STAFF REPORT

TO: Environment & Planning Subcommittee - Commissioner Hearing

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REFERENCE: RM090878

SUBJECT: **SUSTAINABLE VENTURES LIMITED - REPORT REP10-05-14 -** Report prepared for the hearing of 12, 13 and 14 May 2010

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1. INTRODUCTION

Section 1.1 of the principle planner's report outlines the background to the application. The purpose of this report is to provide an assessment and recommendation for the land disturbance application RM090878.

2. APPLICATION BRIEF

2.1 Proposal

The land disturbance application as lodged and notified sought to undertake the following:

- earthworks to provide for building platforms and access ways. Excavation levels will vary because of the existing ground level 0.15 metres up to a maximum of 1.9 metres for some of the car parks/storage and water tank areas. Excavation will be undertaken in a staged manner in accordance with the staging of the units;

- land disturbance for the maintenance, repair and upgrade work of the existing rock revetment on site. This work is sought on the basis of generally maintaining a similar crest height to the existing rock bank.

- The applicant proposes that the maintenance and upgrade be undertaken progressively on a staged basis in accordance with the staging of the units. The existing rock protected bank is estimated to vary in height from between 4.4 - 4.9 metres above mean sea level. The report prepared by OCEL consultants which forms part of the application recommends an upgraded height of 5.0 metres AMSL.

- works on a cultural heritage site, where an Authority has been granted under the Historic Places Act 1993.

Location

The application site is located at 1112 Collingwood-Puponga Road, Pakawau, Golden Bay. The legal description of the land is Part Section 11 Square 15 and all land is contained in Certificate of Title NL96/197 (limited as to parcels). The 1.7 hectare site runs north to south along the coast, with the beach forming the eastern boundary and the Collingwood-Puponga Road the western boundary. The site occupies the central part of a coastal strip developed with a mix of baches and permanent homes.

The site can be described as a modified sand dune with a contour range of 3.65 to 6.05 metres above sea level. The property has been used as a camping ground for many years and has been a popular destination for holiday makers during the summer months. Grass covers most of the site, with a number of bushes and small trees around the periphery.

There has been some land disturbance on the site as noted in the Archaeological Site Investigation including the levelling of areas, provision of services and gardening. The site contains a series of occupation / midden areas, along the landward side (west) of the coastal dune in the Pakawau Campground parallel to the main Collingwood-Puponga road. Significant finds and features are described in the Archaeological Site Investigation the reader is directed to Appendix 6 “Report on Archaeological Site Investigation” Prepared by Dr Charles Sedgwick (2007) found in the consent application for more detailed information.

Several test holes were dug as part of the wastewater assessment carried out for the applicant. These showed topsoil for the first 100-200 millimetres. Three sites found moderately course graded sand. Light brown sandy soil was observed in the fourth hole down to one metre and then moderately course graded sand.

The site is underlain by permeable sands. The permeability test revealed a porous soil with very well-draining characteristics. The applicant tried to determine the soakage rate with a constant head permeameter, but had difficultly as the water drained too quickly. They estimate a drainage rate for saturated conditions of over 10 m/day. To translates to at least 10,000 litres per day for each square meter soakage used.

Hydrodynamic Characteristics of the Site

The site lies within the Pakawau village on the western coastline of Golden Bay and is orientated in a NNE/SSW direction. The coastline comprises a wide flat foreshore backed by a low dune system. Parts of the coast to the north and south of the site is protected from coastal hazards by a mix of informal protection structures, with the balance unprotected but stabilised to a degree in places by existing vegetation.

The entire 230 metre property frontage to the application site is protected by an existing partly disintegrating rock revetment structure. The revetment appears to have been in existence for some time and has almost certainly been periodically added to given the variable rock types present and degrees of weathering (Refer photograph 1).

The revetment has not been built to a specific design. The rock armour layer is variable in size and includes many oversized rocks. Some of the rocks have become isolated from the main revetment and are less effective in preventing erosion than would be the case if they were integrated into a competent structure. The revetment does not incorporate any bedding or geotextile filter layer, does not have any uniform face slope, nor is it built to any consistent height. It also contains concrete rubble and has vegetation growing through in places. The rock armour layer does not form a tight, interlocking matrix and the underlying base and bank material (sand and soil by appearance) is visible (Refer photographs 4 and 5). The base material is susceptible to wave erosion, which causes rock undermining and slumping, as well as upper bank failure. This is beginning to become more evident in a number of locations along the revetment.

Photograph 1: Rock revetment at site

The northern extremity of the revetment ends with some sporadic and minor rock work on the adjacent property and terminates at the southern end with an informal concrete topped ramp made of rubble and prestressed telephone poles (Refer photograph 2).

Photograph 2: Existing boat ramp at southern end of site

There are no protection works immediately to the south of the ramp, Coast Care dune restoration programme and vegetation planting has been undertaken to stabilise the low rear dune. (Refer photograph 3).

Photograph 3: Unprotected coastline to the south of the site

Photograph 4: Photograph illustrating the condition of much of the existing rock revetment

Photograph 5: Photograph illustrating the condition of much of the existing rock revetment

2.2 Zoning and Consent Requirements

The site is located within a Residential Zone, the Coastal Environment Area, Land Disturbance Area 1 and the Special Domestic Wastewater Disposal Area in the Tasman Resource Management Plan (TRMP).

The site is located within a Cultural Heritage Precinct with known archaeological sites on the property.

A coastal permit to disturb and occupy the coastal marine area is not considered to be required because the toe of the revetment is presently located above mean high water springs (MHWS).

The existing rock revetment structure is unauthorised. There are also no specific rules controlling the erection, repair, maintenance or upgrading of coastal hazard mitigation structures which lie above mean high water springs. However, the rock revetment falls within the definition of "building" under Chapter 2 of the Plan as it is understood to be in the order of 2 - 2.5 metres in height:

Building - means any structure (as defined in the Act) or part of a structure whether temporary or permanent, movable or immovable, including accessory buildings, but does not include:

(a) n/a
(b) fences, walls or retaining walls of up to 1.8 metres in height, not used for advertising or for any purpose other than as a fence or wall;
(c) structures that are both less than five square metres in area and less than 1.2 metres in height, except where such structures are for the purposes of damming, diverting, taking, or using water;
(d) n/a
(da) n/a
(e) n/a
(f) n/a
(g) n/a

The existing structure is unauthorised so granting consent to its repair and upgrade would retrospectively authorise it. As such any assessment of its repair and upgrade should treat the structure as a new activity. The structure does not comply with Permitted Activity Rule 18.11.2.1:

(a) The land use does not contravene any other applicable rule in chapters 16, 17 or 18 of this Plan.

(b) The activity is not the construction of a new building or the disposal of refuse.

(c) The activity is an extension to an existing building that does not:

(i) increase the ground floor area (as at 25 May 1996) by more than 50 percent; or
(ii) reduce the existing building setback to mean high water springs; or
(iii) increase the existing building height (not applicable in Commercial and Industrial zones with the exception of the Industrial zone and the Mixed Business Zone in the Richmond West Development Area, other than in the Light Industrial Zone location at Beach Road as shown on the planning maps).

and is deemed to be a discretionary activity under Rule 18.11.3.2. Council's discretion is limited to the following matters:

(1) The effects of the location, design and appearance of the building, including its scale, height, materials, landscaping and colour, on the amenity and natural character of the locality, including effects on:

(a) natural features;

(b) landscape and seascape values;

(c) significant natural values;

(d) the character of any existing development.

(2) The effects of natural hazards.

(3) The effects on a site of cultural significance to Maori.

(4) The duration of the consent (Section 123 of the Act) and the timing of reviews of conditions and purpose of reviews (Section 128).

(5) Financial contributions, bonds and covenants in respect of the performance of conditions, and administrative charges (Section 108).

Under Rule 18.5.2.5 the land disturbance activity, including the repair of the 230 metre rock revetment, is deemed to be a restricted discretionary activity, Council's discretion is limited to the following:

(1) The extent, timing, and duration of bare ground.

(2) The location, timing of construction, design and density of earthworks including roads, tracks or landings.

(3) The re-establishment of vegetation cover.

(4) The disposal and stabilisation of waste material or fill.

(5) Loss of or damage to soil.

(6) Damage to riparian vegetation or soil.

(7) Damage to animal or plant communities or habitats in water bodies or coastal water.

(8) Effects of the activity on river or stream flows.

(9) Sedimentation effects on subsurface streams or caves in karst.

(10) The potential for slope instability.

(11) The visual effects of the activity, including the effects and screening of the locality from excavations, heaps, dumps, spoil, materials, buildings and machinery.

(12) Potential damage to any cultural heritage site or area, including any archaeological site or site of significance to Māori.

(13) Damage to any natural habitat or feature.

(14) The duration of the consent (Section 123 of the Act) and the timing of reviews of conditions and purpose of reviews (Section 128).

(15) Financial contributions, bonds and covenants in respect of the performance of conditions, and administrative charges (Section 108).

Additional Matters for Destruction or Removal of Indigenous Vegetation

(27) The setting aside or creation of an esplanade reserve or esplanade strip as appropriate.

(28) The significance of the indigenous vegetation, including its representativeness, and significance as a habitat for indigenous fauna.

(29) The contribution of the indigenous vegetation to the protection of other natural values.

(30) The practicality of providing protection to the indigenous vegetation by setting aside or creating an esplanade reserve or esplanade strip.

Additional Matters for Earthworks within 200 metres of the Coastal Marine Area

(31)[(30)Proposed]

Effects on the landscape character, natural character and amenity value of the locality, having regard to:

(a) natural features and distinctive natural landforms;

(b) landscape and seascape values;

(c) significant natural values;

(d) the nature of any existing development.

The land disturbance does not comply with Permitted Activity Rule 16.13.6.1 as there are known Cultural Heritage sites present on the land and is deemed to be a Controlled Activity in accordance with Rule 16.13.6.2. Council's control is limited to the following:

(1) Any matters raised in a report prepared in accordance with requirement 19.2.1.14.

(2) Any matters raised in the authority granted by the NZ Historic Places Trust under the Historic Places Act 1993 that are relevant to the control of the design and construction of the proposed activity.

(3) Any matter necessary to ensure the protection of a cultural heritage site.

(4) Any matter necessary to ensure kaitiakitanga over a wāhi tapu site or wāhi tapu area.

(5) Any matters relevant to ensuring the appropriate management of a previously unknown cultural heritage site that is discovered during any land disturbance activities associated with the proposed activity.

Because this consent is part of a "bundle" of consents, including the land consent for the units, which is a non-complying activity by virtue of rule 17.1.3.5 the land disturbance application must also be assessed as a non-complying activity and meet the tests in S104 (d) of the Act.

3. NOTIFICATION

There were 84 submissions to the application. A number of submissions in opposition express a general concern with rock revetments per se as a means of hazard mitigation along the foreshore and the effects of them on the natural and visual amenity of the coastal environment and the hydrodynamics in the vicinity of the site.

It is also generally submitted that rock revetments are contrary to the Tasman District Council and community coast care work. A number of submitters state that the rock revetment should not be repaired, but replaced with grass plantings in accordance with the coast care programme and that any ongoing costs of maintaining the existing or any proposed structure should not be borne by ratepayers.

There is some concern that the surrounding properties will suffer greater erosion as a result of the presence of the revetment, concern is also expressed with any proposal to increase its scale. It is submitted that the area is a sand dune [sic] and should be allowed to continue to function as a dune - an area where sand is deposited and removed in balance with the changing energy dynamics of the sea. It is also submitted that as sea levels rise, the intertidal zone needs to be able to move inland to maintain functional ecosystems. This is reflected in other submissions which express concern about any upgrade to the existing rock revetment and suggest that it would compound damage to the natural character of the coast, adversely impact on public access and would be a liability for Council. It is submitted that the reserve/strip should be managed through the coast care programme in the same way as the existing area of esplanade reserve immediately to the south by the boat ramp with planting of spinifex and pingao.

The submission by the Director-General of Conservation is neutral in relation to the application as a whole and notes that the application addresses previous issues relating to the ability to provide for public access and amenity/landscape planting on the landward side of the coastal protection works. It is also noted that in proposing an esplanade strip, rather than a reserve, the applicant has also clarified that responsibility for maintaining or upgrading the coastal protection works would rest

with the landowner and not the Tasman District Council. The submission states that in considering proposals for an esplanade strip (or esplanade reserve) particular regard should be given to Policies 1.1.5 and 3.5.1 of the New Zealand Coastal Policy Statement (NZCPS) and to the objectives and policies in Chapter 8 of the TRMP. The Director General considers that it would be appropriate for the strip (or reserve) to provide for all of the purposes specified in section 229 of the Resource Management Act 1991. The submission acknowledges that coastal protection works have already been carried out within this property, and that much of the coastline at Pakawau has been modified to protect landward properties. However, proposal involves the existing rock revetment being progressively upgraded in accordance with the recommendations in the report by OCEL Consultants NZ Limited and this aspect should be considered against the requirements of the NZCPS (Policies 1.1.4, 1.1.5, 3.4.3 and 3.4.5) and the objectives and policies in Chapters 8 and 13 of the TRMP.

The Friends of Golden Bay (Inc) submit that the design and upkeep of the retaining wall and associated re-vegetation should be overseen by the Council. However, building costs and ongoing maintenance must be the responsibility of Sustainable Ventures and then the body corporate and that any ongoing problems that might be associated with the structure should not become the responsibility of ratepayers.

The submission from David Sissons states that he is generally neutral regarding the application. However, he is opposed to part of the earthworks consent application, specifically the rebuilding, maintenance and repair of the existing rock revetment. He submits that council should give consent for the installation of a sand-filled geotextile coastal protection structure, buried completely under the ground surface along the length of the building setback zone immediately landward (west) of the esplanade strip. This would allow the applicant to install it if and when he wishes. Alternatively Council may choose to require that this installation be completed as a condition of the land disturbance consent. He submits that if consent is granted he strongly recommends that Council impose conditions with respect to the establishment and implementation of a dune restoration programme which may involve the removal of existing rocks as necessary and that no consent be given for “structural” protection until the restoration programme has been attempted and been shown to be unable to manage the erosion risk. He submits that in assessing any resource consent application for structural protection, preference should be given to works that are designed as a buried backstop which will enable the Coast Care restoration of a vegetated dune system between them and the sea following severe erosion events.

The submission from C Nessen and R Gould does not support the progressive upgrade to the rock revetment. They submit that a comprehensive study of the entire area should be conducted and a best course of action suggested rather than taking a piecemeal approach which they submit would not be conductive to consistent maintenance of the dunes area fronting all their properties and may have a detrimental effect to properties on either side of the rock revetment.

4. ASSESSMENT

Cultural Heritage

There are known archaeological sites that are concentrated near the road boundary and an archaeological assessment as been undertaken for the site. An Authority has been granted by the New Zealand Historic Places Trust No. 2007/93.

The applicant has had an archaeological assessment carried out on site by Charles Sedgwick. Significant material was uncovered as part of the investigation. The applicant has been granted Authority Number 2007/93 HP 1103/11036-049 by the New Zealand Historic Places Trust. The works will be undertaken in accordance with the Authority.

Significant earthworks are required for this site. The details of the earthworks are examined below in the earthworks assessment.

There is no permitted baseline for this consent only a consented baseline (RM090843). This consent is for the earthworks required for the construction of an access way as part of the approved 11 lot subdivision.

There is no written approval from Manawheua Ki Mohua as required in rule 16.13.6.2 where the site is wahi tapu or wahi tapu area. However note 3 in rule 16.13.6.2 states that this is not required until Change 16 becomes operative. It should be noted that Iwi did not submit against the proposal.

The cultural heritage component of the land disturbance consent is deemed to be non-complying due to bundling principle. Section 104 (d) states a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either the adverse effects of the activity on the environment will be minor; or the application is for an activity that will not be contrary to the objectives and policies of the plan or proposed plan

Staff do not feel qualified to determine if the adverse effects of the activity in terms of cultural values and their potential significant will be minor. However it should be noted that:

(a) HPT have issued an Authority and that authority is to modify or damage an archaeological site; and

(b) Manawheua ki Mohua who are the representative iwi group did not make a submission to the application.

The application is consistent with policy 10.2.3.3 of the TRMP (see below). This policy allows for the activity to occur if the applicant has an Authority.

10.2.3.3 To ensure that where an activity may modify, damage or destroy a cultural heritage site that is an archaeological site, an authority to do this has been obtained under the Historic Places Act 1993.

Thus consent may be granted for this component of the activity as the test in 104(d) is met.

Earthworks

The application states that the work will be staged and in some years the earthworks proposed will be greater than 1000 square metres per year allowed in Rule 18.5.2.1.

Very little detail has been provided by the applicant in terms of how the earthworks will be undertaken. However there is some detail contained in the Archaeological Authority.

The site does not pose any significant constraints outside of the archaeological issues. The site is relatively flat and is composed of sand with a shallow layer of topsoil. Any sediment generated by erosion will be temporary, comprising of sand, this is unlikely to be a significant contamination issue on the beach

The visual effects of the earthworks will temporary in nature and detailed landscaping is proposed as part of this application.

The applicant has an HPT Archaeological Authority require by Permitted Activity Rule 18.5.2.1(w). The permitted baseline in this location is extensive. Most of the earthworks proposed by the applicant could be achieved if they disturb less than 1000 square metres in any 12 month period.

It is accepted that the applicant will not have a detailed work program and a sediment and erosion control program for the development at this stage. Given the lack of information provided in the application significant number of conditions are suggested. These are aimed at minimising any adverse effects.

The adverse effects from the earthworks to provide for building platforms and access ways should have adverse effects on the environment than are no more than minor. Most, if not all the works could be carried out as a permitted activity, if the applicant limits the land disturbed to less than 1000 square metres in any 12 month period. Additionally consent conditions have been proposed to limit the effects to no more than a minor degree.

The proposal in is not contrary to the relevant objectives and polices found in chapter 12 of the TRMP. Thus consent may be granted for this activity as the test in 104(d) is met.

Coastal

The application contains a report by OCEL Consultants Ltd that reviews coastal processes and hazards prevailing at this property, and the findings are in general concurred with, although some of the conclusions reached are not. These matters will be discussed in more detail in this assessment. The report also notes recent survey and tidal analysis work on Port Nelson tide gauge data and concludes that there is a close similarity between tidal patterns at Nelson and Pakawau.

The property is directly exposed to and has been the subject of coastal erosion and seawater inundation hazard from storm wave incidence. The shoreline is also potentially subject to the effects of tsunami, but this is considered to be an exceptionally unlikely event. Local source tsunami may generate from fault displacement in the bay or major cliff failure on shorelines adjacent to deeper water (eg northern Abel Tasman coastline). Distant source Pacific-generated tsunami would require significant refraction through Cook Strait into Tasman and Golden Bay. Both sources are considered extremely unlikely to generate wave heights of more than 1-2m elevation. Tsunami risk has not been assessed per se, but such an event is considered to have an exceptionally low probability of occurrence, as well as generating a wave height similar to severe storm-generated waves, but with more energy and wave run-up potential.

The investigations undertaken by OCEL Consultants in preparation of the application is summarised as follows.

- The frequency of occurrence and duration of less than benign near shore wave conditions on this shoreline are significantly less than would be expected on an open ocean coastline;

- The broad flat beach and large tide range combine to provide good protection to the coastline by encouraging early wave breaking and energy dissipation as the water shallows and by ensuring that for a large proportion of the time the breaking wave zone is seaward of the upper beach.

- While there are episodes where combinations of wave conditions, high tide, and storm surge coincide to expose the beach scarp to erosion, such combinations are relatively infrequent.

As noted in the application and OCEL report on coastal hazards, storm waves generated in Golden Bay only reach modest heights compared to open coast shorelines. Nevertheless, winds from the east and southeast, while not predominant, can generate storm waves and wave runup on the low and narrow beach that can and have caused episodic erosion damage on this shoreline and on the NW coast of Golden Bay. This is evidenced by the presence of rock revetment works at Waikato to the south, along this property frontage and along parts of the shoreline to the north up to Puponga.

The OCEL report provides a very useful comparison of shoreline location (edge of vegetation) derived from several aerial photographic records dating back to 1950, as well as a 1921 cadastral boundary. The plots indicate a coastline location that is modestly dynamic but in relative equilibrium during this period. Episodes of storm erosion have been followed by beach rebuilding and recovery, with the shoreline location varying historically within approximately a 10m envelope. Thus, for the most part, long term erosion rates on this coastline are relatively low in most locations, including on the property frontage. Rock revetment protection works have been built more as a result of the proximity of built development and roading to the shoreline, rather than in response to persistent or high episodic erosion rates “permanently” removing significant land buffers that may once have been present.

The OCEL report notes the physical setting of the applicant’s land abutting a shallow gradient intertidal platform. In most present day circumstances, waves tend to break on the intertidal platform, expending much of their energy. This results in a relatively modest wave run-up impact on the shoreline and consequently relatively low erosion rates. These rates can vary depending on the prevailing backshore slope, quality of dune vegetation present, sediment transport balance and the nature of any protection works. In storm situations, wave run-up and impact on the dune toe increases significantly and erosion potential along the shoreline increases, particularly if the storm event coincides with high spring tides. This is observable on the coast immediately south of the applicant’s property. Here erosion retreat has occurred and an erosion scarp has formed along the dune face. The dune is comprised of relatively unconsolidated, highly erodible sand, with erosion rates moderated to some degree by dune planting through Coast Care initiatives.

Inundation risk on this property shoreline at present is considered to be relatively low due to the height of the backshore at over 4m and up to 5-6m above mean sea level over much of the title.

Present day erosion and inundation hazard risk will increase on this shallow gradient shoreline as a result of climate change and potential sea level rise. The OCEL report cites recent NIWA analysis of the Port Nelson tide gauge record, that suggests a minimum ground level for development in severe storm/ high tide coincidence (having an AEP of 0.5% or two hundred year return period on average, but without wave runup effects taken into account) of RL 3.65m above mean sea level (AMSL). This takes into account a 0.8m sea level rise, although for new residential subdivision, a 1.0m sea level rise is recommended to be used. This would produce a still water depth at the toe of the rock revetment of 1.25-1.45m

The MfE report "Preparing for Coastal Change - A Guide for Local Government in NZ" published in March 2009 recommends that a sea level rise of 0.5m be allowed for in 2090-2099 relative to the 1980-1999 level. It also recommends that the consequences of a 0.8m sea level rise be considered. The OCEL Nov 09 report allows for 0.8m sea level rise, although SLR of 1.0m by 2090 is considered appropriate, given the nature of the new development. Consequently, in the long term, the potential effects with respect to increased erosion potential on this shoreline and wave runup impacts on the backshore are significant.

In an increasing sea level rise climate, several coastal process effects intensify or become more frequent. With increasing water depth, larger waves break nearer the shore, increasing wave erosion potential and increasing the frequency and extent of wave runup and thus seawater inundation potential. Coastal erosion trends increase in response to an increase nearshore water depth, with shoreline erosion occurring to increase the elevation of the nearshore beach and tidal platform, to maintain a dynamic equilibrium across the beach interface.

Wave runup height increases with nearshore water depth increase, due to larger waves being able to reach nearer the beach. This effect is enhanced by obstructions such as rock revetments that prevent backbeach erosion, resulting in beach lowering in front of the revetment.

In the longer term, natural shorelines will adjust to the new wave climate environment in a climate change world. However, on this property shoreline, the relatively narrow depth of the property is such that the proposed apartment developments fixed permanently to the landscape will ultimately be significantly adversely affected by erosion (and inundation).

In addition to the coastal process and hazard assessment report prepared by OCEL for the applicant, Council has commissioned a further report from Eco Nomos Ltd to investigate coastal hazard mitigation options for both the approved 10 lot subdivision and the proposed development (Refer Attachment 3). This report investigates and assesses the potential effects of coastal processes on this shoreline, under present day and with future climate change influences prevailing, and examines in further detail the options and effects of soft and hard engineering hazard mitigation measures for the development proposal. The findings in this report are referred to in the ongoing assessment. It is noted that there are differences in opinion between OCEL and Eco Nomos assessments on a number of matters that will require

resolution, particularly with respect to the design requirements of the applicant's preferred rock revetment method for hazard mitigation in a potential future climate change setting.

Coastal Hazard Mitigation

If consent is granted the dry land interface with the nearshore beach will be located within an esplanade strip which shall remain in private ownership, with an easement over a 20 metre strip of land from mean high water springs. The location of the strip will move with any changes in the location of mean high water springs over time. Protection and maintenance of this interface and land behind will be the responsibility of the landowner into the future. However, while maintenance of a rock revetment structure may remain entirely the responsibility of the applicant or apartment owners, a soft engineering management option is likely to be supported by Council in association with the ongoing coast care work being undertaken at various sites in the Bay.

Coastal erosion and inundation hazard risks to the development (should consent be granted) can be mitigated to a significant degree in a number of ways and be effective over varying time frames. However, in reality, the choices are realistically limited to a hard engineering rock revetment structure as proposed, or through softer engineering techniques such as coastal vegetation management (Coast Care works). Soft engineering options can include embedded hard engineering options for a "hybrid" solution.

i) Hard Engineering Options

The property shoreline is presently protected to a modest degree by an unauthorised rock revetment. Contrary to the conclusion drawn in the OCEL report, this revetment was built by the then landowner some time in the 1970's rather than 1995-2000, as far as can be determined from letters written to various authorities seeking assistance for the work. The OCEL report notes that the present revetment has provided adequate protection and is likely to do so for some time. This is true to some extent, but the structure has no specific design or construction integrity, has partially failed and has a number of weaknesses that expose the land behind to erosion that will hasten its demise unless maintenance is ongoing.

The existing revetment has variable integrity, comprises a number of unsuitable armouring elements (including oversize rock and concrete blocks etc), has vegetation growing within and through the structure and is straddled by almost derelict beach access stairways. In its favour to some degree is the fact that the revetment has been there for some years, and rock settlement into the beach will likely have reached a stable depth for the present day wave climate. However, given the nature of the proposed development, present rock revetment functionality is limited. It certainly does not provide a sufficient erosion or wave overtopping hazard mitigation measure in the long term and in a climate change environment, and this is acknowledged by OCEL.

The proposed revetment design incorporates some of the necessary elements of rock revetment design eg double layer armouring rock on suitable bedding (generally graded rock or geotextile media beneath the armour layers), reasonable front face slope (2H:1V) and nominated crest height, toe depth and armour rock size. However,

some doubt is cast on whether appropriate allowance has been made for the last 3 parameters (crest height, toe depth and armour layer rock grading) for the structure in the long term, commensurate with the projected lifetime of the proposed developments behind, taking into account projected climate change.

It is considered that the proposed revetment structure is not founded to a sufficient depth so as to be below future potential scour depth (below potential future beach level that will likely decrease below present levels due to increased water depth and storm wave action). The design grading for the rock revetment armour layer has not been indicated other than to note the minimum rock size used. This minimum size is likely to be too small to provide effective protection and maintain structure integrity, particularly when exposed to wave forces generated in a projected future climate near shore water depth during a storm/high tide event. A rock armour grading has not been provided or design calculations included in the report, to demonstrate adequacy and competence of the proposed rock armour size for either a present day or future wave climate scenario.

The proposed crest height is considered only suitable for adequately mitigating wave overtopping in a present day wave climate. OCEL have calculated that a higher revetment height is necessary to mitigate the potential effects of wave run-up on the esplanade, now and certainly into the future. However, an interim revetment height may be able to be adopted for the short to medium term (potentially 20-50 years) that provides adequate protection against wave runup. Land above a revetment crest level around RL 4.50m can be reasonably afforded by appropriate vegetation plantings which will also provide some softening to the visual impact of the structure. While this may be acceptable in the interim, allowance must be made for increasing the revetment crest level to a height likely to exceed RL 6.0m, if wave overtopping effects in the future are to be appropriately mitigated.

The applicant proposes that the existing revetment be progressively upgraded to modern design standards as maintenance requirements and staged development of the apartments occur. This could lead to a protracted reconstruction of the revetment to modern design standards, complete with potential adverse visual amenity, environmental impact and provision of a variable degree of erosion hazard mitigation to the land behind for an indeterminate time. If consent for the construction of a revetment is granted, then it is recommended that the entire revetment construction work be undertaken at one time, to ensure appropriate structural integrity is provided and to avoid protracted and potentially significant adverse effects arising from staged, piecemeal construction.

The revetment needs to be effectively tied back into the existing upper beach at the northern and southern extremities of the structure in order to mitigate end effect erosion occurring. This is a critical aspect of both the wall and shoreline stability at each end of the revetment and must be appropriately designed and constructed. No indication has been given in the application or OCEL report as to how the revetment will be tied back into land to avoid end effects occurring beyond the extent of the property frontage. This is indicated as being provided in the final design. However, I do not agree that future end effects from a rebuilt revetment will be similar to that presently experienced, due to the increase in wave energy in a future sea level rise wave climate. Further, existing beach erosion protection works of a structural nature adjacent to the applicant's property are informal, and have little to no integrity or functional reliability. Continuing presence of the informal erosion protection works or

termination of the proposed rock revetment works on land either side of the applicant's property cannot be assumed to occur or be acceptable without approval from Council as landowner of the adjacent reserves.

The existing revetment is crossed by several timber step structures, all of which are in a state of disrepair. All these structures should be removed. The proposed revetment design does not indicate if, when or where access structures will be rebuilt or replaced. If any access structures are proposed, an appropriate number and location need to be determined and be constructed so as to be structurally independent of the revetment. Any access structures need to be designed to be able to withstand the sea conditions experienced at the site at present and into the future, over their projected lifetime.

Although the property is fronted by an existing rock revetment and some of the coastline in the vicinity of the site is also no longer "natural", there is a significant amount of existing vegetation growing behind and within the structures themselves. This has the effect of significantly softening the visual impact of the revetment. As already discussed, in order to protect both public access along the coastal marine area and the proposed development from coastal hazards, any grant of approval for a revetment will result in significant construction work that will require much of the shoreline vegetation to be removed. This will result in a visually much more dominant structure than at present which will have a significant adverse impact on the amenity of the coastal environment area.

ii) Soft Engineering Options

The OCEL report acknowledges the nature and use of coast care works and also notes their limitations in certain circumstances. Soft engineering options typically involve beach replenishment and more commonly "coast care" works and both are recognised methods for managing shoreline dynamics and hazard risk in appropriate circumstances. However, soft engineering options face the additional paradigm of rock revetments being the "default" method to provide coastal erosion protection, even in situations where soft engineering options are both preferable and viable.

There are a number of factors that make the coastal hazard risks on this shoreline amenable to soft engineering management, at least in the short to medium term. The shoreline assessment by OCEL indicates that this shoreline has historically been relatively stable within a reasonably narrow albeit dynamic 10m wide range. The shoreline to the north of the property consists largely of Council reserve that is in a relatively natural state, due mainly to the low incidence of historical erosion events. Coastal development has also been relatively modest in intensity and scale and reasonably well set back from active coastal processes.

While some erosion control works of a structural nature have occurred on other parts of the Pakawau community shoreline, most are low key and small scale. The OCEL analysis of historical shoreline locations being dynamic but reasonably constrained would suggest that erosion mitigation works have most likely taken place as a "knee jerk" response to periodic occurrences of smaller scale storm cut events, rather than as a concerted defence against a persistent erosion problem.

Soft engineering options to mitigate coastal erosion are being pursued with the help of local communities in many locations in Golden Bay, including immediately to the south of this property and at the northern end of the Pakawau community. However, at this property, former land owner(s) have chosen to construct a rock revetment, with the tacit acceptance of former local government authorities.

Some submitters to this application advocate for soft engineering options to be utilised to mitigate coastal hazard risks to the proposed development and the shoreline in this location generally. Dune revegetation works have been undertaken on the coast immediately to the south of the applicant site, with some degree of initial success. However, it is fair to say that the end effects of the revetment to the north during a recent storm have significantly affected the success of this fledgling coast care management trial in his small area.

It has already been noted that the backshore edge of vegetation fronting this property has remained within an envelope of some 10m width over the last 60 years, indicating relative shoreline stability. Under these circumstances, it is worth considering maintaining the proposed reserve shoreline through coast care type works. Such works would restore a more natural interface with the coast and be more visually in keeping with the adjacent shorelines to the north and south of the property.

Hazard management using a coast care approach would require the entire removal of the existing (unauthorised) revetment structure, involve some foreshore escarpment shaping and then complete replanting. Removal of the existing revetment works will be a significant work in its own right. To retain and bury the existing revetment is not recommended, as while sand for beach replenishment may be available from some local source, very large volumes would be required to be effective and would result in the formation of a local discontinuity in beach shoreline profile. More importantly however is that at some point an erosion phase or phases will remove this replenishment and expose the rock work beneath. Once exposed, it is unlikely that the revetment would become buried and revegetated again

The report from Eco Nomos Ltd notes that soft engineering solutions to manage coastal hazard risks are viable on this shoreline for a range of timeframes, depending on the nature of the development behind. With the type of development proposed, soft engineering solutions are only considered viable in the short to medium term at most.

The length of time that a stand alone soft engineering solution would remain fully viable also needs to take into account the use of the land between the development and the coast for other uses, including public access and provision of land for waste disposal fields. As a result, soft engineering solutions may only be viable in the short term, perhaps up to 20 years, before alternate measures for hazard management are required to be considered.

Alternative measures include the use of “hybrid” solutions, which are also discussed. These solutions include the inclusion of a hard engineering “backstop” to protect the development from extreme storm wave cut events in the future. However, a hybrid solution if set too close to the development may not allow for other land use requirements between the development and the coast (such as waste disposal fields) and thus not prolong the life of this management method to any significant degree.

The region's coastlines appear to be experiencing a higher incidence of erosion events. As climate change progressively occurs, it is anticipated that increasing frequency of storms and sea level rise will increase the erosion (and inundation) hazard risk and potential on this shoreline. Thus while a soft engineering solution may have some traction and success for a number of years, perhaps decades, eventually the esplanade width will diminish and result ultimately in the requirement for relocation of development behind, or hard engineering solutions to protect that development.

The proposed esplanade is contiguous with esplanade reserves to the south and marginal strips on the two adjoining properties to the north and from there north to the mouth of the Pakawau inlet via a combination of esplanade reserves (with one yet to be vested), Council and DoC land. Although there are no specific or unique features of this particular esplanade that would necessarily warrant Council to consider protecting it for the use of future generations, because significant esplanade reserves exist to the north and south Council may place a higher priority on the maintenance and protection of these assets into the future and may also face increasing pressure from the community to become involved.

In summary, we consider that managing the coastal hazard erosion and inundation risk over the potential lifetime of the apartment development as proposed cannot be achieved through the use of soft or hybrid engineering solutions, or through the construction of the rock revetment, in a manner that is consistent with good coastal planning. A soft engineering solution does not provide the necessary hazard mitigation to the proposed apartment development over its projected lifetime. A hybrid management response progressively translates into a hard engineering solution, but with some delay in terms of the adverse effects on the coast becoming manifest. This hybrid option and the use of a rock revetment as proposed for hazard mitigation are both inconsistent with the NZCPS and Council planning documents, as significant adverse effects on the environment are not able to be avoided. This is because the immovable nature of the proposed development does not allow for a soft engineering hazard management solution to be implemented, were structures could be required to be set back further on the title or relocated elsewhere, should hazard risks become untenable. However, a change in the nature of development on this property, that would allow future set back or relocation to occur, is both possible and would consistent with the NZCPS, RPS and the policies and objectives in the TRMP. These matters are further discussed below.

4. New Zealand Coastal Policy Statement, Regional Policy Statement and Tasman Resource Management Plan

4.1 Objectives and Policies

New Zealand Coastal Policy Statement (NZCPS)

The NZCPS provides national guidance to consent authorities in the management of the coastal environment.

The general policy direction of the NZCPS seeks:

a) To set national priorities for the preservation of the natural character of the coastal environment.

b) To protect characteristics of the coastal environment of special value to the tangata whenua, in accordance with tikanga Maori.

c) That adverse effects of use or development in the coastal environment should as far as practicable be avoided. Where complete avoidance is not practicable, the adverse effects should be mitigated and provision made for remedying those effects, to the fullest extent practicable.

Policy 1.1.4 states that it is a national priority to preserve the natural character of the coastal environment to protect the integrity, functioning and resilience of the coastal environment in terms of several features, including the dynamic processes and features arising from the natural movements of sediments, water and air, and the intrinsic values of the ecosystem.

Policy 1.1.5 states that it is a national priority to restore and rehabilitate the natural character of the coastal environment where appropriate.

Policy 3.2.4 states that provision should be made that the cumulative effects of activities, collectively, in the coastal environment are not adverse to a significant degree.

Policy 3.2.5 states that subdivision, use and development in the coastal environment should be conditional on the provision of adequate services (particularly the disposal of wastes), and the adverse effects of providing those services should be taken into account when preparing policy statements and plans and when considering applications for resource consents.

Policy 3.4.3 states that the ability of natural features such as beaches, sand dunes, mangroves, wetlands and barrier islands, to protect subdivision, use, or development should be recognised and maintained, and where appropriate, steps should be required to enhance that ability.

Policy 3.4.5 states that new subdivision, use and development should be so located and designed that the need for hazard protection works is avoided.

Policy 3.4.6 states that where existing subdivision, use or development is threatened by a coastal hazard, coastal protection works should be permitted only where they are the best practicable option for the future. The abandonment or relocation of existing structures should be considered among the options. Where coastal protection works are the best practicable options, they should be located and designed so as to avoid adverse environmental effects to the extent practicable.

Tasman Regional Policy Statement (RPS)

The general objectives in the Council's RPS reflect those in the NZCPS and include the need to protect and enhance significant natural, heritage and cultural values of resources.

The objectives and policies in Sections 9 and 12 include the following:

Objective 9.5 - Preservation of the natural character of the coastal environment, including the functioning of natural processes;

Objective 9.6 - Coastal land use and development that avoids, remedies or where appropriate mitigates adverse effects on:

(i) Natural character, including natural processes, outstanding natural features and landscapes, and areas of significant indigenous vegetation and significant habitats of indigenous fauna; and

(ii) Public access to and along the coast; and

(iii) Amenity values; and

(iv) Heritage values; and

(v) Maori traditional associations with any coastal lands, waters, sites wahi tapu, and other taonga; and

(vi) The natural qualities of coastal waters
(vii)

Policy 9.7 states that the Council will avoid, remedy or where appropriate, mitigate adverse effects of the subdivision, use or development of coastal land on:

(a) coastal habitats, including wetlands, estuaries and dunes;

(b) coastal ecosystems, especially those including rare or endangered species or communities, and indigenous or migratory species;

(c) natural coastal features and landscapes, including headlands, beaches, spits;

(d) sites of coastal processes;

(e) public access to and along the coastal marine area;

(f) water and air quality;

(g) traditional associations of Maori with ancestral coastal lands, waters, sites, wahi tapu, turanga waka, mahinga mataitai, taonga raranga and other taonga;

having regard to the:

(h) rarity or representativeness;

(i) coherence and intactness;

(j) vulnerability or resilience;

(k) interdependence; and

(l) scientific, cultural, historic or amenity values;

of such habitats, ecosystems, features, landscapes, sites, values or taonga

Tasman Resource Management Plan

The thrust of the objectives and policies in the NZCPS and RPS are mirrored in the TRMP. Chapters 8, 10 and 12 are considered to be most relevant to this application.

Chapter 8 outlines Council's objectives and policies with respect to the margins of rivers, lakes, wetlands and the coast. When considering applications for subdivision and land use consents in areas adjacent to lakes, rivers, wetlands or the coast, Council is required to have regard to the matters of national importance identified in Section 6 of the Act.

Objective 8.1.2 requires the maintenance and enhancement of public access to and along the margins of lakes, rivers, wetlands and the coast, which are of recreational value to the public.

Policy 8.1.3.1 seeks to maintain and enhance public access to and along the margins of water bodies and the coast while avoiding, remedying or mitigating adverse effects on other resources or values, including: indigenous vegetation and habitat; public health, safety, security and infrastructure; cultural values; and use of adjoining private land.

Objective 8.2.2 requires the maintenance and enhancement of the natural character of the margins of the coast, and the protection of that character from adverse effects of the subdivision, use, development or maintenance of land or other resources, including effects on landform, vegetation, habitats, ecosystems and natural processes.

Policy 8.2.3.1 seeks to maintain and enhance riparian vegetation, particularly indigenous vegetation, as an element of the natural character and functioning of the coast and its margin.

Policy 8.2.3.6 seeks the adoption of a cautious approach in decisions affecting the margins of lakes, rivers and wetlands, and the coastal environment, when there is uncertainty about the likely effects of an activity.

Policy 8.2.3.17 seeks to pursue and encourage restoration and enhancement of coastal and riparian areas where natural character has been degraded by past human activities.

Policy 8.2.3.18 seeks to avoid, remedy or mitigate adverse effects on natural coastal processes of the subdivision, use or development of land, taking account of sea-level rise.

Policy 8.2.3.21 seeks to protect historic and cultural sites in riparian margins and the coastal environment.

Chapter 10 outlines Councils objectives and policies with respect to Significant Natural Values and Historic Heritage in the district

Objective 10.2.2 requires the protection, enhancement and, where appropriate, the management of historic heritage sites, including cultural heritage sites; heritage buildings and structures; and protected trees, for their contribution to the character, identity, wairua, and visual amenity of the District.

Policy 10.2.3.2 aims to reduce the risk of modification, damage or destruction of cultural heritage sites arising from any co-location of subdivision and development activities and such sites.

Policy 10.2.3.3 aims to ensure that where an activity may modify, damage or destroy a cultural heritage site that is an archaeological site, an authority to do this has been obtained under the Historic Places Act 1993.

Policy 10.2.3.4 aims to ensure that where an activity that requires a resource consent may have an adverse effect on the wairua or other cultural or spiritual values associated with a wāhi tapu, that activity has been approved by manawhenua iwi as an affected party.

Policy 10.2.3.5 aims to encourage alternative use of heritage buildings and structures where that will assist their preservation and maintenance.

Policy 10.2.3.6 aims to foster community responsibility for the cultural heritage values of the District.

Policy 10.2.3.8 requires Council to be responsive and collaborative in the generation, sharing and management of information about cultural heritage sites that have archaeological significance or other cultural heritage value, and accordingly to work with manawhenua iwi, the NZ Historic Places Trust, the New Zealand Archaeological Association and landowners in managing cultural heritage site information.

Policy 10.2.3.9 seeks that Council work with manawhenua iwi in the sharing and management of information about cultural heritage sites that are of Maori origin, including wāhi tapu.

Policy 10.2.3.10 requires that Council take into account uncertainties associated with the accuracy and quality of information, in the verification, storage, listing and map representation of cultural heritage sites, and the appropriate use of that information in the management and protection of those sites.

Policy 10.2.3.11 aims that Council designs and implements appropriate processes, tools and methods for the verification, storage, listing and map representation of cultural heritage sites that are responsive to the discovery of new cultural heritage sites and new information about already known sites.

Policy 10.2.3.12 aims to ensure that information about known cultural heritage sites is publicly accessible (including amendments to existing information), is transparent, and is communicated publicly.

Policy 10.2.3.13 aims to raise community awareness about the values associated with cultural heritage sites and the obligations of landowners to avoid, remedy or mitigate the effects of activities that might result in the modification, damage or destruction of such sites.

Policy 10.2.3.14 aims to exercise Council's statutory responsibilities by facilitating effective communication between landowners, manawhenua iwi, the New Zealand Historic Places Trust and the New Zealand Archaeological Association, over the management of activities that have the potential to have an adverse effect on cultural heritage sites, for the purpose of protecting, enhancing and, where appropriate, managing the management and protection of cultural heritage values.

Policy 10.2.3.15 requires that Council account for the values of manawhenua iwi by acknowledging the manawhenua iwi as kaitiaki in relation to cultural heritage sites of significance to Maori in the District.

Chapter 12 outlines Councils objectives and policies with respect to land disturbance activities in the district

Objective 12.1.1 aims to avoid, remedy, or mitigate the adverse effects of land disturbance, including:

The avoidance, remedying, or mitigation of adverse effects of land disturbance, including:

(a) damage to soil;

(b) acceleration of the loss of soil;

(c) sediment contamination of water and deposition of debris into rivers, streams, lakes, wetlands, karst systems, and the coast;

(d) damage to river beds, karst features, land, fisheries or wildlife habitats, or structures through deposition, erosion or inundation;

(e) adverse visual effects;

(f) damage or destruction of indigenous animal, plant, and trout and salmon habitats, including cave habitats, or of sites or areas of cultural heritage significance;

(g) adverse effects on indigenous biodiversity or other intrinsic values of ecosystems.

Policy 12.1.3.1 aims to promote land use practices that avoid, remedy, or mitigate the adverse effects of land disturbance on the environment.

Policy 12.1.3.2 To avoid, remedy, or mitigate the actual or potential soil erosion or damage, sedimentation, and other adverse effects of land disturbance activities consistent with their risks on different terrains in the District, including consideration of:

(a) natural erosion risk, and erosion risk upon disturbance;
(b) scale, type, and likelihood of land disturbance;
(c) sensitivity and significance of water bodies and other natural features in relation to sedimentation or movement of debris.

4.2 Assessment of activity against the Objectives and Policies in the NZCPS, RPS and TRMP

It is acknowledged that the existing rock revetment has mitigated coastal hazards on the property for a significant period of time. It is also acknowledged that the repair, ongoing maintenance and future upgrading of the rock revetment may be able to provide for the long term protection of the proposed development from coastal hazards and the adequate disposal of wastes as required under section 106 of the Resource Management Act 1991 and policy 3.2.5 of the NZCPS. However, it is considered that the repair and future upgrading required to mitigate the effects of sea level rise will result in a visually much more dominant structure which will have a greater impact on the natural character and amenity of the coastal environment and is likely to have adverse effects on high tide access to the beach and to the immediate hydrodynamic environment.

The proposed works will not protect the integrity, functioning and resilience of the dynamic processes and features arising from the natural movements of sediments as required in policy 1.1.4 of the NZCPS, objective 9.5, 9.6 and 9.7 of the RPS and objective 8.2.2 and policy 8.2.3.1 of the TRMP.

Although it is acknowledged that the effects of the existing revetment on the amenity of the coastal environment have been mitigated to a degree by the weathering of the existing rock armouring and the existing vegetation growing through the structure, the proposed works will require the partial or complete removal of this vegetation and the placement of additional imported rock. The effects of this will not facilitate the restoration or rehabilitation of the natural character of the coastal environment as required by policy 1.1.5 of the NZCPS or policy 8.2.3.17 of the TRMP.

The grant of consent for the proposed works and likely end effects on adjoining properties is likely to encourage increased pressure for Council to provide its support for additional hard rock revetments along the Pakawau coastline generally. Members of the Pakawau community have already approached Council requesting support for the establishment of further hard rock revetments to mitigate the existing hazard. Council's response to this request was that the construction of additional rock revetments would not be consistent with the objectives and policies in the NZCPS, RPS and TRMP with respect to public access (including high tide access to the beach), would not protect the natural character of the coastal environment and would have adverse effects on the hydrodynamics in the vicinity of the site.

Policy 3.2.4 of the NZCPS states that provision should be made that the cumulative effects of activities, collectively, in the coastal environment are not adverse to a significant degree. It is considered that the likely cumulative effects of providing for the proposed and other additional rock revetments along this coastline will include the loss of high tide access to the beach and a deterioration of the natural character of the coastal environment.

Policy 3.4.3 of the NZCPS states that the ability of natural features such as beaches, sand dunes, mangroves, wetlands and barrier islands, to protect subdivision, use, or development should be recognised and maintained, and where appropriate, steps should be required to enhance that ability. The maintenance and upgrade of the existing rock revetment will not enhance the ability of the existing dune to protect the proposed use of the site.

Both the independent report from Eco Nomos and the applicant's consultants OCEL acknowledge that hazard mitigation works are required to be maintained in the short term and upgraded in the longer term in order to protect the proposed development from erosion exacerbated by sea level rise. This is contrary to Policy 3.4.5 of the NZCPS which states that new subdivision, use and development should be located and designed so that the need for hazard protection works is avoided. Policy 3.4.6 of the NZCPS refers to circumstances where existing subdivision, use or development is threatened by a coastal hazard and states that coastal protection works should be permitted only where they are the best practicable option for the future. The abandonment or relocation of existing structures should be considered among the options. Where coastal protection works are the best practicable options, they should be located and designed so as to avoid adverse environmental effects to the extent practicable.

5. CONCLUSION

As a consequence of the bundling principle the proposed land disturbance activities are required to be considered as non-complying activities under section 104 (D) as the principle land use application is a non-complying activity.

Having considered each component of the land disturbance activity we consider that the adverse effects resulting from the formation of the building platforms and access ways and works on a heritage site are able to be avoided, remedied or mitigated by the recommended conditions of consent. However, we consider the adverse effects of the repair, maintenance and upgrading of the rock revetment will be more than minor on the natural character of the coastal environment, public access and the hydrodynamic environment. We also consider that it will be contrary to the objectives and policies in the TRMP. As such the activity would not pass the threshold tests under section 104 (D).

While we have come to this conclusion, it is acknowledged that if consent is granted to the development in its current form some type of hazard mitigation will be required to protect the development into the future. The Eco Nomos report suggests that alternative soft engineering options could be implemented which would lessen the adverse effects on natural character, public access and the hydrodynamic environment in the short to medium term. However, it is still envisaged that a harder engineering option with the attendant adverse effects described will be inevitable at some future date to protect what is effectively a permanent immovable development from coastal hazards resulting from projected sea level rise.

In our minds it is the inability of the proposed development to retreat from future coastal hazards which sets this application apart from a more complying subdivision where both the dwellings, public access and effluent disposal areas can be relocated in response to future coastal hazards and if required, relocated from the site if retreat landward is necessary.

6. RECOMMENDATION

Pursuant to Section 104 (B) of the Resource Management Act 1991, we recommend the following:

- Council **APPROVES** the earthworks to provide for building platforms and access ways;

- Council **APPROVES** works on a cultural heritage site.

Pursuant to both Sections 104(B) and (D) of the Resource Management Act 1991, we recommend the following:

- Council **DECLINES** the land disturbance for the maintenance, repair and upgrade work of the existing rock revetment on site.

However, if Council is of a mind to approve the principle land use and subdivision application (as applied for) some form of coastal hazard mitigation will be needed. There are a number of possible options, these include:

Option 1

Grant consent to repair, maintain and upgrade the existing unauthorised rock revetment.

We consider that this option would result in more than minor adverse effects on natural character, public access, and on the hydrodynamics of the immediate coastal margin and would be contrary to the objectives and policies in the NZCPS, RPS and TRMP.

Option 2

Remove the existing rock revetment and restore a natural dune buffer including the establishment and implementation of a dune restoration programme.

This would restore the natural character of the coastal environment and minimise adverse effects on public access and the hydrodynamics of the immediate coastal margin. However, it is unlikely to provide adequate long term hazard mitigation for the development.

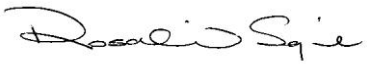
Option 3

Remove the existing rock revetment and restore a natural dune buffer including the establishment and implementation of a dune restoration programme. This would be coupled with a requirement to construct a hard engineered structure once erosion encroached within 20 metres of the buildings (The rationale for this setback is the need to provide a buffer between the buildings for wastewater treatment and public access).

The Eco Nomos report suggests a geotextile container structure as a backstop measure rather than a rock revetment as this would facilitate its removal in the longer term (50-100 years) as erosion worsens with increasing sea level rise. However, we consider that whatever structure is used as a backstop measure it would need to be able to withstand anticipated coastal erosion for a longer period of time otherwise the buildings and property will have a severely limited life.

This option would restore the natural character of the coastal environment and minimise adverse effects on public access and the hydrodynamics of the immediate coastal margin. It would also provide for more secure long term protection for the development. However, it is likely to result in the identified adverse effects of hard engineered options occurring within the 50 -100 year time frame as opposed to now.

A set of recommended consent conditions for the two components of the land disturbance consent which are recommended for approval is provided in Attachment 1. A set of conditions is also provided to enable the repair, maintenance and upgrade if consent to that component of the land disturbance is granted or a "hybrid" option if Council is of a mind to recommend that to the applicants as an alternative option.



Rosalind Squire
Consent Planner, Coastal

Eric Verstappen
Resource Scientist, Rivers and Coast

Leif Pigott
Co-ordinator, Natural Resources

Earthworks to provide for building platforms and access ways

1. The Consent Holder shall ensure that all works are carried out in general accordance with the information received on 18th December 2009 in support of the application for resource consent RM090878. If there are any inconsistencies between this information and the conditions of consent, the conditions of consent shall prevail.

2. The Consent Holder shall inform Council's Co-ordinator Compliance Monitoring at least five working days prior to commencing the works and five working days following their completion so monitoring of conditions can be programmed.

3. The Consent Holder shall be responsible for all contracted operations relating to the exercise of this resource consent, and shall ensure that all personnel working on the site are made aware of the conditions of this resource consent and with the Management Plans required by Condition 28 of this consent, and shall ensure compliance with consent conditions.

4. A copy of this resource consent shall be available to the contractors undertaking the works, and shall be produced without unreasonable delay upon request from a servant or agent of the Council.

5. The Consent Holder shall carry out operations in accordance with the provisions of the approved Earthworks Management Plan.

   Advice Note:
   Refer to Condition 28 for Earthworks Management Plan.

6. Any changes to the Earthworks Management Plan shall be made in accordance with the methodology and approved procedures in that plan and shall be confirmed in writing by the Consent Holder following consultation with Council's Compliance Officer. Changes to the Earthworks Management Plan shall not be implemented until authorised by the Council's Co-ordinator Compliance Monitoring.

7. Should the Consent Holder cease or abandon work on-site, it shall first take adequate preventative and remedial measures to control sediment discharge, and shall thereafter maintain these measures for so long as necessary to prevent sediment discharge from the site. All such measures shall be of a type, and to a standard, which are to the satisfaction of the Council Environment & Planning Manager.

8. Prior to bulk earthworks commencing, the Consent Holder shall submit to the Council's Co-ordinator Compliance Monitoring, a certificate signed by an appropriately qualified and experienced engineer to certify that the appropriate erosion and sediment control measures have been constructed in accordance with the Earthworks Plan and the conditions of this consent. The certified controls shall include, where relevant, diversion channels, sediment fences, decanting earth bunds and sediment retention ponds. The certification for these

measures for each construction phase shall be supplied to the Council Co-ordinator Compliance Monitoring.

9. The work shall be carried out during normal work hours (i.e., 07.30 to 17.30) to limit the nuisance of noise and access of vehicles.

Earthworks

10. The Consent Holder shall undertake all practicable steps to minimise the effect of any contaminant discharges to the receiving environment.

11. The Consent Holder shall ensure that any discharge of contaminants onto or into land or water from any activity is avoided, remedied or mitigated to ensure no contaminants are present at a concentration that is, or is likely to have, a more then minor effect on the environment.

12. No petrochemical or synthetic contaminants (including but not limited to oil, petrol, diesel, hydraulic fluid) shall be released into water from equipment being used for the activity and no machinery shall be cleaned, stored, or refuelled within 5 metres of any watercourse.

13. Fuels, oils and hydraulic fluids associated with the operation shall be stored in a secure and contained manner in order to prevent the contamination of adjacent land and/or water bodies.

14. The Consent Holder shall notify the Council's Co-ordinator Compliance Monitoring as soon as is practicable, and as a minimum requirement within 12 hours, of the Consent Holder becoming aware of a spill of hazardous materials, fuel, oil, hydraulic fluid or other similar contaminants. The Consent Holder shall, within 7 days of the incident occurring, provide a written report to the Council, identifying the causes, steps undertaken to remedy the effects of the incident and any additional measures that will be undertaken to avoid future spills.

15. All practical measures shall be taken to ensure that any dust created by operations at the site and vehicle manoeuvring (in accessing the site and driving within it) shall not, in the opinion of Council's Co-ordinator Compliance Monitoring, become a nuisance to the public or adjacent property owners or occupiers. The measures employed shall include, but are not limited to, the watering of unsealed traffic movement areas, roadways and stockpiles as may be required.

16. All disturbed vegetation, excess soil or debris shall be disposed of off-site or stabilised to minimise the risk of erosion.

17. Topsoil and subsoil shall be stripped and stockpiled separately. On completion of the works topsoil shall spread over the subsoil.

Stormwater

18. All stockpiled material shall be protected from stormwater by appropriate measures, eg, bunding.

19. The Consent Holder shall take all practical measures to limit the discharge of sediment with stormwater run-off to water or land where it may enter water during and after the earthworks.

20. The discharge of stormwater shall not cause in the receiving water any of the following:

    (a) the production of any visible oil or grease films, scums or foams, or conspicuous floatable or suspended material;
    (b) any emission of objectionable odour;
    (c) the rendering of freshwater unsuitable for bathing;
    (d) the rendering of freshwater unsuitable for consumption by farm animals; and
    (e) any adverse effect on aquatic life.

21. The Consent Holder shall monitor weather patterns during the construction phase and works shall be discontinued and appropriate protection and mitigation measures put in place prior to forecast heavy rainfalls and where resulting floods reaching the site works.

22. The Consent Holder shall stop construction in heavy rain when the activity shows sedimentation in run-off that may enter water that is more than minor in the opinion of the Council's Compliance Officer.

23. Sediment and erosion controls shall be implemented and maintained in effective operational order at all times.

    Advice Note:
    Appropriate sediment control equipment including matting and batter covers should be kept on-site for use in minimising potential sedimentation problems from areas of exposed soil.

24. All erosion and sediment control measures shall be inspected after any major rainfall event and any problems shall be rectified within 24 hours required.

    Revegetation

25. All exposed ground shall be revegetated as soon as practical and shall be within six months of completion of the works so that erosion both from wind and rain is minimised.

26. All works shall be undertaken as required by the Archaeological Authority

    Earthworks Management Plan

27. Prior to undertaking any activities authorised by this consent, the Consent Holder shall prepare an Earthworks Management Plan.

28. The Earthworks Management Plan required by Condition 28 shall set out the practices and procedures to be adopted in order that compliance with the conditions of this consent can be achieved, and in order that the effects of the

activity are minimised to the greatest extent practical. This plan shall, as a minimum, address the following matters:

(a) description of the works;
(b) engineering design details;
(c) silt and dust control during earthwork stages;
(d) temporary activities and equipment storage in specified areas;
(e) construction programme including timetable, sequence of events and duration including any landscaping;
(f) construction methods and equipment to be used;
(g) dust sources and potential impact during construction;
(h) methods used for dust suppression during construction activities;
(i) location, design, operation and maintenance of stormwater run-off controls and sediment control facilities;
(j) detailed specifications of the diversion of any water bodies including channel configurations and rehabilitation measures;
(k) detailed specifications of the spoil storage and stabilisation;
(l) staff and contractor training;
(m) traffic management and property access management;
(n) contingency plans (eg, mechanical failures, oil/fuel spills, flooding, landslips);
(o) public access, community information and liaison procedures;
(p) cultural and archaeological protocols (including discovery protocols);
(q) assessment and monitoring procedures;
(r) methodology and approval procedures for making changes to the Construction, Erosion and Sediment Management Plan.

Advice Note:
The following are the general principles that should be adhered to when writing and implementing the Construction, Erosion and Sediment Control Plan:

(a) minimise the disturbance to land;
(b) stage construction;
(c) protect steep slopes;
(d) stabilise exposed areas as soon as possible;
(e) minimise the run-off velocities;
(f) revegetate as soon as possible;
(g) install perimeter controls and protect disturbed areas from run-off sourced above site;
(h) employ detention devices;
(i) take the season and weather forecast into account;
(j) use trained and experienced contractors and staff;
(k) update the plan as the project evolves;
(l) assess and monitor.

Keep on-site run-off velocities low by the use of the following: contour drains, retention of natural vegetation, provision of buffer strips of vegetation, low gradients and short slopes, control anticipated erosion and prevent sediment from leaving the site.

The Consent Holder is directed to the following documents for more detail on earthworks and sediment control: eg, Auckland Regional Council's Technical

publication TP90, Erosion & Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region.

29. Council may, for the duration of this consent, review the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 to:

    (a) deal with any adverse effect on the environment that may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or

    (b) to require compliance with operative rules in the Tasman Resource Management Plan or its successor; or

    (c) when relevant national environmental standards have been made under Section 43 of the Resource Management Act 1991.

30. This consent will lapse after five years from the date of issue.

31. This resource consent expires three years from the time that this consent is given effect to.

    Advice Note:
    The consent is given effect to once any earthworks commence

Works on a cultural heritage site

1. The Consent Holder shall ensure that all works are carried out in general accordance with the application submitted on 18th December 2009 in support of the application for resource consent RM090878. If there are any inconsistencies between this information and the conditions of consent, the conditions of consent shall prevail.

2. The Consent Holder shall have a valid Archaeological Authority issued from the New Zealand Historic Places Trust before undertaking any works.

3. All works shall be undertaken in accordance with the Archaeological Authority.

    Advice Note:
    Unlike resource consents, an Authority cannot be transferred with the sale of a property. Authorities can be used only by the Authority Holder named on the decision. If the property is sold, but the archaeological work is not completed, a new application can be made by writing to the New Zealand Historic Places Trust explaining the situation.

4. The Consent Holder shall inform Council's Co-ordinator Compliance Monitoring at least five working days prior to commencing the works and five working days following their completion so monitoring of conditions can be programmed.

5. The Consent Holder shall provide a copy of this resource consent and associated plans to all persons involved in the activities authorised by this consent.

6. The Consent Holder shall engage the services of a representative of Manawhenua Ki Mohua to be present during any earthworks. The Consent Holder shall contact Manawhenua Ki Mohua, PO Box 171, Takaka (telephone (03) 525 8760) at least 10 working days prior to commencing any earthworks and advise it of the commencement date of the earthworks.

   Advice Note:
   It is noted that an Authority Pursuant to Section 14, Historic Places Act 1993 has been issued and it is No. 2007/93 HP11013/11036-049. The applicant is referred to this Authority for specific conditions.

7. Council may, for the duration of this consent, review the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 to:

   (a) deal with any adverse effect on the environment that may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or

   (b) to require compliance with operative rules in the Tasman Resource Management Plan or its successor; or

   (c) when relevant national environmental standards have been made under Section 43 of the Resource Management Act 1991.

8. This resource consent expires when Section 224 is granted for the subdivision authorised by RM090834, or 15 February 2020.

Repair, maintenance and upgrade of the rock revetment

1. The Consent Holder shall, at least 20 days prior to any works being undertaken on site provide an amended design for the rock revetment to the Environment and Planning Manager of Council for his approval. The amended design shall incorporate appropriate armour rock grading, toe formation depth and crest height which will mitigate the adverse effects of future climate change effects including beach downgrading and overtopping. It shall also include details of the termination design for the northern and southern extremity of the revetment which avoids end effects on adjoining properties. Notwithstanding this, the repair, maintenance and upgrade of the rock revetment shall be undertaken in general accordance with the application and with the plan marked Attachment 2 dated 12 May 2010. If there are any inconsistencies between this information and the conditions of consent, the conditions of the consent shall prevail.

2. The Consent Holder shall ensure that any contractors undertaking the works are made aware of the conditions of this resource consent and shall ensure compliance with all conditions.

3. The Consent Holder shall inform the Council's Co-ordinator Compliance Monitoring (Carl Cheeseman, (03) 543 8436) and the Council's Reserves Manager (Beryl Wilkes (03) 543 8391) at least five working days prior to commencing the works and five working days following their completion so monitoring of conditions can be programmed.

4. The base for the rock revetment structure shall be constructed using suitably graded and competent fill material, so as to provide a sound base on which to construct the revetment. Such preparatory works as may be necessary, including removal of unsuitable marine sediments or other material, shall be undertaken, and the fill material placed and compacted, so that it is structurally sound.

5. As much of the existing vegetation as possible shall be retained at the head of the revetment but shall otherwise be removed to allow for the revetment to be constructed to the amended height. No vegetation shall be planted within the wall itself. Some replanting at the top of the wall shall be undertaken in order to enhance the visual amenity of the structure and provide bank stabilisation above the top of rock level.

6. The existing timber step structures shall be removed and replaced with structures able to withstand the sea conditions experienced at the site.

7. The design and construction of the works shall be carried out under the supervision of a chartered professional engineer with appropriate experience in coastal revetment engineering.

8. The Consent Holder shall ensure that unimpeded public access along the beach is maintained to the greatest extent practicable, with the exception of such construction times and areas where safety of the public would be endangered as a result of the works in progress.

9. The Consent Holder shall erect advice notices at both ends of the construction area. These notices shall provide warning of the construction activities noting any precautions that should be taken, as well as advising the period(s) during which these activities will be occurring and when public access shall be restricted. The notices shall be erected at least 10 working days prior to the commencement of the works and shall remain in place for the duration of the works before being removed on completion of the works.

10. Construction shall occur at such stages of the tide so as to not occur within, or be impacted or affected by, the ebb and flow of seawater.

11. Any vehicle movements along the foreshore shall be restricted to the smallest area practicable.

12. Vegetation and/or other waste material shall be removed from the site only to the extent necessary to facilitate the repair of the revetment. This material shall be disposed of to an approved land-based disposal site or disposed of by other approved means. The Consent Holder shall ensure that all excess soil, vegetation and other materials are removed from the site on completion of the works and that the site is left in a neat and tidy condition. No soil material or vegetation shall be left where it may enter water or result in the contamination of the coastal marine area.

13. The Consent Holder shall ensure that shall be all fill, rock revetment materials are sufficiently clean prior to placement so as to not leach contaminants into the coastal marine area.

14. The rock material used in the construction of the batter face structure shall be of a colouration and texture which minimises to the greatest extent practicable the adverse effects on the amenity of the coastal environment.

15. The repair and upgrade of the revetment shall be undertaken in a manner which results in a smooth and continuous transition that minimises end effect erosion.

16. Construction works associated with the activities shall not take place between the hours of 1900 and 0700. No works shall be undertaken on Sundays or Public Holidays.

17. The Consent Holder shall not exceed the recommended upper noise limits as described in the New Zealand Construction Noise Standard NZS 6803:1999 Acoustics - Construction Noise.

18. In the event of the structure becoming redundant or no longer fit for purpose the consent holder shall take all necessary steps to either remove the structure, or to incorporate the structure or the materials used in its construction in a replacement authorised structure or other works.

19. The Council may, in accordance with Section 128 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of this consent. Such notice may be served 12 months after the date of grant of consent, or at the expiry of any 12 month period thereafter.

    The review may be initiated for any one or more of the following purposes:

    (a) to deal with any adverse effects on the environment that may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or to deal with any such effects following assessment of the results of the monitoring of the consent and/or as a result of the Council's monitoring of the state of the environment in the area;

    (b) to require the adoption of the best practicable option to remove or reduce any adverse effect on the environment;

    (c) to deal with any inadequacies or inconsistencies the Council considers there to be in the conditions of the consent;

    (d) to deal with any material inaccuracies that may in future be found in the information made available with the application which materially affected the decision (notice may be served at any time for this reason);

    The Consent Holder shall meet all reasonable costs of any such review.

Advice Notes:

1. The Consent Holder shall pay to the Council an annual fee plus administrative and monitoring charges fixed by the Council from time to time in accordance with the Act, for the purposes authorised by this consent.

   The obligation to pay the annual fee as defined in the Annual Plan commences on the date this consent commences. Initial payment is due within 30 days of that date, and subsequent payments are due on 1 July each year. The initial payment will be calculated on a pro rata basis to the next 1 July.

2. All reporting required by this consent shall be made in the first instance to the Tasman District Council's Co-ordinator Compliance Monitoring.

3. The Consent Holder shall meet the requirements of the Council with regard to all Building and Health Bylaws, Regulations and Acts.

4. All plans are copies and are not to scale.

Restoration of a natural dune profile with a hard engineered backstop

1. The Consent Holder shall, at least 20 days prior to the intended commencement date submit a dune restoration programme to the Environment and Planning Manager of Council for approval. The programme shall include:

   a) details of the establishment and implementation of a dune restoration programme and the provision and appropriate trigger for the construction of a hard engineered backstop;

   b) details of all principles, procedures and practices that will be implemented for the restoration of a natural dune profile;

   c) the design criteria and dimensions of the restored foredune;

   d) construction timetable for the erosion and sediment control works and any bulk earthworks involved;

   e) timetable and nature of progressive site rehabilitation and revegetation proposed; and

   f) maintenance, monitoring and reporting procedures.

2. The Consent Holder shall ensure that any contractors undertaking the works are made aware of the conditions of this resource consent and shall ensure compliance with all conditions.

3. The Consent Holder shall inform the Council's Co-ordinator Compliance Monitoring (Carl Cheeseman, (03) 543 8436) and the Council's Reserves Manager (Beryl Wilkes (03) 543 8391) at least five working days prior to commencing the works and five working days following their completion so monitoring of conditions can be programmed.

4. The Consent Holder shall ensure that unimpeded public access along the beach is maintained to the greatest extent practicable, with the exception of such construction times and areas where safety of the public would be endangered as a result of the works in progress.

5. The Consent Holder shall erect advice notices at both ends of the construction area. These notices shall provide warning of the construction activities noting any precautions that should be taken, as well as advising the period(s) during which these activities will be occurring and when public access shall be restricted. The notices shall be erected at least 10 working days prior to the commencement of the works and shall remain in place for the duration of the works before being removed on completion of the works.

6. The existing timber step structures shall be removed and replaced with access ways compatible with the dune restoration programme and with the conditions experienced at the site.

7. The design and formation of the dune shall be carried out under the supervision of a suitable qualified person with experience in Coast Care dune restoration programmes.

8. The Consent Holder shall ensure that unimpeded public access along the beach is maintained to the greatest extent practicable, with the exception of such construction times and areas where safety of the public would be endangered as a result of the works in progress.

9. The Consent Holder shall erect advice notices at both ends of the construction area. These notices shall provide warning of the construction activities noting any precautions that should be taken, as well as advising the period(s) during which these activities will be occurring and when public access shall be restricted. The notices shall be erected at least 10 working days prior to the commencement of the works and shall remain in place for the duration of the works before being removed on completion of the works.

10. Construction shall occur at such stages of the tide so as to not occur within, or be impacted or affected by, the ebb and flow of seawater.

11. Any vehicle movements along the foreshore shall be restricted to the smallest area practicable.

12. Vegetation and/or other waste material shall be removed from the site only to the extent necessary to facilitate the dune restoration programme. This material shall be disposed of to an approved land-based disposal site or disposed of by other approved means. The Consent Holder shall ensure that all excess soil, vegetation and other materials are removed from the site on completion of the works and that the site is left in a neat and tidy condition. No soil material or

vegetation shall be left where it may enter water or result in the contamination of the coastal marine area.

13. The Consent Holder shall ensure that any required fill material is sufficiently clean prior to placement so as to not leach contaminants into the coastal marine area.

14. The dune restoration programme shall be undertaken in a manner which results in a smooth and continuous transition that minimises end effects on any works on the adjoining properties.

15. The Council may, in accordance with Section 128 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of this consent. Such notice may be served 12 months after the date of grant of consent, or at the expiry of any 12 month period thereafter.

    The review may be initiated for any one or more of the following purposes:

    (a) to deal with any adverse effects on the environment that may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or to deal with any such effects following assessment of the results of the monitoring of the consent and/or as a result of the Council's monitoring of the state of the environment in the area;

    (b) to require the adoption of the best practicable option to remove or reduce any adverse effect on the environment;

    (c) to deal with any inadequacies or inconsistencies the Council considers there to be in the conditions of the consent;

    (d) to deal with any material inaccuracies that may in future be found in the information made available with the application which materially affected the decision (notice may be served at any time for this reason);

    The Consent Holder shall meet all reasonable costs of any such review.

Advice Notes:

1. The Consent Holder shall pay to the Council an annual fee plus administrative and monitoring charges fixed by the Council from time to time in accordance with the Act, for the purposes authorised by this consent.

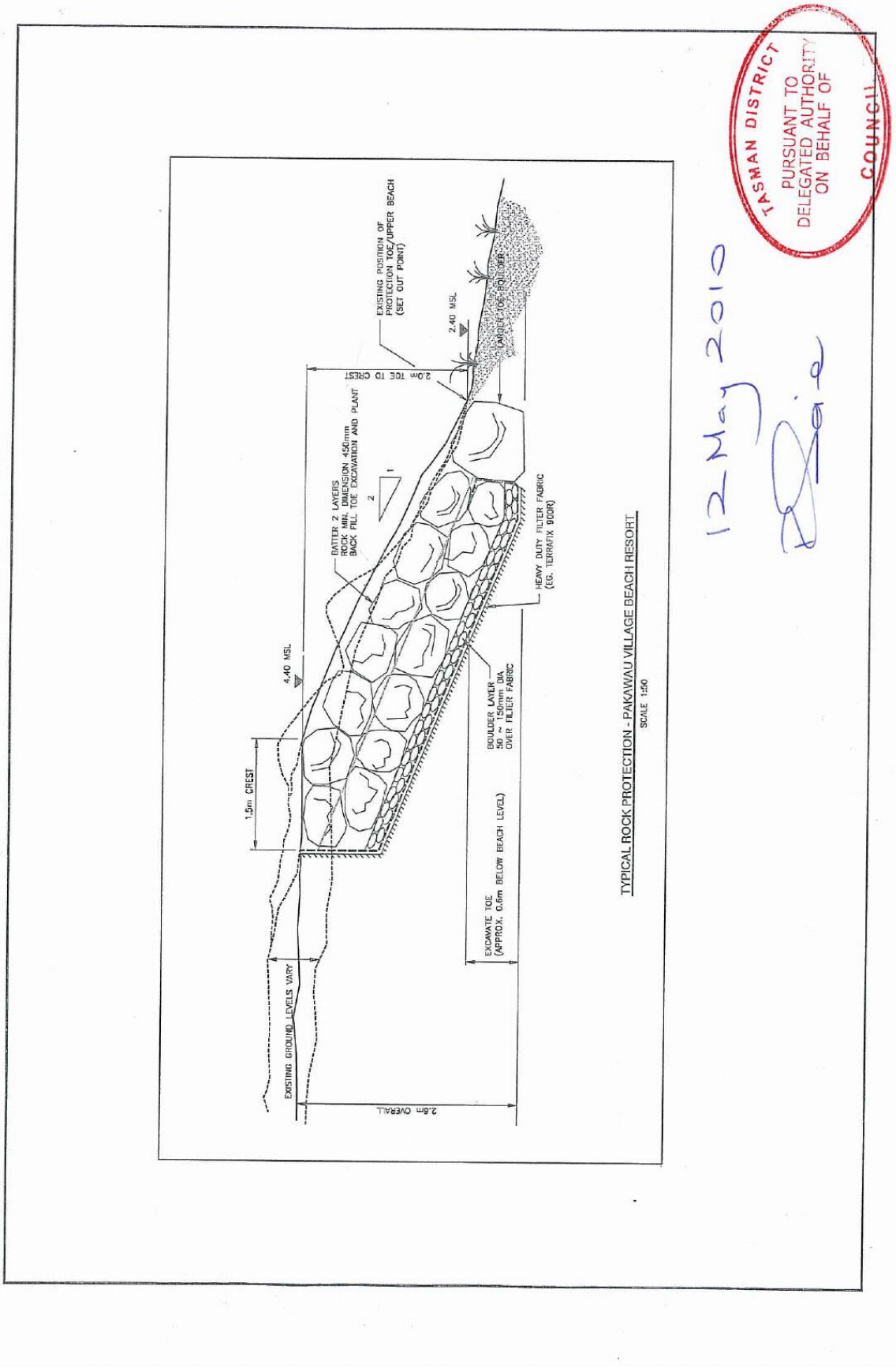
   The obligation to pay the annual fee as defined in the Annual Plan commences on the date this consent commences. Initial payment is due within 30 days of that date, and subsequent payments are due on 1 July each year. The initial payment will be calculated on a pro rata basis to the next 1 July.

2. All reporting required by this consent shall be made in the first instance to the Tasman District Council's Co-ordinator Compliance Monitoring.

3. The Consent Holder shall meet the requirements of the Council with regard to all Building and Health Bylaws, Regulations and Acts.

4. All plans are copies and are not to scale.

ATTACHMENT 2



ATTACHMENT 3
ECO NOMOS REPORT