1327/97.

4.3.3 Clauses B1 and E1 of the building code both have the purpose of protecting the applicants' property. In the particular circumstances as discussed below, that means that the house is required to protect the applicants' property against:

- (a) Increased inundation because of seawater diverted by the house, and
- (b) Increased erosion because of wave focussing or surging of seawater caused by the house.

4.3.4 As to clause B1, the applicants said:

- Clause B1.1(c) of the Building Code provides that the object of the provision is to "protect *other property* from physical damage caused by structural failure". It does not indicate whether the subject property or other property is to be the subject of structural failure. . . .
- Clause B1.3.3 provides that account is to be taken of all physical conditions likely to affect the stability of *buildings*. Again, the reference to "buildings" can be to either or both the subject building and other property (such as [the applicants']). . . . [The house] will be built in the current erosion risk zone in such a way and in such a location as to increase materially the risk of flooding to both the subject property and . . . [the applicants' property].

4.3.5 The Authority does not accept that interpretation, but takes the view that throughout clause B1 the word "building" refers to the subject building. Other buildings under different ownership come within the term "other property" as defined in section 2 of the Building Act.

4.3.6 In connection with the question of inundation, the Authority takes the view that the fences required by the building consent, see 3.5 above, constitute "sitework" intended to avoid the likelihood of damage to other property (see 5.9.3 below).

4.3.7 The applicants did not make any submissions as to the interpretation of clause E1.

4.3.8 The Authority takes the view that the words "collected or concentrated" in clause E1.3.1 apply to seawater diverted by the house and to wave focussing or surging of seawater resulting from the presence of the house.

4.3.9 In this case, therefore, clause E1 requires that the house, in performing its functional requirement of safeguarding other property from damage caused by seawater, must satisfy the performance criterion specified in clause E1.3.1 of avoiding "the likelihood of damage or nuisance to other property" resulting from "an event having a 10% probability of occurring annually" (referred to below as "a 10% AEP storm", and colloquially as, "a 10 year storm").

4.3.10 The Authority recognises that clause B1 could conceivably be read as requiring that the house (or associated sitework), in performing its functional requirement of withstanding loads (in this case loads from seawater) must satisfy the performance criterion specified in clause B1.3.6(b) of avoiding "the likelihood of damage to other property" by seawater in an event of "low probability".

- 4.3.11 The Authority does not accept that interpretation, considering that clause B1.3.6(b) cannot be read as requiring protection of other property against surface water in a low probability storm (such as a *Wahine* type storm) but only in the 10% AEP storm specified by clause E1.3.1.
- 4.3.12 Accordingly, the Authority takes the view that the house is required to protect the applicants' property from seawater only in a 10% AEP storm and not in a lower probability (more severe) storm.

4.4 The conditions of the building consent

- 4.4.1 The applicants queried conditions 1 and 2 as to the specified intended life of the house, and condition 4 as to the fences (see 3.5 above). The applicants also raised the subject of section 36(2) of the Building Act, which requires the territorial authority to impose a specified condition in certain circumstances.
- 4.4.2 Under section 34(4) of the Building Act, the territorial authority may grant building consents incorporating waivers or modifications of the building code subject to conditions. Under section 29, the Authority may incorporate in a determination waivers or modifications and conditions that a territorial authority is empowered to grant or impose. The Authority takes the view that in this determination it is required to consider whether the conditions of the building consent are reasonable, sufficient, and will have the desired effect.

4.5 Conclusion

- 4.5.1 The Authority concludes that the particular matters that it has been asked to determine and has the jurisdiction to determine are:
- (a) Whether the house complies with clauses B1 and E1 in respect of protecting the applicants' property, and specifically whether, in a 10% AEP storm, the house is likely to cause increased damage or nuisance by seawater to the applicants' property.
 - (b) Whether the conditions of the building consent are reasonable.

The key issue is whether the owner's proposals for demolition have sufficient chance of being put into effect before the occurrence of any damage to other property attributable to the presence of the house.

5 THE SUBMISSIONS

5.1 General

- 5.1.1 The applicants submitted the following documents in support of the application and statement of the matter of doubt or dispute:
- (a) A coastal management report for the spit dated August 1991 that was commissioned by the territorial authority ("the coastal management report").

- (b) A coastal hazard analysis for the relevant coastline dated November 2002 that was commissioned by the territorial authority and the regional council (“the coastal hazard analysis”).
- (c) A coastal hazard assessment of the allotment on which the house is erected dated June 2002 that was commissioned by the owner (“the coastal hazard assessment”).
- (d) A letter from the regional council expressing concerns about the safety of the house.
- (e) A statement by the applicants outlining personal experiences with coastal inundation and erosion in the neighbourhood (“the applicants’ experience”).
- (f) A notice of support for the application signed by owners of other properties in the neighbourhood.
- (g) An affidavit in support of the application from an environmental scientist employed by the regional council.
- (h) Submissions including discussion of the documents listed above and of documents submitted by the other parties, together with legal arguments.

Each of those documents is discussed separately below.

- 5.1.2 The owner submitted a statement outlining its decisions and the consent process followed and countering the applicants’ submissions, with particular reference to the coastal hazard assessment. The owner also submitted reports as to the feasibility of removing or demolishing the front portion of the house.
- 5.1.3 The territorial authority made submissions, including legal argument, and provided copies of relevant documents from its files, including the project information memorandum and building consent for the house. Also included was correspondence with the regional council.
- 5.1.4 The Authority commissioned an independent coastal management consultant (“the Authority’s consultant”) to study the parties’ submissions, make a visit to the site, and report on the issues. That report was copied to the parties, and each of them responded with comments. The Authority’s consultant then amended the report to take account of the comments. The amended report (“the Authority’s consultant’s report”) was copied to the parties.
- 5.1.5 The main legal arguments are discussed in 4 above.
- 5.1.6 The main technical documents and submissions are described in 5.2 to 5.10 below.
- 5.1.7 Many of the documents and submissions related wholly or partially to Resource Management Act considerations. Such considerations are not relevant to this determination and are not discussed below.

5.1.8 Many of the documents, particularly the coastal management report, the coastal hazard analysis, the coastal hazard assessment, and the Authority’s consultant’s report are complex and lengthy. The brief accounts of them below do no more than indicate the nature of the technical points at issue and cannot do justice to the carefully presented documents themselves. Nevertheless, the Authority took full account of all relevant matters in the documents, and points that are not mentioned did not affect the Authority’s decision.

5.2 The coastal management report

5.2.1 Relevant passages from the coastal management report include:

It is well established . . . that [the spit] has a generally accretional history . . . marked by “interruptions” between 1949-1929 [*sic*] and 1976-1987.

. . . erosion occurs in episodes during very high energy storm events that are non-uniformly distributed in time and that are separated by long intervals of accretion or quiescence . . .

. . . In April 1968 the “Wahine Storm” produced extreme sea levels and waves . . . estimated as having a recurrence interval close to once in 100 years (a 1% risk storm) . . .

. . . [extrapolating data available in 1991] mean sea level will rise [at least] between 0.085 and 0.10 m during the next century [and possibly] 0.3 m to the year 2050AD [or] a 0.65 m increase by the year 2100 AD . . .

. . . it is possible that next century the rate of long term coastal accretion may reduce or cease. However, there is no credible evidence to suggest that the coast will develop a long term erosional trend. Much more certainly, the incidence of coastal hazards is likely to become both more severe and more frequent as sea level rises. . .

. . . the foredune between housing and the beach is the principal buffer against erosion and inundation. . .

5.2.2 The general observations of the coastal management report were not disputed in any of the subsequent reports or submissions.

5.3 The coastal hazard analysis

5.3.1 The coastal hazard analysis identifies “areas sensitive to coastal hazard” for planning and resource management purposes and specifically to “indicate areas where any proposed developments may be affected by coastal hazards, and hence the degree of risk should be assessed more fully”.

5.3.2 The analysis identifies:

- (a) The current erosion risk zone. “This zone includes all the land presently at risk from erosion due to storm erosion, short-term fluctuations, and dune instability with sufficient safety factors.”

- (b) The 2060 erosion risk zone. This includes the current erosion risk zone “and additional areas that are predicted to be subject to shoreline movements from SLR [sea level rise] to the year 2060”.
 - (c) The 2100 erosion risk zone. This includes additional “areas that are predicted to be subject to shoreline movements due to SLR to the year 2100”.
- 5.3.3 The analysis recommends that new private development should not be permitted within the current erosion risk zone, and that within the 2060 and 2100 erosion risk zones “all private development shall be readily and demonstrably relocatable”.
- 5.3.4 The seaward end of the house (excluding the light timber deck) appears to be within the current erosion risk zone by up to 3 m, and all of the house is within the 2060 erosion risk zone.
- 5.3.5 In practice, the recommendations of the analysis would mean that the house should not be erected within 9 m of the seaward boundary, and should be “readily relocatable”, defined as excluding “concrete slab floor construction”.
- 5.3.6 The coastal hazard analysis also identified “inundation risk zones” in order “to determine minimum ground levels or building platform heights”.
- 5.3.7 The coastal hazard analysis was written entirely in terms of the Resource Management Act 1991. However, the Authority recognises the distinction between erosion risks and inundation risks, and that both must be taken into account for the purposes of clause E1.3.1 of the building code.

5.4 The coastal hazard assessment and subsequent correspondence

- 5.4.1 The coastal hazard assessment was written to accompany the owner’s application for building consent and is specific to the site. Relevant passages include:

. . . the general area has frequently experienced storm events capable of causing severe erosion and moderate inundation. Any new development in the coastal area needs to consider mitigation against erosion and inundation hazards.

. . . a 1:10 year storm event has the capability of . . . causing up to 16 m of retreat.

The property is not currently subject to erosion hazards. The width and bulk of . . . the dune system will protect against erosion and . . . inundation from 1 in 50 to 1 in 100 year events and against a series of storms. However, it is recommended that the siting of any dwelling on the property also takes into consideration long term sea level rise . . . A building setback distance of 35 metres from the toe of the foredune would mitigate against storm erosion.

The assessment also made recommendations as to dune protection, fencing, finished floor level, the detailed construction of the house and in particular that the house be “readily relocatable”.

- 5.4.2 In a subsequent letter to the owner, commenting on the application for this determination, the author of the coastal hazard assessment said:

Properties may be directly affected by erosion or inundation to essentially the same degree. Construction of buildings on the properties will have no bearing on the occurrence of erosion or inundation but may affect wave runoff (and storm surge inundation or overland flow) if the water reaches the buildings. The water flow may be reflected and/or directed around the building. This may cause minor scouring of unvegetated sediments from beside the building but is unlikely to result in erosion during a storm event. If ongoing erosion of the beach and dunes over a long time frame reaches a building and undermines the foundations then the collapsed structure may cause focussing of wave energy and enhanced erosion to the adjacent shoreline.

The [building consent for the house] in effect requires isolation of the [owner's] site from the neighbouring sites through the construction of impervious fences . . . Therefore, any wave runoff flow diversion will be restricted to within the property. The fences themselves are unlikely to have an effect on flows as they run more or less perpendicular to any possible flow over the top of the dunes. . . .

With regard to Conditions 1 and 4 of the Building Consent [see 3.5 above], I would consider these would mitigate against hazard to [the house] from coastal erosion, and would not increase the risk of inundation by sea water.

5.5 Correspondence with the regional council and affidavit from one of its staff

- 5.5.1 A letter from the regional council attached to the application generally dealt with the council's concerns about planning matters, and also expressed concern about locating the house in the coastal erosion risk zone and about the quality of the coastal hazard assessment. As to Building Act matters, the regional council noted that a section 36(2) condition could be placed on the title but that "subsequent buyers would be unaware of the other conditions unless they did detailed checks on the property file before purchase".
- 5.5.2 The applicants subsequently submitted an affidavit from an environmental scientist on the staff of the regional council. The scientist commented that the coastal hazard assessment did not follow the criteria set out in the regional council's regional coastal environment plan. He also noted the extent to which the house was within the current, 2060, and 2100 erosion risk zones.

5.6 The applicants' experience

- 5.6.1 In statements largely dealing with matters discussed in the technical submissions, the applicants recounted personal experiences with storms and erosions affecting their property and neighbouring property. In particular, the applicants observed the effects of Tropical Cyclone Gisele ("the *Wahine* storm") in 1968, when the sea inundated the applicants' property, passing round the applicants' house and temporarily ponding in the rear of the section whilst depositing large logs on the lawn. The Authority notes that the *Wahine* storm had a considerably lower probability than a 10% AEP event.

5.6.2 The applicants emphasised the power and energy of the sea during such events, and said: “The absolute magnitude of significant past events are ignored in the [coastal hazard assessment] and this is a major omission.”

5.7 Support from neighbours and others

5.7.1 The applicant also submitted notices of support from neighbours who expressed concerns that the house would increase the coastal hazards threatening their own properties, but included no evidence as to such risks.

5.8 The owner’s submissions

5.8.1 The owner submitted that the coastal hazard assessment was site specific and “outweighs any generic report”, and said:

The [owner] has complete confidence in the [coastal hazard assessment] . . . In fact, we believe that with the [territorial authority] requiring a buffer of 10 m from the dune to the proposed dwelling this being a further safety fact imposed by [the territorial authority] which we accept after deliberation of all the relevant information.

5.8.2 The owner submitted reports:

- (a) From a consulting structural engineer confirming the feasibility of partial demolition and removal of the house if it became threatened by coastal erosion.
- (b) From a concrete cutting contractor saying that it could “carry out the concrete cutting required to remove the deck, floors and foundations in the front living area and master bedroom – approximately 4 metres in from the front of the building . . . in small enough pieces to be readily removed [by a small digger] . . . within 6 hours of commencing work”.
- (c) From a builder estimating that “urgent removal of the roofing, windows and balustrade material” could be “completed within six hours [including] clearing of debris”.
- (d) From a digger operator estimating that it would take “a further 2 hours to remove waste after the last of the concrete had been cut”.

5.9 The territorial authority’s submissions

5.9.1 The territorial authority said that the coastal hazard analysis did not take account of ground contours. In processing the application for building consent, the territorial authority had relied on the site-specific hazard assessment. The documents submitted by the territorial authority illustrated “that the Council was clearly aware of coastal hazard issues from the outset and factored them into its decision making”.

5.9.2 The conditions of the building consent ensured that the house would be “removed or demolished before it is in any danger of failing any of the performance measures set out in the building code that relate to erosion or inundation”.

5.9.3 Responding to points in the Authority’s consultant’s report (see 5.10 below), the territorial authority said:

Maximum coastal inundation levels over a 50 year time horizon have been determined [at a level considered acceptable by the regional council and by the coastal hazard analysis]. Condition 4 of the building consent [requiring fences, see 3.5 above] reflects the maximum coastal inundation level. The condition has been specifically intended to protect adjacent properties from any sea water flowing around [the house] during major storm events.

The [coastal hazard analysis] . . . receives its legitimacy through the Resource Management Act. [It] has not been adopted by the [territorial authority] and has no formal status. It is also a report that is generic in its approach. As a consequence of its specificity, a site specific coastal hazard assessment by a nationally recognised coastal hazard expert has precedence over a generic report.

In terms of the relocatability of the structure, the Council accepts that the building is not relocatable. The building has been designed to be demolished rather than relocated; this is the owner’s choice. The subsequent correspondence received from [the owner] has confirmed that the northern portions of the building can be demolished and removed in a matter of hours. This is important when considered in the context of [the Authority’s consultant’s report’s] statements that the duration of a storm event is “1 to 3 days”.

5.10 The Authority’s consultant’s report

5.10.1 Relevant extracts from the Authority’s consultant’s report include:

- 79 At current rates of short-term duneline retreat . . . the Termination Date for the building [see condition 1 in 3.5 above] will be reached within the next 6 to 9 years or earlier if a 1% or 2% AEP storm event occurs over the next decade.
- 81 In my opinion, there is a reasonable probability that damage will occur to the Applicant’s property as a result of the proposed building work on the property. Such damage would mostly result from the effects of sea erosion and not from flooding from the sea.
- 82 As designed, the integrity of the proposed dwellinghouse is a non-relocatable structure. When the Termination Date is reached it will most likely have to be entirely demolished to avoid adverse effects to the Applicant’s property.
- 83 Damage will only occur to the adjacent property if sea erosion undermines [the house], causing the seaward part to collapse on to the eroded beach. There is a reasonably high probability that the damaged concrete structure would then form a relatively hard promontory or groyne resulting in accelerated rates of erosion to the Applicant’s

property as a direct result of mostly wave focussing and surging around the impermeable “*structure*”.

- 85 The trigger distance of 10m between the duneline and the building may occur either when the owner is away or at the peak of a storm erosion phase. [The coastal hazard assessment] noted that a 1-in-10 year storm event could cause “*up to 16m of retreat*”. [The coastal hazard analysis] calculated that 2% and 5% AEP storms in series could cause 10m to 11m of retreat. Such retreat will occur during the duration of the storm event which typically is 1 to 3 days. In my opinion the low elevation of the foredune suggests that catastrophic duneline retreat during a 1% or 2% AEP storm would be of the order of 15 to 25m.
- 87 In general, a storm surge or tsunami can be expected to surge across the land and would be channelled to a minor degree down the property by the impervious fences. I do not believe the proposed dwellinghouse would enhance the effects of storm surge or tsunami on the adjacent property.
- 110 Ten metres distant from the front wall of the proposed dwelling house on the property the foredune is about 3 metres MSL which is less than a metre above the backshore beach. In my opinion, a 10% AEP event is likely to erode the 10 metres during one or two high tides. If the event is sustained over two to three days the erosion is likely to retreat perhaps a further 5 metres past the dwelling house.
- 111 Under the scenario in paragraph 110, I am of the opinion that the effects of a 10% AEP event on the Applicant’s property from the proposed dwelling house are likely to be minor.

5.11 The draft determination

- 5.11.1 After considering the submissions, as discussed below, the Authority prepared a draft determination which was sent to the parties, who were asked to indicate whether they accepted the draft (subject to non-controversial corrections) or wished the Authority to hold a formal hearing.
- 5.11.2 The applicants and the owner accepted the draft. The territorial authority expressed disagreement with various parts of the draft but did not wish to prolong the matter by a formal hearing and accordingly did not object to the draft.

6 DISCUSSION

6.1 General

- 6.1.1 The matter turns on whether the conditions of the building consent, subject to any necessary amendments, will ensure that:

- (a) The fence, if properly constructed to resist the relevant loads, will protect the applicants' property against increased inundation because of seawater diverted by the house in a 10% AEP storm, and
- (b) The house will be demolished or removed before it can increase erosion by the sea on the applicants' property in a 10% AEP storm.

In other words, whether the conditions are appropriate to achieve their intended effects.

6.1.2 It is also necessary to consider whether the conditions are sufficient, reasonable (which includes practicable), and enforceable, and whether they should be amended for any reason.

6.2 Conditions 1 and 2 of the building consent

6.2.1 Overview

6.2.1.1 Conditions 1 and 2 of the building consent (see 6.2.2.1 below) require the owner to demolish the house when the seaward toe of the foredune comes within a certain distance from the house.

6.2.1.2 Conditions 1 and 2 read:

- 1 The specified intended life of the building is a use of 50 years or such earlier date any part of the seaward toe of the foredune to the north is 10 metres distant from any part of the building (the termination date).
2. The Owner of the Land, in terms of the Building Act 1991, shall have the sole duty (and the Council shall have no such duty),
 - (a) To monitor the distance between the seaward toe of the foredune to the north and the nearest part of the building, and
 - (b) To ensure that the building on the Land is altered, removed, or demolished so as to comply with the Building Code and this building consent no later than the Termination Date

The Owner shall have no right of compensation from the Council in respect of such undertakings, works, and the consequences of compliance or non-compliance by the Owner with these conditions of the building consent.

6.2.2 Purpose

6.2.2.2 The territorial authority said that condition 1 was imposed to ensure that the house would be "removed or demolished before it is in any danger of failing any of the performance measures set out in the building code that relate to erosion or inundation".

6.2.2.3 The Authority takes it that conditions 1 and 2 have two purposes:

- (a) To protect other property, including that of the applicants, against erosion in a 10% AEP storm by ensuring that the house will be removed before the sea advances sufficiently to cause it to collapse and cause such erosion, and
- (b) To ensure that the duty to do so rests with the owner, without any claim for compensation from the territorial authority.

6.2.3 *Appropriateness*

6.2.3.1 As to whether those conditions are appropriate to achieve the purpose of protecting the applicants' property, both the author of the coastal hazard assessment and of the Authority's consultant (see 5.4.2 and 5.10.1 above) were of the opinion that the applicants' property will be at risk of erosion caused by the presence of the house only if:

- (a) The house collapses to such an extent as to form a groyne, and
- (b) That groyne results in wave focussing or surging of seawater adverse to the applicants' property.

In the absence of any evidence to the contrary, the Authority accepts those opinions. There is no need to consider the cumulative effects of previous storms, because there can be no damage to other property unless and until the house has collapsed.

6.2.3.2 The house would collapse only if:

- (a) A storm occurred when the toe of the foredune was just over 10 m from the house, and
- (b) The storm was of sufficient magnitude for the resulting erosion to advance far enough and fast enough to cause the house to collapse before it could be demolished and removed in accordance with condition 1.

The immediate question is whether a 10% AEP storm would be of sufficient magnitude.

6.2.3.3 The coastal hazard assessment said that "a [10% AEP] event has the capability of . . . causing up to 16 m of retreat", see 5.4.1 above. The Authority's consultant's report said "a 10% AEP event is likely to erode the 10 metres during one or two high tides. If the event is sustained over two to three days the erosion is likely to retreat perhaps a further 5 metres past the dwelling house".

6.2.3.4 The Authority concludes that a 10% AEP storm could advance far enough but would take "two to three days" to do so. However, the 10% AEP storm must trigger corrective action by the owner at the start of the period, i.e. say 12.5 hours after the first critical tide, rather than at the end of the second tide, when much of the damage has already been initiated.

6.2.4 *Reasonableness*

- 6.2.4.1 Conditions 1 and 2 correspond to a condition specifically required under section 39 of the Building Act, see 4.1.1 above, which provides in effect that if a building is intended to have a use of not more than 50 years then the building consent must include a condition that the building “shall be altered, removed, or demolished on or before” the end of that period.
- 6.2.4.2 It follows that conditions 1 and 2 are reasonable if the “period of time . . . for which the building is proposed to be used” can lawfully be specified as being the lesser of 50 years or the period until the occurrence of a certain event, in this case the toe of the foredune having retreated to within 10 m of the house.
- 6.2.4.3 The Authority takes the view that it is lawful to do so if, in the particular circumstances, it is reasonable to expect that the building concerned is likely to be “altered removed, or demolished on or before” the occurrence of that event. In this case, if it is reasonable to expect that the house will be demolished and removed when the toe of the foredune is 10 m from the house and the demolition has to be done during a 10% AEP storm.
- 6.2.4.4 The time available is “one or two high tides” until the erosion reaches the house, with “two to three days” before the erosion progresses a further 5 m. Furthermore, the use of piles to support the seaward 3 m of the house (see 3.1 above) means that the house will not collapse immediately the erosion reaches it. That will extend the time available for demolition to be completed.
- 6.2.4.5 The owner submitted expert opinions to the effect that the necessary partial demolition can be done “within 8 hours of commencing work” (see 5.8.2 above). To that must be added any delay between the moment when the toe of the foredune had retreated to within 10 m of the house and the moment when demolition work commences. Factors that need to be taken into account when considering whether the house is likely to be demolished in time include:
- (a) Whether the owner is in residence at the critical moment.
 - (b) Whether the owner (through monitoring or otherwise) identifies that the toe of the foredune has already approached within 10 m of the house, and that demolition is a matter of urgency because the house is vulnerable to erosion from the 10% AEP storm.
 - (c) Whether the owner has the financial capacity to complete the demolition in time.
 - (d) Whether the owner issues the necessary instructions at the required time.
 - (e) Whether the critical event occurs during daylight hours on a working day, when there is less likely to be delay in engaging the necessary contractors, than if the event occurs at night, or on a weekend or public holiday.
 - (f) Whether there will be delay because the contractors concerned have other commitments.

The Authority notes that there are many factors listed above that are not within the owner's control.

6.2.4.6 The Authority considers that, despite the owner's best endeavours, unacceptable delays could occur before demolition was commenced.

6.2.4.7 In other words, the Authority accepts that demolition within the available time is possible, but considers that demolition is likely to be, or could well be, delayed whereupon there is likely to be damage to other property contrary to clause E1.3.1 of the building code.

6.2.4.8 The Authority concludes that it is unreasonable to assume that the house will be demolished and debris removed before erosion causes uncontrolled collapse of the house.

6.2.4.9 The Authority concludes that the house could well collapse in a 10% AEP event, and therefore that wave focussing or surging of seawater resulting from the collapse of the house could well cause damage or nuisance to the applicants' property in such an event. In other words, that the house does not comply with clause E1.3.1 of the building code.

6.2.5 *Conclusion*

6.2.5.1 The Authority concludes that conditions 1 and 2 of the building consent are not appropriate to ensure that the house will protect other property against erosion by the sea to the extent required by clause E1.3.1 of the building code, and that the Authority must therefore reverse the territorial authority's decision to issue the building consent.

6.2.5.2 However, for the sake of completeness, other matters arising out of the application are discussed below.

6.3 **Clause B1**

6.3.1 The applicants claimed in effect that the territorial authority should not have issued the building consent because the proposed house would not comply with clause B1 of the building code, see 1.1.2 above.

6.3.2 The Authority accepts that in a 1% or 2% AEP storm the foredune would retreat more than 20 m, see 5.4.1 and 5.10.1 above. The Authority considers that the house as designed is likely to collapse in such an event, and therefore does not comply with clause B1.

6.3.3 Thus even if conditions 1 and 2 were appropriate to ensure that the house complied with clause E1, they would not ensure that it complied with clause B1.

6.3.4 That does not necessarily mean that the territorial authority must refuse to issue a building consent on that account. Under section 34(4), the territorial authority has the power to grant a building consent subject to waivers or modifications of the building code "subject to such conditions as the territorial authority considers appropriate". Section 47 lists matters that territorial authorities are required to take into account

when granting such waivers or modifications. In practice, the Authority would expect such waiver or modification to be granted on the application of the owner.

- 6.3.5 In this case, therefore, it was open to the owner to design the house so that it would resist the effects of a low probability event to the extent required by clause B1, or to apply to the territorial authority for a partial waiver of that clause.
- 6.3.6 In fact, there appears to have been no formal application for such a waiver, but in the circumstances the Authority takes that to have been the intention. Similarly, by issuing the building consent, the territorial authority has implicitly granted such a waiver. Was such a waiver justified?
- 6.3.7 The Authority takes the view that, as a matter of general law, territorial authorities may not grant unreasonable waivers or modifications. What is reasonable depends on the facts of each particular case, but it would clearly be unreasonable for a territorial authority to grant a waiver or modification that threatened other property or that resulted in a “death trap” building.
- 6.3.8 Protection of other property in the 10% AEP storm is discussed above.
- 6.3.9 The Authority considers that even in a low probability storm there will be time for the occupants of the building to leave before they are in any danger from the collapse of the house. On that basis, and having taken account of the matters listed in section 47, the Authority takes the view that it was reasonable to grant a partial waiver of clause B1 in respect of the stability of the house in a low probability storm as an alternative to requiring the owner to, for example, provide fully piled foundations or otherwise protect the house from erosion in such a storm.
- 6.3.10 Although there is no specific requirement for a waiver or modification of the building code to be noted on the building consent, the Authority considers it good practice to do so.

6.4 Condition 4 of the building consent

- 6.4.1 The territorial authority said (see 5.9.3 above) that the requirement for fences in condition 4 of the building consent (see 3.5 above), was “specifically intended to protect adjacent properties from any seawater flowing around [the house] during major storm events”.
- 6.4.2 Both the author of the coastal hazard assessment and the Authority’s consultant agreed that the fences would protect the applicants’ property against inundation (see 5.4.2 and 5.10.1. above) in major storm events.
- 6.4.3 If the fences will do so in major storm events then they will clearly do so in a 10% AEP event. The Authority therefore concludes that condition 4 is appropriate to ensure that the house, together with its associated sitework, will protect other property against inundation by the sea to the extent required by clause E1.3.1 of the building code.

6.4.4 The Authority emphasises that the fences could be subjected to significant loads in such events, and need to be specifically designed to resist those loads in order to comply with the building code.

6.5 Condition under section 36(2) of the Building Act

6.5.1 The Authority takes the view that in this case section 36(2) of the Building Act (see 4.1 above) requires that the building consent shall include a specified condition, because:

- (a) The building consent is in respect of a building on land that is described in section 36(1)(a) because it is subject to certain natural hazards, including inundation and erosion, and
- (b) Adequate provision has not been made to protect either the land or the building against those hazards, but
- (c) The building will not accelerate, worsen, or result in those hazards.

The Authority considers that the purpose of section 36 is to enable owners to build on sites subject to natural hazards in certain circumstances and if the owner accepts the risk of doing so.

6.5.2 The applicants said that because of section 36 the territorial authority was “obliged to refuse to grant the building consent”, and that the Authority had jurisdiction in respect of section 36. The applicants also said that the Authority had made previous determinations related to section 36, and in particular Determination 99/004 had been considered by the Court of Appeal³ without any suggestion that the Authority had exceeded its jurisdiction.

6.5.3 The Authority notes that it made previous determinations related to section 36, including Determination 99/004, on the mistaken view that for a building on land subject to certain natural hazards, a section 36(2) entry on the certificate of title was necessary only if the building did not comply with the building code. The Court of Appeal corrected that view when it held in effect that an entry was required unless adequate provision had been made to protect not only the building but also the land.

6.5.4 In this case, adequate provision has not been made to protect the house against erosion, because of the partial waiver of clause B1, and no provision has been made to protect the land against inundation or erosion. Accordingly, the Authority takes the view that a section 36(2) entry on the certificate of title would be required as a matter of law.

7 WHAT IS TO BE DONE

³ *Logan v Auckland CC* 9/3/00, CA243/99.

- 7.1 It is not for the Authority to decide whether, and if so how, the house is to be brought to compliance with the provisions of clause E1.3.1 of the building code. That is a matter for the owner to propose and for the territorial authority to accept or reject, with any of the parties entitled to submit doubts or disputes to the Authority for another determination.

8 THE AUTHORITY'S DECISION

- 8.1 In accordance with section 20 of the Building Act, the Authority hereby determines that the proposed house does not comply with clause E1.3.1 of the building code.
- 8.2 The Authority accordingly reverses the territorial authority's decision to issue the building consent.

Signed for and on behalf of the Building Industry Authority

on 23 April 2004

A handwritten signature in black ink, appearing to read 'JULIAN' with a large, stylized flourish underneath.

John Ryan
Chief Executive