

**BOFFA  
MISKELL**

ENVIRONMENTAL PLANNING  
LANDSCAPE ARCHITECTURE

PO Box 11 442  
3rd Floor, 109-113 Dixon Street  
Wellington  
New Zealand

Tel: 64-4-385 9315  
Fax: 64-4-384 3089

## **WHAREKAUHAU COUNTRY ESTATE CONSERVATION PLAN**

**Prepared for**

**Wharekauhau Holdings Limited**

**by**

**Boffa Miskell Limited**

*updated 2/1/97*

**September 1996**

AUCKLAND  
PO Box 91 250  
Tel 64 9 358 2526  
Fax 64 9 377 9468

WELLINGTON  
PO Box 11 442  
Tel 64 4 385 9315  
Fax 64 4 384 3089

CHRISTCHURCH  
PO Box 110  
Tel 64 3 366 8891  
Fax 64 3 365 7539

QUEENSTOWN  
PO Box 618  
Tel 64 3 442 7597  
Fax 64 3 442 6599

## CONTENTS

	<i>page</i>
1.0 Introduction	1
2.0 Background	1
3.0 Context	4
4.0 Buildings and Open space	8
5.0 Existing Vegetation	12
6.0 Proposed Planting	15
7.0 Wetlands	19
8.0 Implementation	20
<b>References</b>	21

### **Appendix 1 Infrastructure Outline**

<i>Figures</i>	<i>following page</i>
<i>Figure 1 Location Plan</i>	4
<i>Figure 2 Ecological Districts</i>	6
<i>Figure 3 Existing Vegetation</i>	14
<i>Figure 4 Proposed Planting</i>	18
<i>Figure 5 Stage One Development</i>	18
<i>Figure 6 Wetland Development</i>	20
<i>Figure 7 Typical Ha-ha and Swale Details</i>	20
<i>Figure 8 Perspective Sketch of Stage One Development</i>	22

***Photographs***

<i>Looking westwards to Rimutaka Forest Park....</i>	8
<i>Looking towards Lake Onoke and Palliser Bay...</i>	8
<i>Looking north over the uplifted marine terrace....</i>	8
<i>Looking southwest towards Mukamuka and the South Island....</i>	8
<i>Looking towards Palliser Bay and Cape Palliser....</i>	16
<i>Coastal cliff escarpment on the edge of the uplifted....</i>	16
<i>One of the native forest remnants which, in addition....</i>	16
<i>Wetland at Hinau Flat ...</i>	16

## 1.0 Introduction

- 1.1 This Conservation Plan for Wharekauhau Country Estate is a stand alone document and has been prepared as part of the development of the Master Plan. It has been prepared before any actual development of the Wharekauhau Country Estate has occurred. The Conservation Plan describes how the Wharekauhau Country Estate will be developed over time, in a series of stages. The first stage comprises the development of a new lodge and 8 cottage buildings (20 rooms) and associated infrastructure.

In addition to being lodged as part of any resource consent applications to the South Wairarapa District Council, the Conservation Plan will be used by Wharekauhau Holdings Limited, the owners and operators of the development, to declare their intentions as to how the landscape of Wharekauhau will be developed.

Copies of the plan are also held by the Department of Conservation and local iwi, both of whom have been consulted during the plan's preparation and have been asked to comment on this final version. A commitment has been made by the landowner, Wharekauhau Holdings Limited, for ongoing consultation with both the Department of Conservation, iwi and other parties as the project develops.

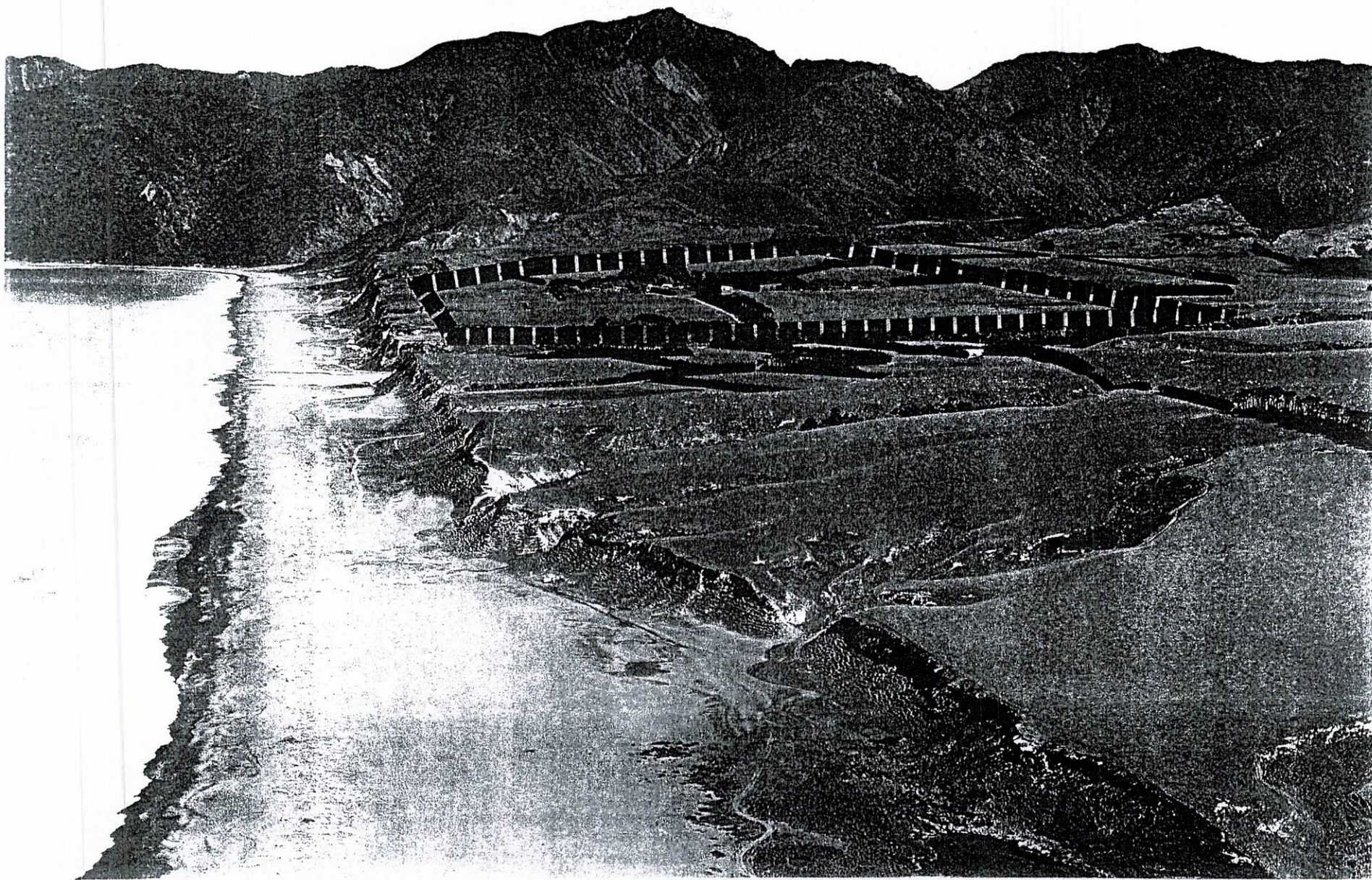
- 1.2 The Conservation Plan is dynamic in that as natural and other changes in the landscape occur and/or changes in the pace of development take place, the plan will be adapted to reflect such events. Any such changes will be recorded as addenda.

## 2.0 Background

- 2.1 The preparation of a Conservation Plan was a condition of the 1993 plan change for the development of the Wharekauhau Tourist Village, one of several specific policy areas covered in the District Plan. The Wharekauhau Tourist Village policy area covers approximately 160 hectares of the southern part of two land titles (CT 480/79 and CT 8/97) which accounts for about 17% of the total area of the Station. This policy area adjoins an amended landward boundary of the Coastal Protection Policy Area which has been set 50 metres from the Ocean Beach cliff top.

The South Wairarapa District Council's Proposed District Plan states in section 7.11.6 that:

- (1) *Applications will be assessed in terms of the Conservation Plan required to accompany all applications.*
- (2) *The Conservation Plan shall cover the following:*



*Looking westwards to Rimutaka Forest Park across Wharepapa Station in foreground and Wharekauhau Station in middleground. Extent of Tourist Village zone shown by dashed line.*

*The following criteria shall apply:*

*(i) Vegetation*

*New planting shall reflect the underlying landform with both the pattern of vegetation and the selection of species designed to complement the landscape (eg, in dap depressions, watercourses, and terrace edges).*

*The following criteria shall apply to consideration of the vegetation planting and maintenance.*

- (a) Existing vegetation shall be retained, and dead, dying and hazardous trees removed.*
- (b) The broadscale character of the open coastal landscape shall be enhanced.*
- (c) The existing shelter plantings shall be maintained.*
- (d) All areas of existing native vegetation shall be allowed to regenerate.*
- (e) New amenity tree and shrub plantings shall use species appropriate to the scale of the landscape and the environmental conditions.*

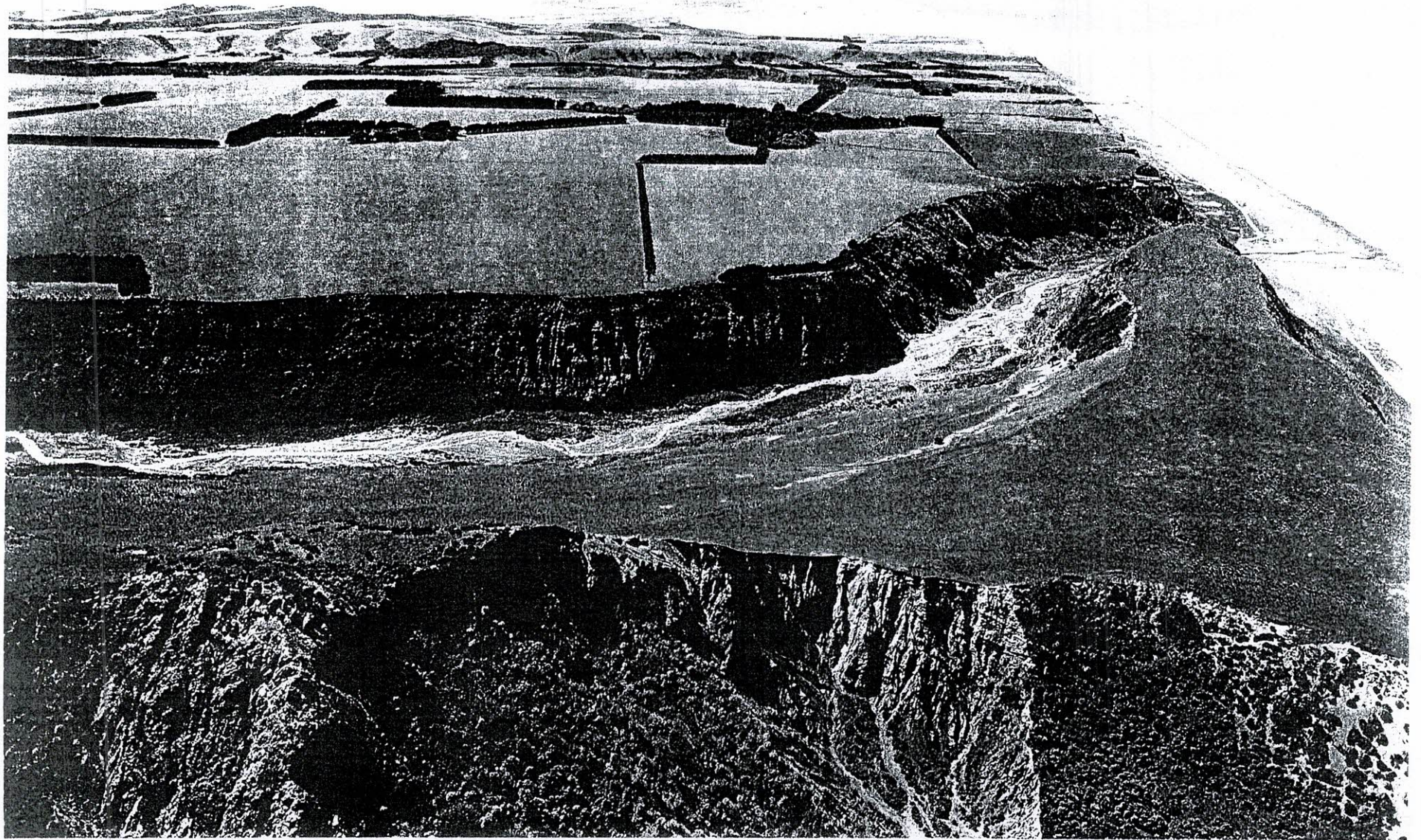
*(ii) Natural Habitats*

*Further protection, and further habitat creations, shall be made. The following criteria shall apply:*

- (a) All areas of new planting shall link with areas of existing habitat;*
- (b) All permanent plant species shall be native, and have value as habitats; and*
- (c) Wetlands shall be created which have independent value, and value in relation to wetlands outside the property.*

*(iii) Open Space*

*The landscape of the Policy Area is separated, physically and visually, from the coastal zone by steep 40-60 metres cliffs. Development shall occur in such a way so that it does not impact on the adjacent coastline, nor onto the Forest Park.*



*Looking towards Lake Onoke and Palliser Bay over the uplifted marine terrace. Wharekauhau Stream in foreground, Ocean Beach to right. Native vegetation filled gullies on Wharepapa Station in background.*

*It should be integrated into the working farm landscape.*

- (a) By controlling the locations, scale, form and design of built development, prominent landforms shall be protected;*
- (b) Buildings and structures shall be concealed from prominent locations, eg, Ocean Beach, and the Forest Park.*
- (c) Existing natural coastal processes and river and stream flows shall be protected; and negative processes, eg, erosion, shall be controlled by the exclusion of stock (fencing) and planting.*
- (d) Effluent, pollution, rubbish shall be controlled by long term management.*

*(iv) Maori Culture and Traditions*

*There are no public reports available to document the heritage and cultural values associated with Maori occupation of the property.*

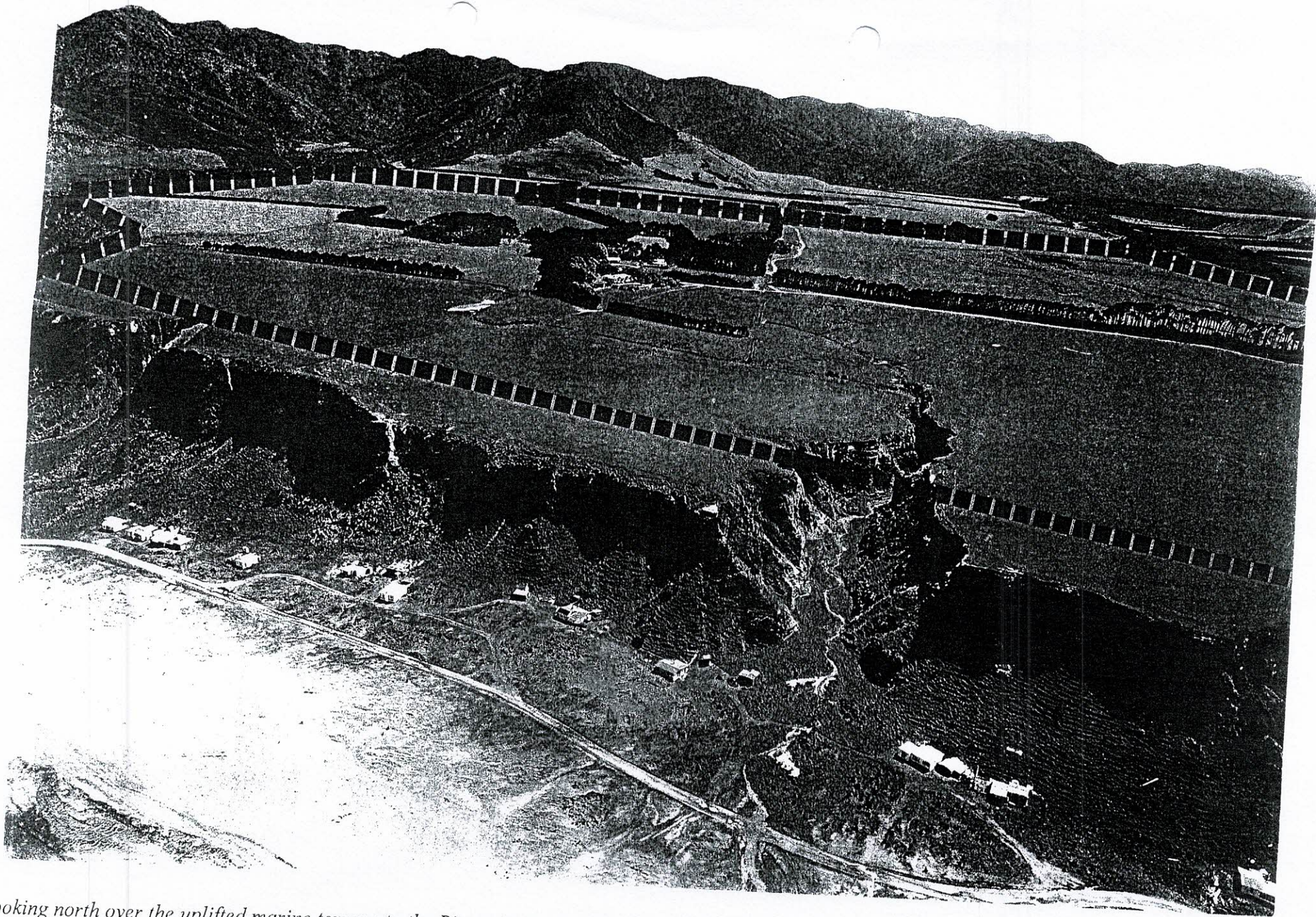
*It is appropriate to establish procedures for consultation so tangata whenua can be informed of items of heritage and cultural value found during development of the Village.*

*The following criteria shall apply:*

- (a) Regular consultation shall be maintained with tangata whenua through the period of development of the Village.*
- (b) Records shall be kept of items found and their significance to Maori culture and heritage.*
- (c) New Zealand Historic Places Trust are to be kept informed of heritage matters associated with the Village Policy Area.*

- 2.2 Although the Conservation Plan has been prepared to accompany a resource consent application, in which many of the matters described above are covered, for completeness, all of the items are addressed in this document.

Whilst the Conservation Plan is required solely for the Wharekauhau Tourist Village zone, reference is also made throughout this document to the landscape and conservation works that are proposed to be completed on other parts of Wharekauhau Station so that the overall development can be seen in context.



*Looking north over the uplifted marine terrace to the Rimutaka Range; Ocean Beach baches in the foreground at the base of the cliff, existing lodge and farmyard in the middle ground. Boundary of the Tourist Village zone shown by dashed line.*

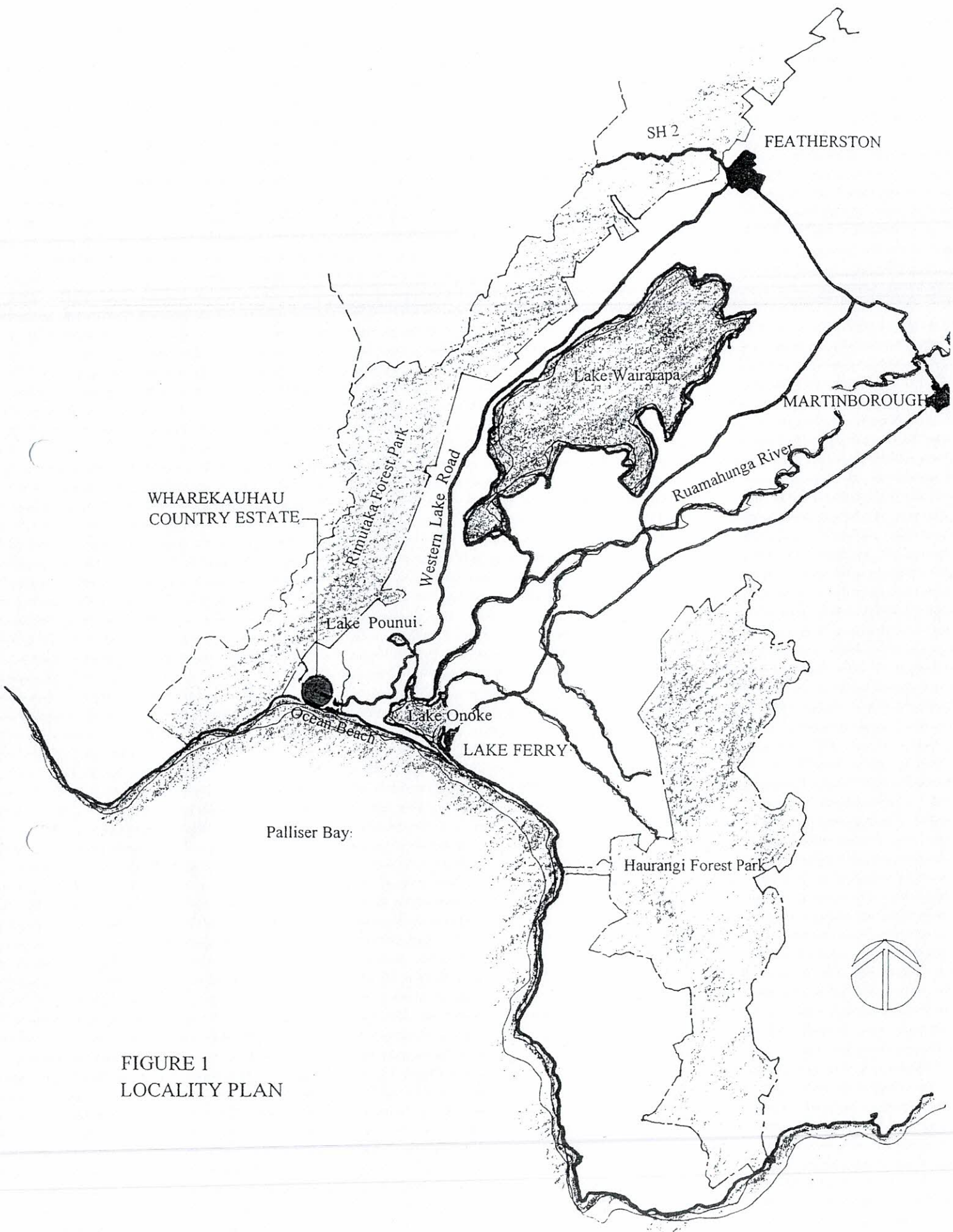


FIGURE 1  
LOCALITY PLAN

- 2.3 Wharekauhau Station was established in 1878 and is home to New Zealand's second oldest registered Romney sheep flock. Until Bill and Annette Shaw bought the property in 1979 Wharekauhau had remained in the ownership of one family. Under the Shaws ownership, Wharekauhau Station has continued to be farmed to a high standard but some very positive changes have been introduced.

The first change made by the Shaws was a long term programme of landscape and ecological enhancement and second, the establishment in 1981, of a high quality lodge and visitor destination aimed primarily at the North American market. Wharekauhau Lodge has a world wide reputation for providing guests with a quality visitor experience on a working New Zealand sheep station. Formal recognition has come from the prestigious Andrew Harper organisation who have awarded Wharekauhau Lodge the Country House Hotel of the Year award three times.

Most of Wharekauhau's guests come to the property via the Country House Hotel Guide produced by Andrew Harper and are attracted by the outdoor environment and activities that are available. Guests tend to be very discerning, highly educated and environmentally aware.

### 3.0 Context

- 3.1 Wharekauhau is a 914 hectare working sheep station located at Palliser Bay, South Wairarapa at the southern tip of the North Island. About 620 hectares (70%) of the Station lies on an uplifted, gently sloping marine terrace that lies between the Wharekauhau Stream and Wharepapa River. About another 180 hectares of the Station is located on terraces around Mukamuka Stream to the west.

The site boundaries of Wharekauhau are natural ones - the coastal cliff escarpment to the south, the steep forested slopes of Rimutaka Forest Park to the north, Wharepapa River to the east and Wharekauhau Stream and hill country to the west (refer to Figure 1).

The scale of the landscape is large and dramatic, created by the open coastal location and expansive views, and the prevailing natural systems - the landform, drainage patterns and vegetation. At a more detailed level, the scale is reduced by a series of terrace edges, shelterbelts, farm planting, gullies, streams and farm fencing.

### 3.2 The Wairarapa Region

The Wairarapa region is located within the boundary zone between the Pacific and Australian Plates. Deformation within the boundary zone has resulted in the formation of important faults and folds. The Wairarapa valley was formed by down warping along the West Wairarapa Fault. The location and characteristics of the fault have been described in detail by geologists. The position of the fault is uncertain to the southwest of Lake Wairarapa; it may extend to the northern corner of Palliser Bay then out to sea southeast of Turakirae Head. During the last major earthquake event in 1855 (magnitude 8) there was 2.8 metres vertical displacement at the south coast.

Research by geologists has indicated that as a result of earthquakes, significant ground deformation up to several kilometres from the faults may occur without actual ground rupture. However, because of the accuracy and scale of the geological mapping, the information on faults in the Wairarapa should not be used to determine the precise location of the fault on the ground or the potential hazard associated with it.

The District Plan recognises three broad landscape types in the South Wairarapa District - a valley, surrounded by hill country to the east and steep mountain lands to the west. The coastal influence, the extent of coastline and the presence of Lake Wairarapa all contribute to the landscape pattern and character of the District.

The Wairarapa valley is open at its southern end forming Palliser Bay between the Rimutaka Range and Aorangi Mountains. During the Ice Age, masses of coarse material were dumped in the Wairarapa valley by rivers draining the Tararua Range. The valley became filled with thick deposits of river laid gravels.

The rise in sea level after the Ice age flooded the southern part of the valley. Sometime between 4000 and 5500 years ago the sea level fell again to approximately its current level and sedimentation by the Ruamahanga and Tauherenikau Rivers has filled in the edges of Lake Wairarapa. The Ruamahanga River formed a natural dam across the seaward end of the depression, forming Lake Onoke.

### 3.3 Ecological Districts

Four separate ecological regions and four ecological districts are recognised in the Wairarapa - Tararua, Wairarapa Plains, Aorangi and Eastern Wairarapa. Wharekauhau lies on the boundary of the Wairarapa Plains Ecological District and the Tararua Ecological District. Topography and climate are the main determinants in recognising these as separate districts. The part of the

property where the Tourist Village zone is situated (ie the uplifted marine terrace) lies in the Wairarapa Plains Ecological District whereas the hilly western part of the Station relates to the Tararua Ecological District (refer to Figure 2).

*An ecological district is a "local part of New Zealand where topographical, geological, climatic soil, and biological features, including the broad cultural pattern, produce a characteristic landscape and a range of biological communities. An aggregation of adjacent ecological districts with very closely related characteristics, together form an ecological region" (Park et al, 1983).*

### 3.4 Lakes and Wetlands

The Draft Regional Landscape Plan for the Wellington Region identifies Lake Wairarapa and Lake Onoke wetland complex and Lake Pounui as 'Significant Lake and Wetland Landscapes'.

Lake Wairarapa is the largest lake south of Lake Taupo. It is more than 18 km long and 6 km at its widest point covers an area of approximately 7800 hectares. The lake is shallow and seldom exceeds 2.5 metres in depth. Together with Lake Onoke, a 650 hectare brackish lake at the mouth of the Ruamahanga River, Lake Wairarapa is regarded as a regionally significant wetland and is the largest wetland system in the North Island. In 1989 a National Water Conservation Order was granted over the Lake and its contributing rivers and streams in recognition of the high wildlife habitat values.

This is in contrast to a proposal promulgated by the then Department of Lands and Survey in the mid 1980s to 'reclaim' areas of the Lake for agricultural development. This work would have continued the original Lower Wairarapa Development Scheme which was started in the early 1960s. Widespread protest from conservation groups and the public were instrumental in the latest scheme being abandoned.

Previous land clearance, drainage and farming to the edge of the Lake in places have had an impact on the intrinsic values, particularly native vegetation. However, the Lake and its environs are still regarded as an important habitat for a wide range of native and migratory birds including 5 threatened species. The Department of Conservation estimate that the wetlands support over 10,000 water fowl. A diverse range of native vegetation, including six nationally threatened species is found around the Lake margins and environs.

The lakes and the wetlands have always been important to tangata whenua for kaimoana, for plant materials and for transport. Removal of native vegetation, drainage and farming have dramatically altered the value of the Lakes and wetlands for local iwi but the area is still regarded as extremely important.

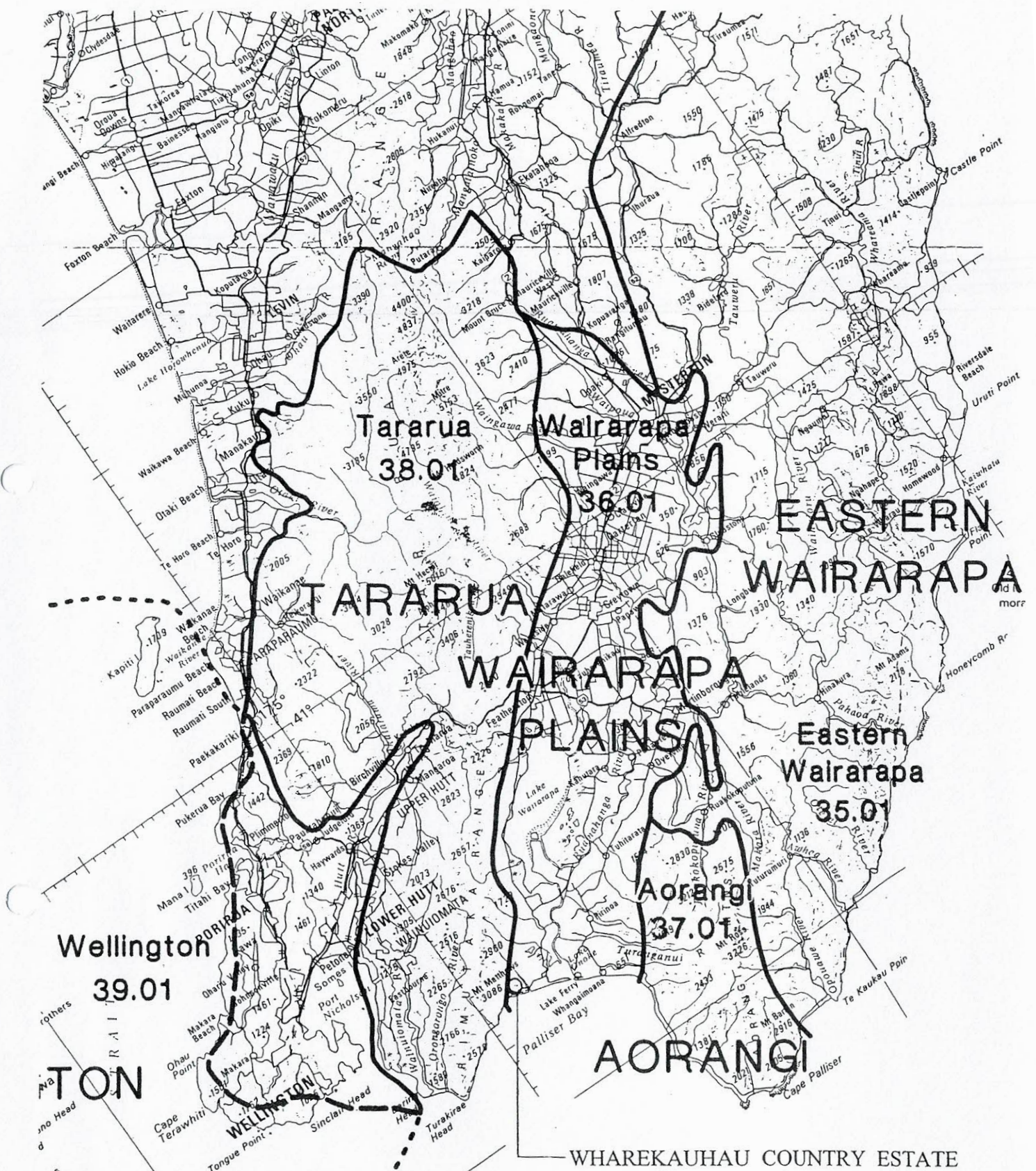


FIGURE 2

ECOLOGICAL REGIONS (upper case title)  
& ECOLOGICAL DISTRICTS (lower case title)

Part sheet 3  
Ecological Regions and Districts of New Zealand  
Published Department of Conservation, 1987

Nearly 860 hectares of the lake margin is protected in 8 separate reserves managed by the Department of Conservation. In addition, the Department also manages over 9400 hectares of the Lake and its environs through stewardship arrangements and conservation covenants.

Lake Pounui, located in the western hill country immediately north of Wharekauhau, is also regarded as a significant natural area. The Lake is deep, formed in a naturally dammed valley in the foothills of the Rimutakas. In contrast to Lakes Wairarapa and Onoke, much of Lake Pounui is surrounded in tall native vegetation. Victoria University of Wellington has long recognised the scientific value of the Lake and its largely intact catchment and have used the area for scientific studies. In the mid 1980s the Queen Elizabeth II National Trust negotiated open space covenants to protect the Lake and part of its catchment.

Recognising the important natural values of Lake Pounui and its relevance to the scientific community and also the relationship of the Lake to the Wharekauhau experience, Bill and Annette Shaw have a conditional signed agreement for the purchase of 400 acres hectares of the beech forested catchment along the southern section of the Lake.

Their aim is to retain the area as it is, to ensure that it is securely fenced to exclude domestic stock and promote its use for ongoing scientific research and investigation.

### 3.5 The Coast

The Wairarapa coastline has been identified by the tangata whenua as having significant values as a regional coastal landscape. It is a rugged coastline, rich in kaimoana with beaches that are ideal for surf casting and rocky bays for diving. Beaches have been uplifted by successive earthquakes which makes them unsuitable for swimming.

On either side of Palliser Bay beaches are wind swept and desolate and backed by steep coastal cliffs. The ruggedness and sense of remoteness is part of the appeal of this coastline.

Ocean Beach, which lies at the base of the cliffs below Wharekauhau, is a popular spot for surf casting. Over the years 23 baches have been illegally built along the beach on what is now conservation land and unformed legal road. At Corner Creek, west of Ocean Beach there are another 12 illegal baches. In the Department of Conservation's Conservation Management Strategy, a phasing out of the baches is proposed as a means to remedy this situation.

For guests at Wharekauhau, the Palliser Bay coastline figures prominently; visitors are captured by the remoteness and raw beauty of the coast in all weathers. There are dramatic and expansive views from virtually anywhere on the Station. Many guests take a trip to view the seals at Cape Palliser and a four wheel drive trip along the existing coastal tracks to the part of Wharekauhau Station at the mouth of the Mukamuka Stream.

### 3.6 Rimutaka Forest Park

The recently released Draft Regional Landscape Plan for the Wellington Region identifies the Rimutaka Ranges as an Outstanding Landscape. The Rimutaka Forest Park comprises of nearly 15,000 hectares of steep hill country covered in regenerating native vegetation.

The Park adjoins Wharekauhau Station to the west although not the actual Tourist Village zone. The Shaws have progressively retired and fenced the steep hill country in the northern part of the Station, which in effect has created a buffer of regenerating native vegetation between the farm and the Forest Park. Initially the regeneration comprised a mixture of noxious and 'unwanted' plants like gorse, tauhinu, thistles but native woody species such as mahoe are emerging. This area will become increasingly valuable as habitat and in linking the Forest Park with the lowlands.

One of the three proposed Ecological Areas within the Rimutaka Forest Park is on the boundary with Wharekauhau (Mount Matthews Ecological Area). Covering an area of 1750 hectares this area was identified as such because of the range of forest types present in an exposed and tectonically highly unstable environment. Ecological Areas are recognised as being more ecologically significant and require more intensive conservation management.

### 3.7 The Rivers

The Wharepapa River and the Wharekauhau Stream that essentially define the boundaries of the Tourist Village zone are important landscape and ecological features. The owners have fenced at the top of the river/stream banks to exclude stock and consequently regeneration has occurred which has helped to stabilise the river/stream banks. Whilst most of the regeneration is exotic (noxious) plants such as broom and gorse, it has certainly changed the character of these areas by creating a 'wild' and remote atmosphere. The riverbeds have provided Wharekauhau with excellent horse trails and walking tracks into the forested areas to the north.



*Looking southwest towards Mukamuka and the South Island over the proposed Stage One development area. Existing lodge and farmyard in middleground. Vegetation is a mixture of native forest remnants, original Bishop Pine (*Pinus muricata*) shelter planting, more recent radiata pine shelterbelts and amenity tree planting of both native and exotic species.*

#### 4.0 Buildings and Open Space

- 4.1 The Wharekauhau Tourist Village policy area in the District Plan establishes stringent criteria to ensure that the built development is compatible with the environment at Wharekauhau.

The Special Building Requirements for the Wharekauhau Tourist Village are:

- (1) *Building shall be limited to 65 dwellings and buildings for ancillary facilities.*
- (2) *No structures shall be built:*
  - (i) *within 50 metres of all cliff tops or a distance equal to the height of the cliffs above the talus slopes, whichever is the greater;*
  - (ii) *within 50 metres of the inland gully incisions from the cliffs, or a distance equal to the height of the gully wall whichever is the lesser;*
  - (iii) *within 30 metres of water courses unless the Council is satisfied that buildings and ancillary features such as septic tanks in a closer location will not be affected by potential flooding and that flooding or erosion will not be exacerbated thereby;*
  - (iv) *in any other position where buildings may be affected by potential flooding or which may interfere with natural drainage flows unless specific design is undertaken to address any impacts.*
- (3) *No structures shall exceed a built height of 8 metres.*
- (4) *One residential dwelling only (together with its accessory buildings) shall be permitted per site.*
- (5) *Site coverage shall not exceed 35% for a residential dwelling and accessory buildings.*

- 4.2 In 1994 a Development Concept Plan was prepared by Boffa Miskell that showed how the Tourist Village zone could be developed within the conditions and special requirements. This concept is the basis of the Master Plan which is currently being prepared. The Master Plan process refines and tests the Concept Plan design.

The Development Concept demonstrates that the conditions and special requirements can be met and a viable project achieved that is in harmony with the existing landscape. Key points to note are:

- The closest building to the cliff is over 100 metres away; there is no need for buildings to be any closer because the gentle elevation of the marine terrace means that buildings can be sited across the terrace without compromising outlook or views.
- The lot layout plan prepared in conjunction with the Master Plan demonstrates that the 65, 0.4 hectare (one acre) sites can be readily accommodated.
- The lot layout plan illustrates that no buildings will be built within 30 metres of any natural water courses; however, buildings in some locations will be sited within 10 metres of the wetland areas that are proposed to be developed.
- The wetland areas will provide a landscape setting and context for buildings and other structures. The wetlands will also provide habitat and help to contain stormwater, particularly controlling peak runoff.

- 4.3 Considerable attention is being given to all aspects of the development, particularly buildings, to ensure that the landscape character and intrinsic natural qualities are not compromised. While the conditions in the District Plan set out the overall framework, various other mechanisms are being put in place by the owners of Wharekauhau as additional means of landscape protection and development control. Detailed covenants, which will be lodged on land titles, are being drafted covering such things as quality and style of buildings, fencing and other structures, materials, building colours and landscaping.

Individual Estate Home lots will be approximately 0.4 of an hectare (1 acre) but only the area occupied by the Estate Home and ancillary building(s) and the immediate environs will be used by individual owners; the balance will continue to be farmed. The covenants currently being drafted will legally reinforce this development pattern.

Various methods of fencing and other barriers to exclude stock from the house and environs and yet maintain ocean views will be used; these are discussed in section 6.0. The entire lot will not be fenced thus avoiding the appearance of a typical subdivision.

- 4.4 The way in which the lots have been set out over the Tourist Village zone has been carefully planned to maintain views and privacy, control roading and access to individual lots and to control the landscape and activities on the land between lots and between the lots and the road. In most instances the lot boundaries are set back from roads so that Wharekauhau Holdings, the owners of the entire property, can determine exactly the type of landscape treatment and planting and when it is to occur within these areas.

The planting, creation of wetlands, and roading in the areas totally owned and controlled by Wharekauhau Holdings will establish the broad framework of development. This, together with the pattern of subdivision proposed, will ensure that in both the long and short term the development proceeds without compromising the site's intrinsic landscape values.

- 4.5 A team of consultants have been engaged to handle various aspects of the development - for the master planning; civil engineering (water supply, effluent disposal, solid waste, roading); architectural design, structural engineering, mechanical engineering, landscape design, surveying and interior design.

The Master Plan is refining the overall site layout and design as illustrated in the 1994 Development Concept plan. The details of water supply (bore, tankage, piping) have been resolved as has the method and details of effluent and refuse disposal. All infrastructure systems meet or significantly exceed statutory requirements. Other than recyclable waste all effluent and refuse is to be treated fully on site.

Infrastructure design and operation details prepared by Truebridge Callender and Beach, civil engineers to the project, are appended.

- 4.6 Building development at Wharekauhau will be carried out in stages and according to market demand. Stage One comprises the construction of a new lodge and eight adjacent cottage buildings (20 suites) and the infrastructure required for this to function. The existing lodge/farmhouse and farm outbuildings will be relocated out of the Tourist Village zone or in some instances demolished. The existing two room cottage will remain for staff accommodation. Refer to Figure 6.

Stage Two will involve the construction of a number of Estate Homes in various other parts of the Village zone. The number of Estate Homes built in this and subsequent stages will depend entirely on the level of demand.

Sketch design for the lodge and all of the cottages has been completed and costed. The design and the costs are currently being refined. The siting of the lodge and cottages has been done to minimise the amount of excavation or the loss of any vegetation. The existing lodge/homestead is the third house to be built in this location and given its position in relation to the rest of Station and the outlook, it is easy to see why this site was selected. The views to Cape Palliser, the backdrop and the shelter provided by the existing vegetation were major factors for proposing that the new lodge be sited in virtually the same location as the previous farm homesteads.

- 4.7 The lodge has been carefully designed to reflect the scale of the immediate setting and to take account of the wider landscape. The scale and bulk of the two storey lodge building is reduced by designing the roof into three separate roof forms and wrapping the building around a courtyard. The sheltered courtyard provides outdoor living areas and opens out to and embraces the garden. The use of timber shingles and a plastered exterior imparts the notion of a large homestead rather a resort or hotel.

Service access is separated from the main visitor access and terminates in a service courtyard on the southwestern side of the building.

- 4.8 The cottage suites are housed in simple two and three room buildings sited either side of the lodge. Whilst the form and design of the eight separate cottage buildings are similar, three distinctive styles have been created through variations in exterior materials and finishes and in response to their siting. Cottages are referred to as:

- Stormwatch (7 rooms in three separate buildings);
- Pasture (3 rooms in one building); and
- Wetland (10 rooms in four separate buildings).

The cottages housing three suites also have a small single 'security' room that will be available to guests.

- 4.9 The existing tall shelterbelt and associated mature vegetation behind the lodge and cottages provides an appropriate scale and will help to 'visually absorb' the buildings. New planting would be added to this vegetation as part of the Stage One development. There will also be new planting around the new buildings to integrate them with the landscape. The large wetland proposed to occupy an area of low lying land in front of the lodge and cottages will also be constructed as part of the Stage One development. Refer to Figure 8.

With the implementation of Stage One, it will be necessary to relocate the farmyard/operations area; a new sheltered site to the north off the main race, but still in the Village zone has been selected for this purpose. Initially only a workshop and garage will be built but eventually a full range of farm buildings will be required.

Roading will be informal, essentially standard farm roads with space for passing in places.

There are several very old dry-stone walls on parts of the property and the Shaws have also built several walls since they have been on the property. These walls contribute significantly to the character of Wharekauhau and it is intended that new stone walls will be built as part of the development using the large supply of stones that were removed from the paddocks in former times and stacked in heaps in parts of the property.

5. Amenity and shelter plantings restricted mainly to the area around and adjacent to the existing lodge and outbuildings. Much of this vegetation comprises planted and self sown native tree and shrub species (eg ngaio, taupata, karaka, ti kouka, pohutukawa, etc);
6. Wetlands - there are several small natural wetland areas on the Station and some contain an assemblage of native plants. In addition, two small wetland areas have been developed and their margins planted.
7. Improved pasture.

Refer to Figure 3.

- 5.2 Shelterbelts of pine and some macrocarpa were planted early in several parts of the Station. The pines used were Bishop Pine (*Pinus muricata*), a species originating from California and which is regarded as an ideal species for exposed areas. Recent investigations reveal that these early plantings were probably supplied by the Wellington Botanic Garden during the period when it carried out trials on a wide range of exotic species and provided farmers and gardeners from all over New Zealand with seeds and seedlings. These shelterbelts are now mature and the canopy has opened up which is a characteristic of this species.

A wide range of other, mostly local native species (eg ngaio, karaka, taupata) have been planted or have established naturally as the sub canopy under the pines. The result are stands of tiered vegetation that provide ideal shelter.

A dense stand of pine and macrocarpa and local native species such as ngaio, karaka, kohekohe, titoki, ti kouka, taupata, karamu and kowhai were established behind the homestead; some of these trees have simply self seeded. Today this vegetation provides valuable shelter and enclosure and an ideal setting for the current lodge and cottages.

- 5.3 The three remnants of native vegetation have been damaged by stock and so their structure is simple (ie canopy trees, a sparse sub canopy and almost an absence of ground layer vegetation) and very little regeneration is evident. From a distance, the proliferation of native climbing plants in the canopy, particularly around the edges of the stand makes these remnants appear very dense and healthy. Once inside the stand however, there is very little understorey of native species with mostly exotic weed species and pasture grasses.

In a few places where fencing has been in place for many years and is secure, there is considerable regeneration, including palatable species such as five finger and kohekohe. The adult trees obviously flower regularly and there is a large amount of seed on the ground in places. Whilst the remnants have been subjected to stock, possum and deer damage and have a large area of exposed

- 4.10 To allow stock to graze over the property except in the immediate area around buildings, new permanent fencing and other barriers such as ha-has will be used. Just as roads are being sited so as not to obstruct or compromise ocean views, barriers such as ha-has, or farm post and wire fences located at the base of newly created swales, will be used to the same effect.

The gently sloping land will mean that in a few places, such as in front of the new lodge, earthworks will be necessary to recontour the land and create a combination of fences and swales to restrict stock from the lodge environs.. In other locations, such as around the cottages and some of the Estate Homes, only a short section of ha-ha or similar will be required; a typical 8 wire farm fence alone or in association with planting will exclude stock..

Typical ha-ha and swale details are shown in Figure 8.

## **5.0 Existing Vegetation**

- 5.1 Very little of the original mosaic of native vegetation that would have once covered the marine terrace remains on Wharekauhau. Much of it had been cleared by the time the first pakeha settlers had arrived and started to farm the area. Early settlers would have continued the burning to establish grassland and drained the wetlands to increase and improve pasture.

However, the early settlers very quickly recognised the value of vegetation for shelter and protection from the harsh coastal climate. Three small native forest remnants were retained, one of which has been partly fenced for quite some time. Several shelterbelts were also planted as an integral part of farm development.

The existing vegetation falls into seven categories:

1. Secondary native vegetation covering the steep slopes and terraces above the Wharepapa River and Wharekauhau Stream;
2. Small remnants of native vegetation on the flats, some of which have been fenced or partly so;
3. Regenerating native and exotic shrublands in the river and stream beds that has occurred since these areas were retired from grazing;
4. Shelterbelts - mature trees, planted by early settlers and others established more recently;

edge because of their small size, once securely fenced and noxious animals controlled then regeneration should occur. In places, supplementary planting of local native species, particularly around the edges of stands, is proposed to provide wind protection to the stand interior.

The mature cabbage trees growing in pasture in groups or as single specimens give Wharekauhau a distinctive character. These will not only be retained but used to advantage when siting any buildings to ensure that they remain prominent landscape features.

- 5.4 The proximity of the Rimutaka Forest Park provides a backdrop and setting for Wharekauhau and is an important in terms of the establishment and regeneration of local native vegetation as it provides a seed source and an opportunity to link the Forest Park with Lake Wairarapa, Lake Onoke and the coast. Planting of native vegetation, the development of wetlands, the extension of shelterbelts along with the regeneration in the Wharekauhau Stream and Wharepapa River, will provide a corridor for bird movement as well as new areas of habitat.

Very soon after moving on to Wharekauhau the Shaws embarked on a long term programme of landscape and ecological enhancement. To them it made sense from a farming perspective and also as a key ingredient to the development of their lodge and visitor operation. Most visitors who come to stay at Wharekauhau go on a farm tour which includes a trip along the coastal tracks to the Mukamuka Stream where the Shaws own 165 hectares of farm land and lease a 38 hectare block.

The landscape and ecological enhancement programme has included retiring and permanently fencing hill country adjacent to the Rimutaka Forest Park; Initially various unwanted vegetation like gorse and broom became established but regeneration of woody native species is now well advanced in these retired areas. The Station boundaries along the river banks have also been fenced to exclude stock and whilst a dense cover of gorse, broom and tauhinu very quickly became established in the riverbed and on the banks, there are now pockets of native vegetation becoming established. Wharekauhau Station and the adjoining Wharepapa Station are very well farmed properties and there is no evidence that unwanted exotic woody weeds such as gorse and broom are causing any major problems. In time, the areas that have been retired from grazing will continue to improve in terms of plant and animal habitat.

- 5.5 South Wairarapa has large tracts of wetlands on the plains as well as many small wetlands in the western ranges. Wetlands would have formed part of the mosaic of ecological habitats that existed originally in the district. Most of these wetlands have disappeared through draining and the only indication of their former presence are permanently damp depressions in paddocks. The Shaws have improved the few remaining wetlands by fencing them off to exclude stock and planting the margins with various native species. The

further enhancement of these wetlands and the development of new ones is an integral part of the future of Wharekauhau. With stock water reticulated across the whole property it has removed the need for farm dams and the intention is for the dams to be recontoured, fenced to exclude stock and planted with native species.

The increase in the area of wetlands and enhancement of the existing wetlands will play an important role in the provision of wildlife habitat and the linking of natural areas on the property to other wetland areas on adjoining properties and the wetland reserve areas of Lakes Wairarapa, Onoke and Pounui.

## **6.0 Proposed Planting**

- 6.1 The development both within the Tourist Village zone and on the rest of the Station envisages all of the existing vegetation types to be increased and/or improved. The development would marginally reduce the area of improved pasture on the fertile Opaki brown stony loam but this would be compensated by increased productivity through improved farm management practices.

The development of Wharekauhau Country Estate will create a new agricultural landscape where the concept of sustainability will be a major goal. The cornerstone of the development within the Tourist Settlement zone relies on Wharekauhau remaining a working sheep station because it is this attribute that attracts guests to the property. Many of the activities that guests participate in during their stay at Wharekauhau are farm related; at least half of the guests go on a farm tour with many opting to get involved with normal farm activities.

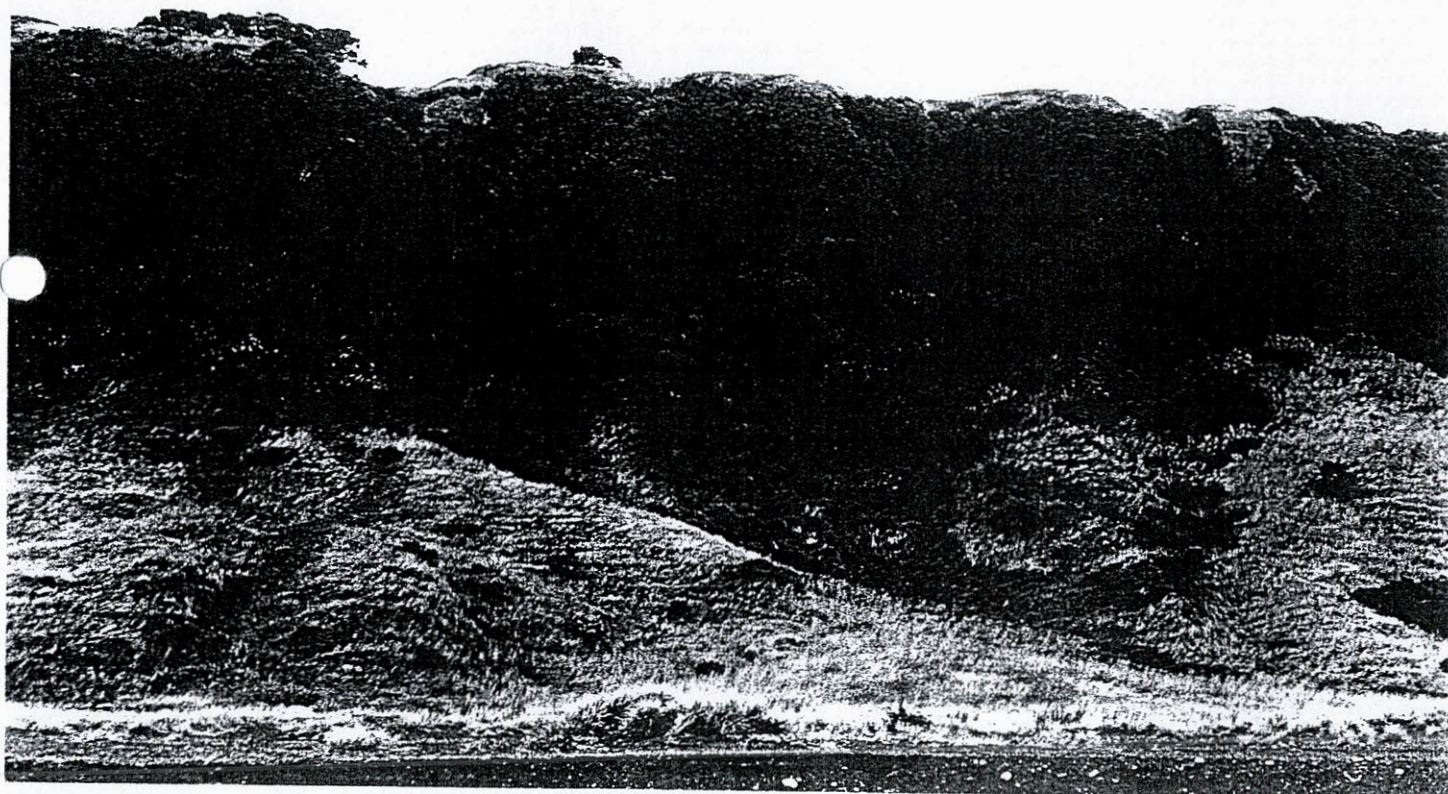
- 6.2 Wharekauhau offers visitors a unique New Zealand setting and experience. The vegetation, a combination of typical rural shelter, stands of remnant native species and amenity plantings of primarily local native species plays a substantial role in creating this distinctive landscape character. Proposed plantings within the Tourist Village zone and over the Station generally will enhance this character.

Not only is nearly all of the existing vegetation to be retained but a comprehensive planting programme started that would in time create a broadscale vegetation framework. Implementation is proposed to complement the pace and level of development.

A topographic survey of the entire Village zone with contours at 1.0 metre intervals was completed in 1994 prior to the preparation of the Concept Plan. This survey also located the position of existing buildings, fencelines, drains, shelterbelts and the edges of blocks of vegetation and individual mature cabbage trees in paddocks. In 1996, further, more detailed survey work was completed (contours at 0.5 metre intervals) which fixed the position of features



*Looking out towards Palliser Bay and Cape Palliser from northern part of Wharekauhau Station; Tourist Village Zone in centre of photograph, Wharepapa River to left.*



*Coastal cliff escarpment on the coastal edge of the uplifted marine terrace. The Tourist Village zone starts some distance back from the top of the terrace. Secondary native coastal vegetation has become established on the face of the escarpment.*



*One of the native forest remnants which in addition to being originally fenced were planted with Bishop pine (*Pinus muricata*) along some of the edges. These remnants are being refenced, many of the pines will be removed and local native species will be planted along the edges and in the understorey.*



*Wetland at Hinau Flat on the neighbouring Wharepapa Station. Similar wetlands would have once existed on Wharekauhau and the intention is to develop several new wetlands as an integral part of the Country Estate development.*

in the Stage One development area and for such things as the height of the water bore, water storage tanks, etc. This information has assisted in the siting of the new lodge, cottages, ancillary buildings and other things such as roads and services.

In planning and designing the development care has been taken to retain existing vegetation. Where this will not possible, trees will transplanted if practicable, to another location. In only a few areas will vegetation need to be removed, some because it is a hazard or at the end of its life but in a few places a small number of trees and shrubs will have to be cut to waste to facilitate the entry to the lodge.

The existing vegetation, whether it is native or exotic, will not only ameliorate the prevailing environmental conditions by providing shelter, shade and also wildlife habitat but it will also create a suitable setting for buildings and other structures. Any new plantings will recognise the existing vegetation pattern and species present and where appropriate build on this.

Some of the initial plantings will be planted as nurse species and these would be removed as the slower growing, final tree cover species become established. The pattern of vegetation will not necessarily follow the existing fencelines as the existing shelter planting does. Instead, much of the new planting proposed reflects the underlying landform, with both the pattern of vegetation and the selection of species designed to complement the landscape (eg in damp depressions, along water courses, terrace edges, etc).

- 6.3 Stock proof fencing around areas of advanced secondary native vegetation on steep slopes, terrace and cliff escarpments, and river and stream beds would continue to be maintained and in places extended both on the Station generally as well as within the Tourist Village zone.

New plantings would comprise:

- local native species around the edge of existing remnants to provide shelter and wind protection;
- new shelterbelt plantings primarily of radiata pine but with some stands of Bishop Pine to provide a framework of quick shelter. Some of these shelterbelts would remain long term and be managed as an integral part of farm development whereas others would have additional species planted as understorey once the pines had become established;
- farm and shelter planting of local native species in gullies, terrace edges, along fencelines, etc using root trainer or similar small grade plant stock;

- framework of native species around all new building development to provide scale and a landscape setting. Much of this planting will utilise advanced grade species and in a few locations, transplants. In places it would be supplemented by bulk planting of smaller grades;
- wetland species around the margins of existing and new wetland areas;
- detailed landscape plantings in the immediate environs of the lodge, cottages and estate homes (ie around outdoor living and garden areas).

Refer to Figure 4.

- 6.4 The environmental conditions at Wharekauhau are harsh and the relatively limited range of species that are currently growing there survive and thrive because they are adapted to these conditions. Providing species suited to the local conditions are used and the plant material is sufficiently hardened off and acclimatised to local conditions prior to it being planted, then there should not be a problem with plant establishment and growth.

One of the key factors to ensure that there is good plant survival and growth will be the establishment of an on site nursery holding area where all plant material will be held for approximately 5 months prior to it being planted. This aspect is particularly important when using advanced grade trees that have been sourced and grown outside the district. A 500 square metre site for the nursery holding area has been selected near the main development area and close to the main farm race to allow for easy supervision. Part of the nursery site is well sheltered with other parts providing various degrees of exposure. The area will be fenced, irrigation provided and protective wind mesh installed around the areas where the plant material is first held after it arrives on site.

Supervision of the nursery area would be the responsibility of the landscape contractor.

Given the construction timetable and the need to use a significant amount of advanced grade plant material, particularly for the initial stages of the project, it is not possible to use only locally sourced native plant material. Several hundred advanced grade native trees from a limited range of species has already been sourced from throughout the North Island. Based on the current construction programme it is intended that this material will be brought on to the site in autumn 1997 ready for planting later in the year.

However, in the longer term, contracts for growing advanced grade trees, ideally from locally sourced propagating material, would be set up with particular, preferably local, suppliers.

It is intended that for the bulk supply of smaller grade trees and shrubs, including some of the wetland species, that plant supply be contracted out for both the initial planting required in 1997 and on an ongoing basis. Two South Wairarapa plant nurseries have been assessed as to their ability to propagate this material. The local iwi, who are in the process of setting up a native plant nursery on the eastern shore of Lake Wairarapa, have also expressed an interest in tendering on this. Using a local nursery would certainly have advantages in terms of plant acclimatisation and minimising freight costs.

- 6.5 It is intended to transplant some of the semi mature native trees and shrubs currently growing around the main lodge and farmyard area to new locations within the Tourist village zone. Semi mature pohutukawa (*Metrosideros excelsa*) may also be transplanted on to the site from various locations if they can be sourced and easily transported to Wharekauhau. It is acknowledged that although this species is not local, it does thrive on this coast. Early plantings of pohutukawa at Orongorongo Station near Cape Turakirae as well as at Wharekauhau clearly demonstrate this.

- 6.6 Site preparation, planting and aftercare will be handled by a combination of specialist landscape, forestry and revegetation contractors and existing farm staff under supervision. Planting sites will be sprayed with a contact herbicide, deep ripped where required and mulched to retain moisture and reduce competition from grasses and weeds.

Dripper irrigation will be provided to all advanced grade trees. There will be provision made for irrigation to the areas immediately around buildings using a combination of water from the main supply and roof collected rain water (which will be stored in underground tanks). Plantings over the majority of the Tourist Village zone will use species that have shown an ability to thrive in this environment.

It is not intended that extensive spray irrigation be installed for all planted and lawn areas because it is felt that this would appear like a resort rather than a working sheep station. There would however be hose pipe upstands installed throughout the garden and lawn areas for hand watering.

Full irrigation is only necessary when there is a need to grow a vast array of plant material from all climatic situations; a more ecologically appropriate approach is to select species that are adapted to the local environmental conditions. This will not only ensure that they readily establish and thrive but that maintenance requirements and costs are minimised.

- 6.7 There will be a requirement for all planting done by specialist contractors to be maintained for 12 months; the planting specification will detail the level of maintenance work to be carried out during this period. This will ensure that all planted areas are properly established before the Wharekauhau site maintenance team assume responsibility.

6.8 The programme of amenity planting on Wharekauhau Station will continue with emphasis in the Tourist Village zone. This amenity planting will comprise:

- mass planting of primarily flax, toi toi, taupata and koromiko in gullies and between boundary fences and the cliff edge. These plants will be root trainer or similar grade;
- planting of ngaio, karaka, kohekohe, manuka, kanuka, flax, taupata and other *Coprosma* species as underplanting or along the margins of native forest remnants, in front of shelterbelts, as well as separate groups and stands. These plants will be of root trainer or similar grade;
- large scale framework planting along roadsides, around existing and proposed buildings, and in conjunction with the Estate Home lots. This planting will be mainly tree species from the range of plants that has demonstrated good survival and strong growth, such as ngaio, karaka, kohekohe, pohutukawa and cabbage tree. In some locations in the immediate environs of the lodge, cottages and estate homes, detailed plantings of a range of shrub species would be used as underplanting. A range of grades would be used (PB5 through to advanced grade).
- planting of wetland species not only around the actual existing and proposed wetlands but also in conjunction with natural springs, farm dams, etc. Many of these would be from root divisions of existing stock or root trainer grade.

## 7.0 Wetlands

7.1 The development of a network of wetlands throughout the site is an integral part of the entire project. In Stage One of the development (ie the area around the new lodge and cottages) a large wetland area is proposed in an area that although previously drained, always remains wet. This new wetland area not only will provide a key element in terms of landscape setting but it will introduce an important natural element in what is a very open part of the site and help establish the linkage to other wetland areas. This wetland will also be used to contain, control and 'scrub' stormwater. The runoff from the land and stormwater from the development will be directed to the wetlands and during periods of high rainfall intensity the wetlands will dissipate the energy and volume of stormwater. Refer to Figure 6.

This main wetland in front of the lodge will be constructed at two levels to accommodate the change in ground level across the site. A weir would be built at the outlet and where there is a change in water level.

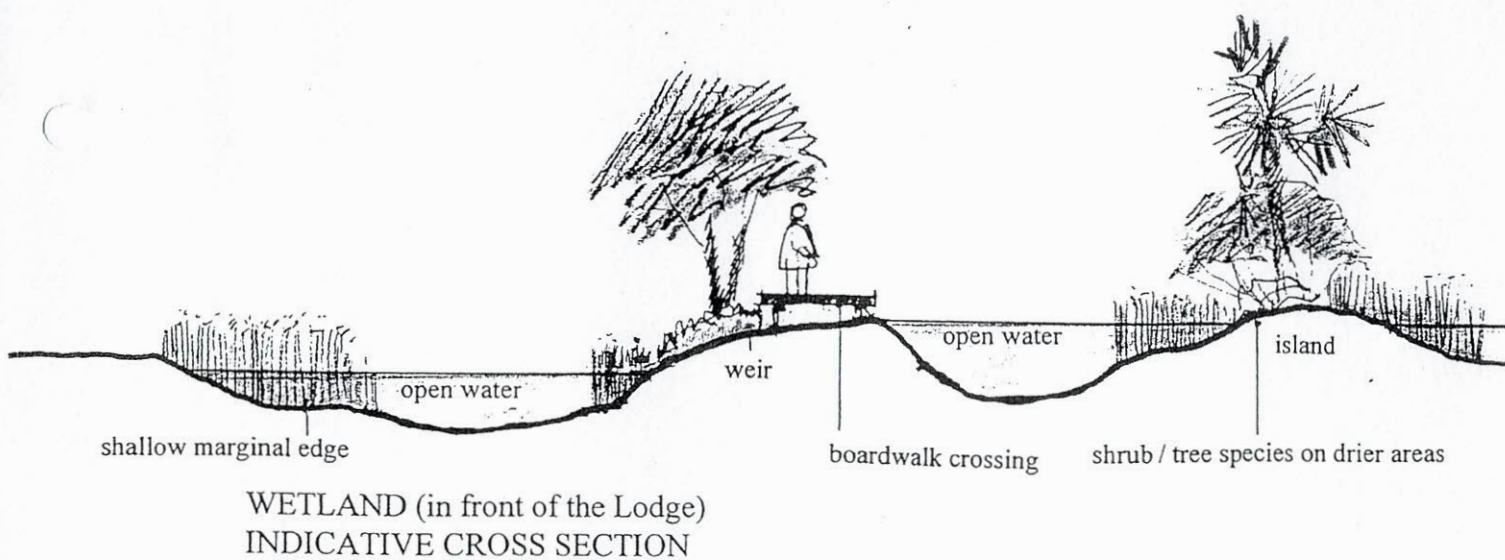
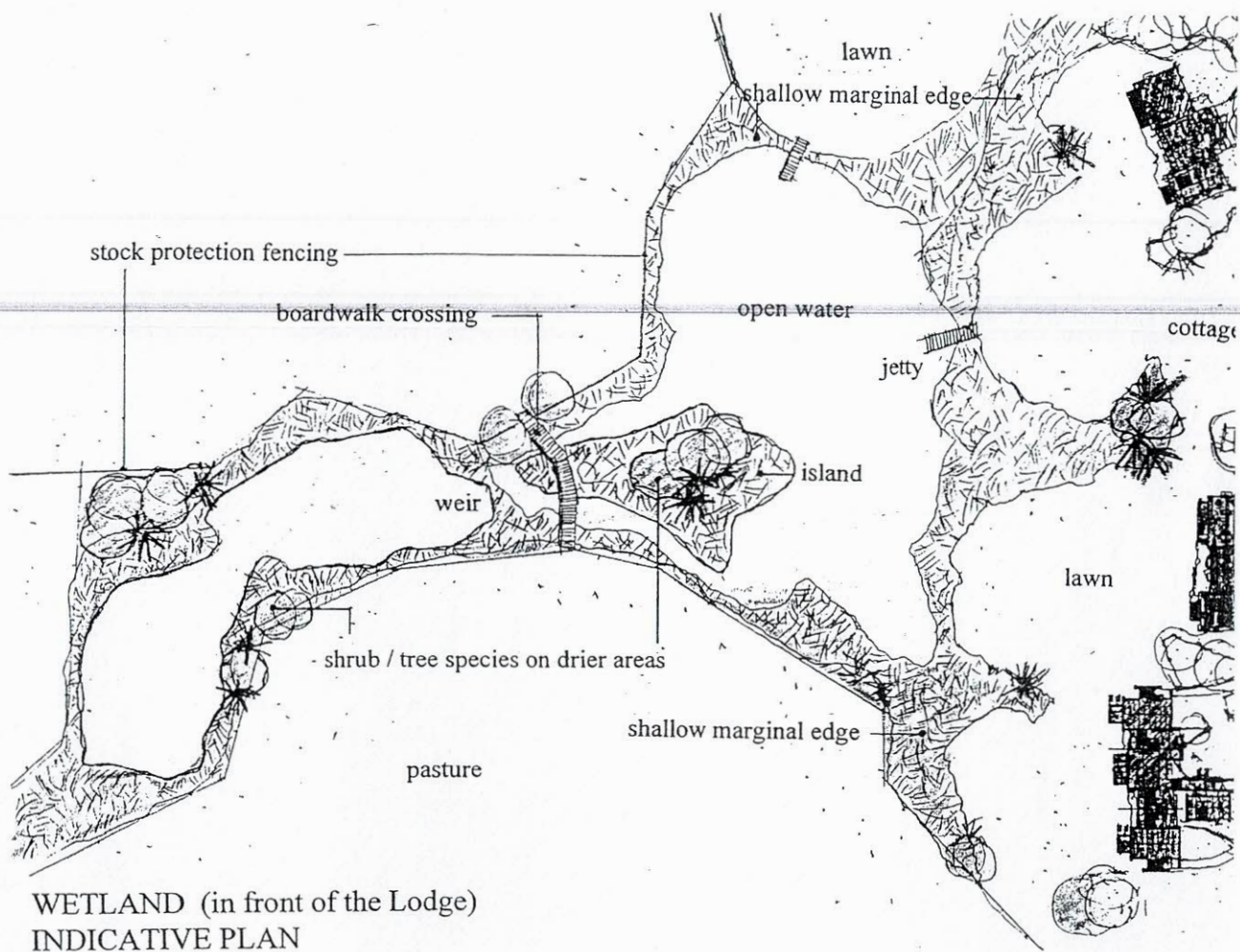
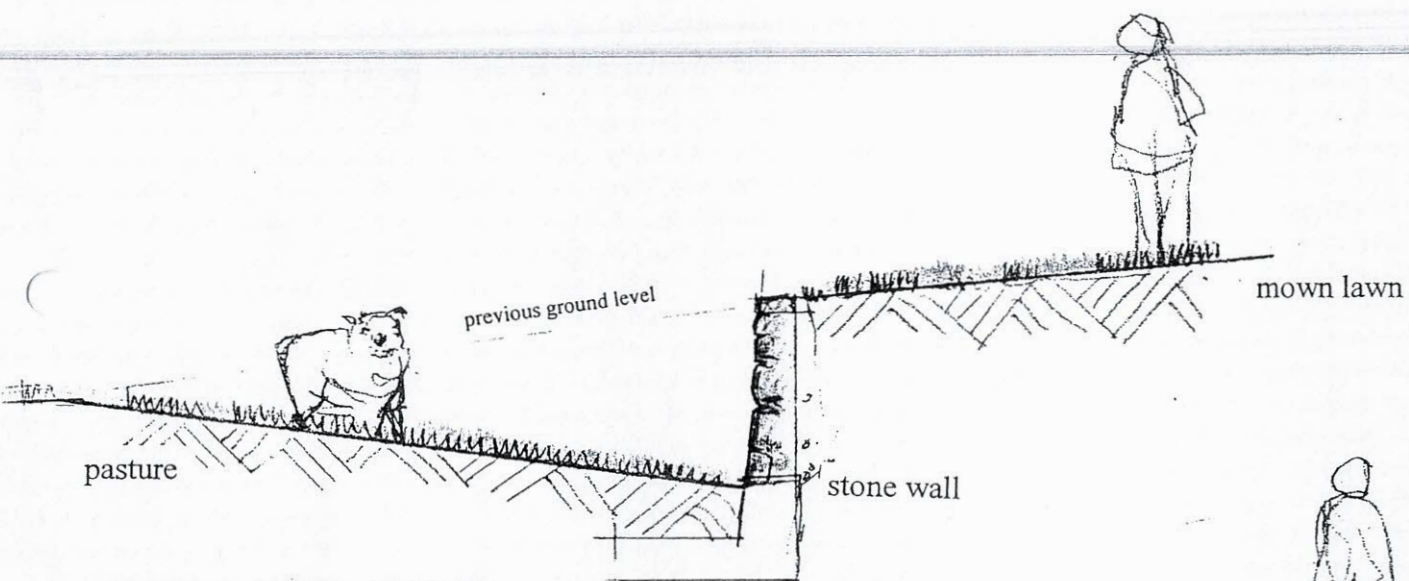
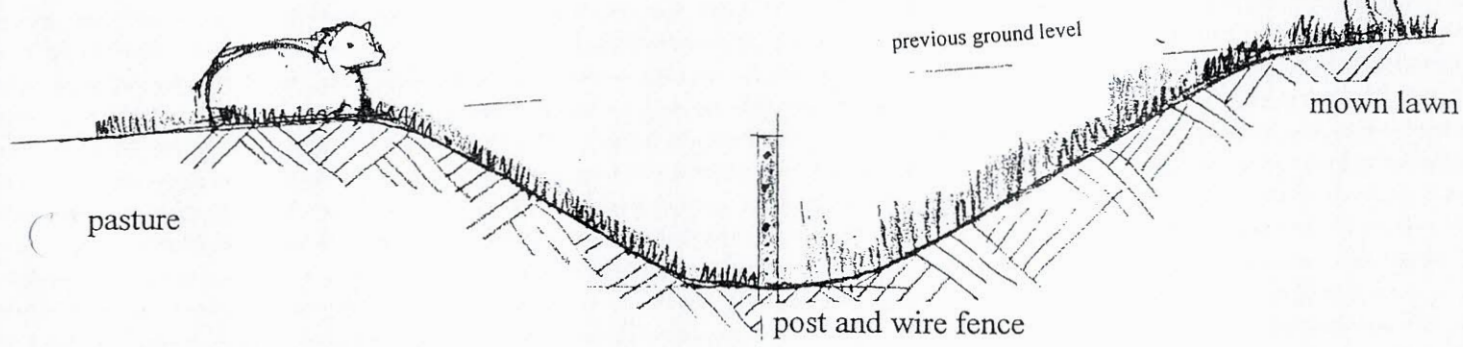


FIGURE 6



TYPICAL HAHHA DETAIL



TYPICAL SWALE DETAIL

FIGURE 7

This wetland, as well as most of the other new wetlands proposed, will be constructed in a way that is often referred to as a 'scrape'. That is, rather than digging a deep, steep sided hole, the land will be 'scraped' to create a depression which will be generally no more than 500mm deep. For a wetland to function successfully as plant and animal habitat there is a need to create wide shallow margins to provide ideal conditions for plants to establish. Waterfowl rely on the marginal vegetation as habitat and for food.

- 7.2 Investigations by the civil engineers to the project, have confirmed that the volume and flow of water into this main wetland is sufficient to ensure that there is water all year. There will of course be some seasonal fluctuation in the water level. Further and more detailed investigations will be completed as the project develops.

If required, the bottom of the wetlands will be sealed with clay. The areas where wetlands are to be developed will first have the topsoil removed and stockpiled and then the area will be 'scraped' and contoured, sealed with clay and then the topsoil respread around the margins. Once the final levels have been established the margins would be planted.

- 7.3 Several existing farm dams are proposed to be converted into permanent wetlands. These areas will be permanently fenced to exclude stock. The dams will be recontoured to create gently sloping sides and with wide margins which can be planted. The water level of some of these dams will be revised so that the wetland 'sits' comfortably in the landscape rather than appearing 'perched'.

- 7.4 Planting around all the wetlands will be carried out using locally occurring species, many of which will be obtained from root divisions of existing plants. For some of the wetlands the shaping and construction work will be completed during the summer months which will require the edges initially being sown in grass for stabilisation before being planted with wetland plants during the following planting season.

It is unlikely that any of the wetland areas will be completely planted in one season. Instead, an annual programme of wetland plantings will be progressively implemented.

Figures 6 shows details of wetland construction and planting for the area in front of the main lodge.

## 8.0 Implementation

- 8.1 Implementation of the Conservation Plan is a long term venture . However, with a plan in place it will ensure that landscape development proceeds in a coordinated and timely manner. Although the Conservation Plan will be implemented in stages, there needs to be a degree of flexibility to accommodate changing circumstances and conditions.

The Plan will be implemented through the combined skills of specialist advisers and contractors and Wharekauhau's own staff. When major building development works are carried out landscape and environmental enhancement works will be completed as an integral part of this work. However, landscape and environmental works will be ongoing and so a programme needs to be prepared to ensure that seasonal works such as planting and wetland development are completed under the best conditions. Preparation of an annual development plan will help to establish plant numbers required and enable orders to be finalised well enough in advance.

- 8.2 Monitoring the success of landscape and conservation works is essential for long term success. Monitoring must be carried out rigorously and systematically if it is to be useful. For example, monitoring the establishment and growth of plant species will help to determine what species should be propagated and planted in future years and it will also provide information on such things as the level of site preparation and the amount of aftercare required.
- 8.3 Implementing the Conservation Plan will fit comfortably into the established farming regime at Wharekauhau; that is, the need to complete the right operation at the right time is paramount to running a successful farm. And so too in developing a successful and enduring landscape.

Having an established and well managed landscape that reflects the character of Wharekauhau is one of the cornerstones of the Country Estate development. The Conservation Plan will help to realise this vision.

## References

Kinnear, Stuart

*Proposed District Plan for South Wairarapa.* South Wairarapa District Council, February 1994

McEwen, W Mary (editor)

*Ecological Regions and Districts of New Zealand*, Third revised edition, Sheet 3. New Zealand Biological Resources Centre, Publication No. 5, Department of Conservation, 1987

Wellington Conservancy

*Conservation Management Strategy for Wellington 1996-2000, Volumes 1 and 2.* Wellington Conservation Management Planning Series No. 2, Department of Conservation, 1996

Wellington Regional Council

*Draft Regional Landscape Plan.* Publication No. WRC/PP-G-96/31. Wellington Regional Council, 1996

---

## **Appendix 1: Infrastructure**

*This outline report on the effluent and refuse disposal, water supply and stormwater was prepared by Truebridge Callender and Beach who are the civil engineers to the project.*

## **WHAREKAUHAU COUNTRY ESTATE - INFRASTRUCTURE**

### **1.0 INTRODUCTION**

This report details the proposed infrastructure for the Wharekauhau Country Estate. The development involves the construction of a lodge, 8 cottage buildings and 65 estate homes.

### **2.0 SEWAGE TREATMENT AND DISPOSAL**

#### **2.1 SYSTEM DESCRIPTION**

The overall site has been separated into four separate catchment areas. The main catchment incorporates the homestead, the cottages and some estate homes. Each catchment will be reticulated and the effluent conveyed to dual digestive septic tanks and an effluent disposal field.

The sewage disposal facilities will be placed to minimise disruption to the working of the farmland and to ensure that there is no odour from the disposal field. Visual impact will be minimised.

##### **2.1.1 Design Parameters**

The sewage treatment and disposal system for the development has been designed for a flow of 250 litres per person per day. This figure allows for the volume of effluent produced to be higher than normal due to the high standard of facilities to be provided for activities such as dining and meetings.

##### **2.1.2 Reticulation**

Effluent from the homestead, estate homes and cottages will be collected by a piped reticulation system and delivered to dual digestive septic tanks. There will be two pipelines. A black water pipe system will collect toilet wastes and deliver the effluent to a black water septic tank and a grey water pipe system will collect the effluent from other facilities such as kitchens, showers and laundries.

The reticulation pipelines will be sized to carry the projected maximum flow assuming that all the accommodation is full. The piped reticulation system will operate by gravity flow.

### 2.1.3 Septic Tank Treatment

Treatment of sewage waste will be carried out using dual digestive septic tanks. The dual digestive tanks will achieve a high degree of treatment before effluent is disposed of to the soakage field. The twin tank system comprises one tank to collect and treat effluent from toilets (black water) and a second tank to collect and treat laundry, kitchen and bathroom wastes (grey water). The black water treatment tank discharges to the grey water tank before the effluent is delivered to the disposal field.

This method of treatment is a significant improvement on the traditional septic tank system as the solids in the black water tank are not disturbed by the high flow from the grey water waste. This minimises interference with settling in the black water tank and prevents solids carrying over into the disposal trenches.

### 2.1.4 Effluent Disposal Fields

The treated effluent flows from the grey water tank to a series of effluent disposal trenches. The trenches consist of a perforated drain buried in gravel. Effluent seeps out of the drain and disposes through the trench into the natural soils.

The disposal fields have been sited to ensure that they do not interfere with stormwater flows, water ways or ground water flows. Each of the disposal field sites has been selected to best serve the area that will be developed for each stage. The fields are designed in accordance with NZS 4610:1982 and 'On-Site Wastewater Disposal from Households and Institutions' by Gunn.

## 2.2 STAGE ONE REQUIREMENTS

The following sections describe the sewage disposal requirements for the first stage of the Wharekauhau development in detail.

### 2.2.1 Reticulation

The black and grey water pipe systems will be located as shown on Figure 1. This pipe work will flow from the highest cottage around the front of the homestead and into the septic tanks. The pipes will be buried alongside each other in the same trench.

### 2.2.2 Tankage

For the dual digestive tank system the total tankage capacity required is approximately 30,500 litres. The black water tank will be approximately 12,400 litres and the grey water tank approximately 18,100 litres. The tanks will be constructed of concrete cast insitu. The tanks will be situated underground as shown in Figure 4.

The proposed tankage will provide sufficient treatment for the homestead, all the cottages to be built and the estate homes within this catchment.

### 2.2.3 Disposal Field

Percolation tests have been carried out in the area that the proposed effluent disposal field for stage one of the development will be constructed. These tests were carried out in accordance with NZS 4610: 1982 'Household Septic Tank Systems'. The test results indicated a design soakage rate of 25 mm per hour through the soils on site.

Based on the loading rate of 250 litres per person per day, this disposal field will initially require five trenches each 100 metres long.

The trenches will be located as shown on Figure 2 and the trench profile is as shown on Figure 3. The trenches will be 1200 mm deep. This will allow for a large side wall area for soakage while still giving adequate clearance to the water table. Each trench will be 500 mm wide. The soils present on the site consist of a silty clay overlaying gravels. As shown by the soakage rate of 25 mm per day obtained in the percolation tests, these soils will allow good soakage of the effluent.

Although the septic tanks in this first catchment have been sized to accommodate the effluent flow from some estate homes, all the cottages and the homestead, the disposal field has not. The five trenches presently indicated for the disposal field will cater for the homestead and cottages. The two extra trenches required to service the whole catchment can easily be added to the disposal field when the future building takes place.

### **3.0 WATER SUPPLY**

#### **3.1 SYSTEM DESCRIPTION**

The Wharekauhau development will be serviced with water from a new bore installed adjacent to the Wharepapa River. This water will be treated and pumped to a reservoir for storage, from where it will flow by gravity to the buildings via a piped reticulation system.

The existing water supply system at Wharekauhau draws water from a spring, adjacent to the Wharepapa River and pumps it to a small storage tank. This provides water to the dwellings and homestead via a gravity feed reticulation system. However the pond fed by the springs can become polluted by farm animals and algae growth can cause significant suspended matter in the water. These potential problems will be eliminated by the proposed bore and treatment system.

#### **3.2 STAGE ONE REQUIREMENTS**

##### **3.2.1 Water Supply**

Water will be drawn from a spring on the western bank of the Wharepapa River at the site indicated by Figure 5. Water from this spring has been tested and found to be of generally good quality for drinking. The bore is expected to be approximately 4 m deep. It will supply clean water to the treatment facilities, which will prevent excessive clogging of filters, and it will reduce the risk of draw off of contaminated water.

The quantity of water required for the complete Wharekauhau development is estimated to be approximately 69 m<sup>3</sup>/d (69,000 litres/day). However the facilities will be sized to suit the staging of the development and the first stage pump and treatment facilities will supply approximately 40,000 litres/day. This will be sufficient for the homestead, the cottages and approximately 30 Estate Homes (assuming full occupancy).

##### **3.2.2 Water Treatment**

Water from the bore will be pumped through a treatment process consisting of fine filters and an ultra violet light (UV) disinfection process. The filters will remove any fine suspended and the UV disinfection will kill any bacterial or viral contamination in the water. This system will produce drinking water meeting the standards recommended by the Ministry of Health.

The treatment components will be augmented with additional filters and a second UV disinfection system when the development proceeds beyond the initial 40,000 litre/day usage.

##### **3.2.3 Water Storage**

The treated water will be pumped to a reservoir as indicated in Figure 5. The reservoir will be a 150 cubic metre Timbretank. Figure 6 shows a cross section of the tank. This will be sufficient to service fire fighting requirements and the demand from the development.

### 3.2.4 Reticulation

The homestead, cottages and Estate Homes will be serviced with water by a piped reticulation network operating under gravity flow from the storage reservoir. This network will provide sufficient flow and pressure to all buildings. Fire hydrants will be installed in strategic sites on the network for fire fighting purposes. It is also envisaged that supplementary fire fighting capability will be available from the swimming pool and/or the wetland areas when they are constructed.

---

## **4.0 STORMWATER**

### **4.1 STORMWATER SYSTEM DESCRIPTION**

Stormwater will be collected from three main areas - roads, building roofs and ground runoff. The only major increase in runoff will be from the building roofs. This will be directed to the existing system of open drains which will be modified where necessary to suit the development layout. These will also be developed to incorporate wetland ponds to enhance the aesthetics of the estate. The main increase in stormwater runoff will be from the additional building roofs.

---

There is sufficient flow in the water courses to ensure that the ponds will remain full all year. The minimum water level will be maintained in the ponds using weirs. These ponds will also provide buffer storage of stormwater flow during rainfall events. This will significantly reduce the effects of the increased flow from the roofed areas on the water courses and eliminate the potential for increased erosion at the water course outlets.

A layer of clay will be compacted in the base and sides of the ponds to decrease water loss from the ponds through the soils. It is expected that this clay will be sourced from the excavations being carried out on site.

## **5.0 REFUSE DISPOSAL**

### **5.1 ON SITE REFUSE DISPOSAL**

It is intended that refuse will be disposed of on site. Currently a system is operated where the household refuse from the existing lodge and farm buildings is disposed of in a hole excavated on the property. The refuse is covered at regular intervals with soil to prevent access to vermin. This system of disposal will be continued and refined to suit the development.

---

The new homestead and cottages are expected to produce enough waste to be disposed of in a hole approximately 10 m long, 0.9 m wide and 5 m deep. Excavated material would be used to backfill the hole on a regular basis.

Recyclable refuse will be collected at the homestead and removed off site to a local recycling station. Any food waste will be fed to farm animals on the property. The refuse that has to be disposed of in the excavated hole will be compacted before dumping to minimise the volume dumped into the hole.

On a regular basis the refuse hole will be backfilled with a 200 mm layer of soil to prevent vermin accessing the waste and to minimise odour. The hole will be sited in an area removed from general view and away from the water source collection area to the north of the estate as shown by Figure 5. Stormwater runoff in the refuse disposal area will be controlled with cutoff drains.

**TRUEBRIDGE CALLENDER BEACH LTD**

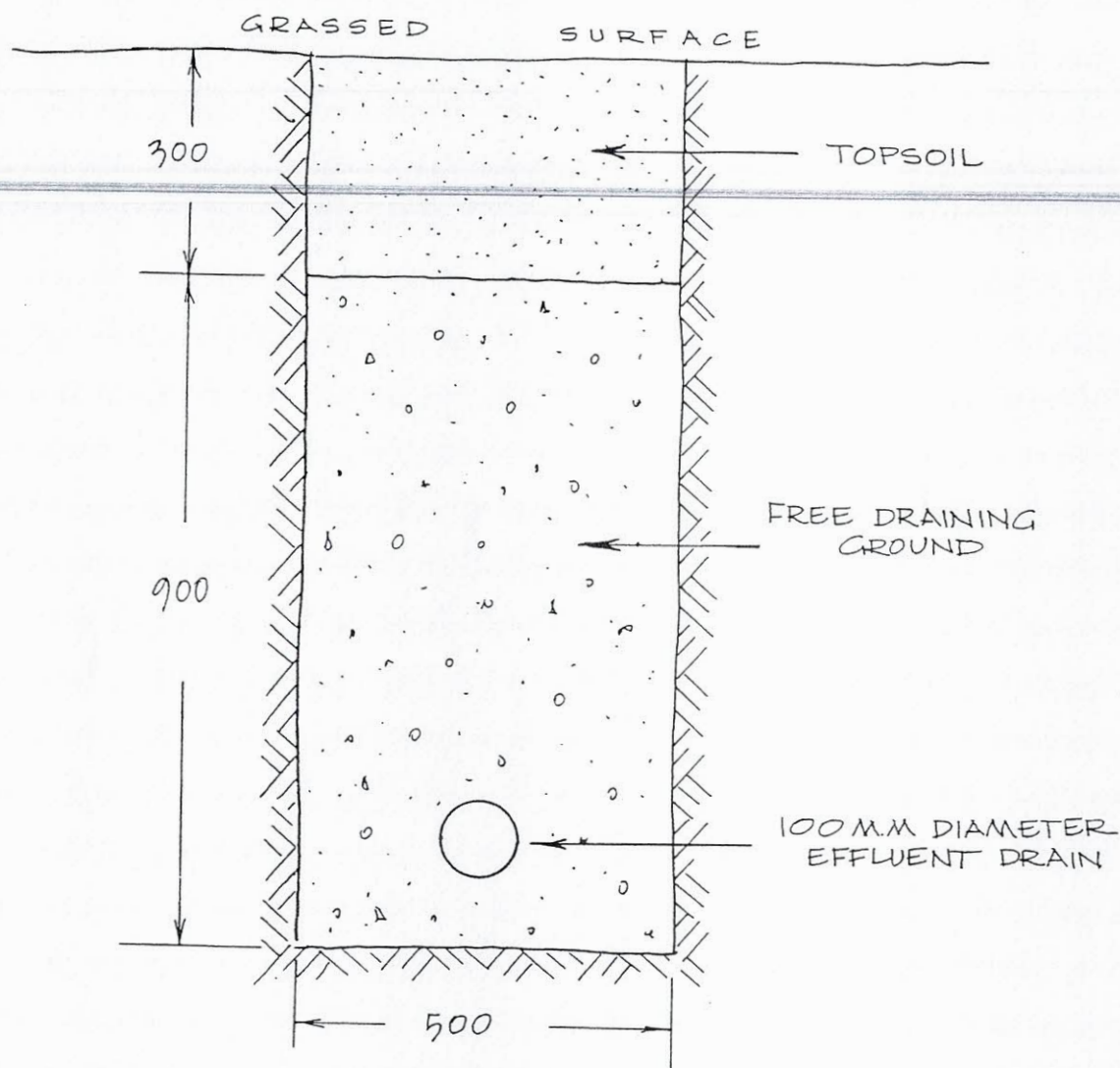


FIGURE 3

WHAREKAUHAU COUNTRY ESTATE  
SOAKAGE TRENCH CROSS SECTION

Scale: 1:10

	NAME	DATE
FIELDWORK		
DESIGNED		
DRAWN	LWA	Aug '96
CHECKED		

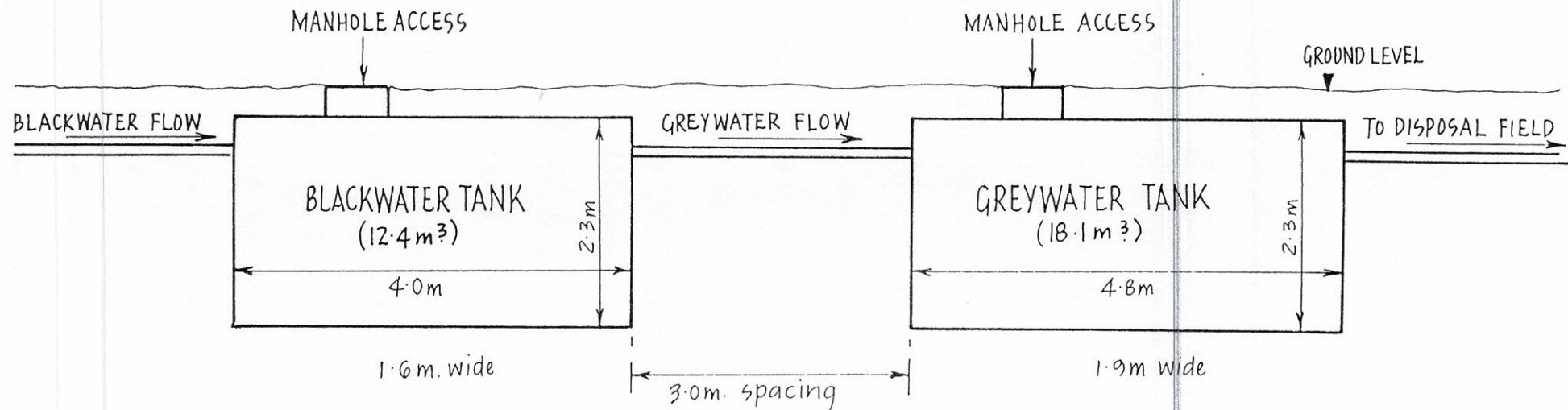
TRUEBRIDGE  
 CALLENDER  
 BEACH LTD

**tcb**

272 WAIKANA ROAD • CHRISTCHURCH • P.O. BOX 102 • NEW ZEALAND • PHONE 478 0342 • FAX 478 0410

SURVEYORS ☐ ENGINEERS ☐ ARCHITECTS ☐ RESOURCE MANAGERS ☐ VALUERS

SCALES AS SHOWN



## DUAL DIGESTIVE TANK LAYOUT

	NAME	DATE
FIELDWORK		
DESIGNED		
DRAWN		

TRUEBRIDGE  
CALLENDER  
BEACH LTD

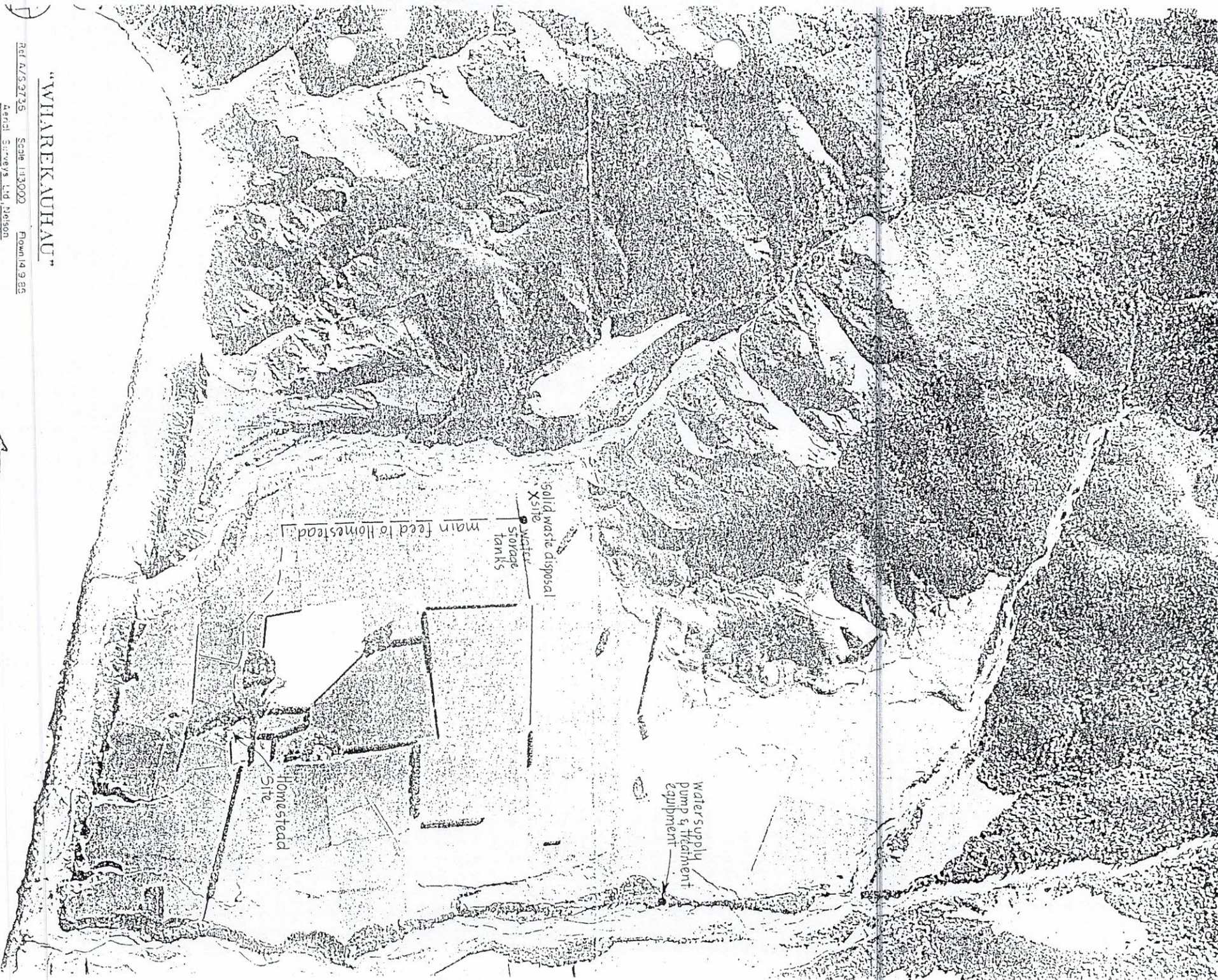
**tcb**

4 FRANKMOORE AVENUE • JOHNSONVILLE • PO BOX 13142 • WELLINGTON 6032 • NEW ZEALAND • PHONE 478 0342 • FAX 478 9410

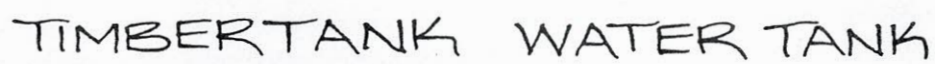
SCALES **N.T.S.**

DRAWING NUMBER

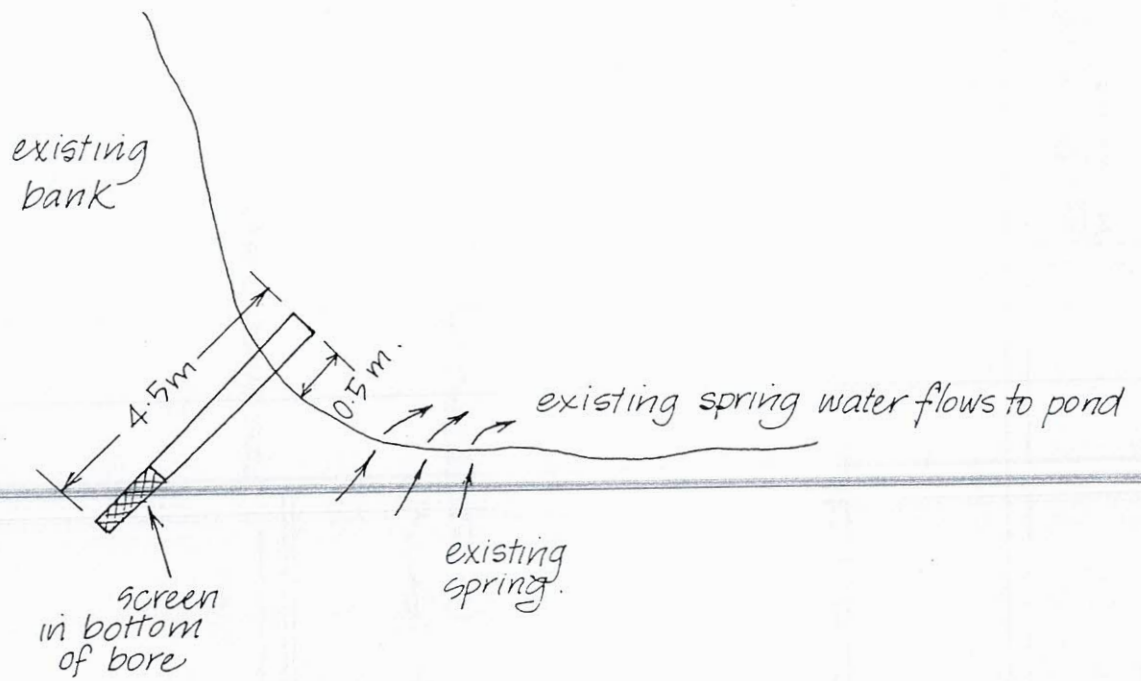
**FIGURE 1**



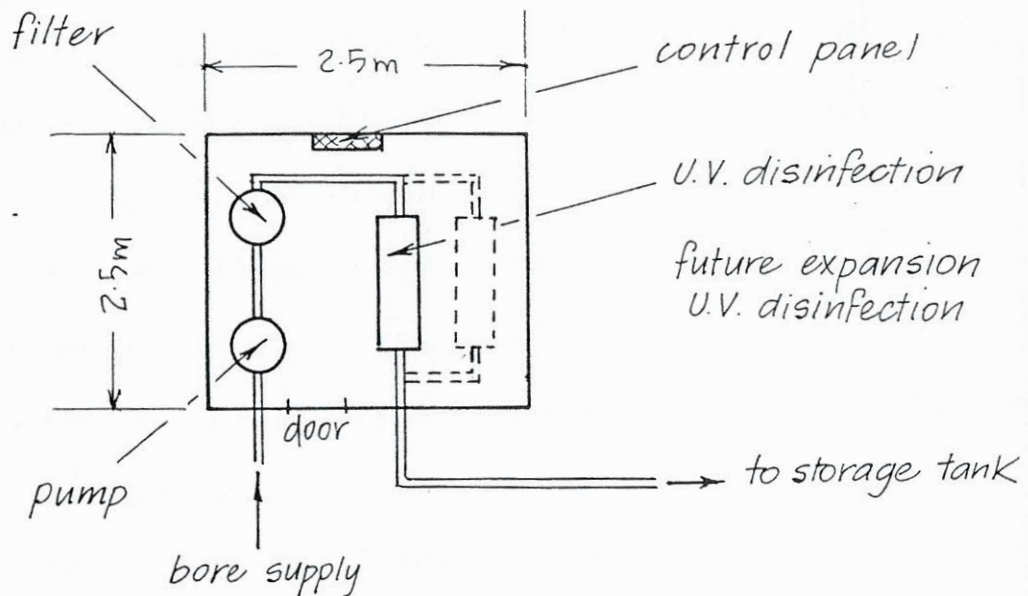
WATER SUPPLY & WASTE DISPOSAL LOCATIONS



SCALES	N.T.S.
DRAWING NUMBER	FIGURE 6



Borehole Cross Section



Treatment Pump Shed

	NAME	DATE
FIELDWORK		
DESIGNED		
DRAWN	LNA	14.11.96
CHECKED		

TRUEBRIDGE  
CALLENDER  
BEACH LTD

111/112 HANOVER STREET • AUCKLAND • NEW ZEALAND • PHONE 011 3342 • FAX 011 3410

SURVEYORS ☐ ENGINEERS ☐ ARCHITECTS ☐ RESOURCE MANAGERS ☐ VALUERS

SCALES	NOT TO SCALE
DRAWING NUMBER	

*Environmental Responsibility*



## WHAREKAUHAU TOURIST SETTLEMENT AREA

---

### 1.0 Background

- 1.1 Wharekauhau Station is a 920 hectare farm located at Palliser Bay, in south Wairarapa. Most of the Station (about 620ha) lies on a broad flat marine terrace between the Wharekauhau and Wharepapa Rivers. Two branches of the West Wairarapa Fault emerge at the Western end of Palliser Bay - one at Wharepapa Stream and the other at Mukamuka Stream which is located further westwards. About 180 ha of the Station is located on the terraces around Mukamuka Stream.

Movement of the West Wairarapa Fault has formed a line of bluffs immediately to the east and parallel to the course of Wharepapa Stream. Movement along the West Wairarapa Fault occurred in 1855; 2.7 metres of vertical movement and 12 metres of horizontal movement.

- 1.2 Wharekauhau Station is home to New Zealand's second oldest Romney flock which was established in 1878. The current owners, Bill and Annette Shaw have farmed Wharekauhau Station for 14 years. Previously, the Shaws farmed for 10 years in Huntly and prior to that farmed near Mount Peel in South Canterbury. For the past 12 years the Shaws have operated Wharekauhau Lodge which is aimed primarily at the overseas tourist market. The Lodge operation has been particularly successful and offers guests quality accommodation and seclusion on a well managed sheep station in a prime coastal location.

### 2.0 Wharekauhau Tourist Settlement Development

- 2.1 The proposed expansion of Wharekauhau Lodge is not to create a resort with all of the usual on-site recreational trappings etc, but to develop it along the lines that the Shaws have already successfully achieved. That is, Wharekauhau is proposed as a tourist development within a working sheep station. The expansion of the Lodge, the development of residential sites and the ongoing development and management of the farm itself are interrelated. For the concept of the Wharekauhau Tourist Settlement development to succeed, the continuing high quality management of the farming operation is essential.
- 2.2 The proposal involves the staged development of a limited range of high quality tourist and residential facilities within the farm landscape. The intrinsic qualities of the farming operation and the coastal landscape setting together make the proposal unique. To compromise the qualities and values of either would impact quite severely on Wharekauhau's appeal to overseas visitors at the select end of the market where Wharekauhau is currently positioned and would continue to operate.
- 2.3 Many tourist resorts spend vast amounts of money creating a setting and developing a particular theme or character for their development. At Wharekauhau the setting and character are already in place and the aim is to ensure that the development is carefully planned and designed so as not to compromise what already exists. The quality of the landscape setting is the cornerstone to the Wharekauhau Tourist Settlement proposals and the key to its success.
- 2.4 To ensure that the landscape is not only protected but enhanced, a series of criteria are proposed which would provide a level of control and certainty and ensure that a high quality development is achieved.

### 3.0 The Development Proposal

3.1 The proposed development involves the creation of what would essentially be a "new agricultural landscape" - one where carefully sited and designed residential buildings and facilities, are integrated into the fabric of a working farm landscape. There are three distinct parts to the development proposals:

1. Substantial expansion of the Lodge to cater for the type of guests who currently stay at Wharekauhau.
2. Development of a range of residential building types situated in locations that do not disrupt the day to day farming operations.
3. Ongoing development and management of the farming operation by increasing shelter planting, protection of existing areas of native vegetation and wetland areas, creation of new wetland habitats, additional amenity and habitat plantings, and the construction of carefully designed farm buildings and structures. In effect, the creation of a farm property that demonstrates sound farming practices and the concepts integrated farm management and sustainability

3.2 In order to realise the development, particularly if it is completed in stages, various conditions and criteria need to be clearly identified. These need to cover things such as:

1. Landform - alteration and effects.
2. Vegetation - removal and planting.
3. Buildings and structures - their siting, form, detail and materials.
4. Access and circulation - both vehicular and pedestrian.
5. Utilities - siting.
6. Wildlife habitats - protection and enhancement.
7. Open space.
8. Effluent disposal - method.
9. Water supply - source, capacity.

If sensitively planned and designed and with the necessary controls in place, the Wharekauhau Tourist Settlement development would not have any adverse effect on the existing coastal environment nor on the rural landscape generally. The opposite is in fact likely to occur with the development creating a much higher quality, new agricultural landscape.

3.3 The scale of the Wharekauhau Station landscape is large and dramatic, created by both the open coastal location and the prevailing natural systems (eg, landforms, drainage patterns, vegetation etc). The 250 hectares of marine-cut uplifted terraces lying between the Wharekauhau Stream and Wharepapa River provides many opportunities for integrated development. Whilst the overall scale of the landscape is large, it is the underlying variation in landform, and the existing infrastructure (ie, vegetation patterns, shelterbelts, farm roads and races, etc) that provides the potential for successfully integrating the proposed development into the landscape.

A "bottom-up" approach to the development is proposed whereby the landscape and its underlying ecology provide the determinants and constraints on *where* actual development occurs and *how* it is handled.

#### 4.0 Development Criteria

##### 4.1 Landform

The site boundaries of Wharekauhau Station are natural ones - the coastal cliff escarpment to the south, the steep forested hills of Rimutaka Forest Park to the north, Wharepapa River to the east and Wharekauhau Stream and hill country to the west.

At the broadscale, the uplifted marine terraces where virtually all of the development is proposed, appear as a broad flat expanse, broken only by shelterbelts and other plantings. However, at a more detailed scale the situation is quite different.

The broad flat terraces are in fact a series of smaller terraces that gradually increase in elevation moving from the coast, inland. The terrace edges have, in places, been reinforced by paddock subdivision and shelterbelts. These terraces and the hill slopes that form a backdrop to the property are drained by a network of streams, shallow gullies and swales.

The gentle elevation of the site means that from nearly all locations, it is possible to get uninterrupted panoramic coastal views. There is no need to increase building heights in areas away from the coastal escarpment, the nature of the landform compensates for this.

The proposed development at Wharekauhau would reflect the underlying character of the landform. The landform would be the key determinant influencing the form and nature of development. Criteria to ensure that this occurs are as follows:

- All structures, either above or below ground, would be sited according to the landform; the landform would determine the nature and scale of the built development.
- The landform pattern would be visually strengthened by the way in which the built development and vegetation patterns relate to it.
- Landform would not be unnecessarily modified to accommodate roads, utilities, buildings and other structures.

##### 4.2 Vegetation

The existing vegetation on Wharekauhau falls into six distinct categories:

1. Secondary native vegetation covering the steep slopes and steep terraces above the Wharekauhau Stream and Wharepapa River.
2. Regenerating native and exotic shrublands in the stream beds that has occurred since these areas were retired from grazing.
3. Shelterbelts - mature well established, and more recently established radiata pine shelterbelts.

4. Amenity and shelter plantings - restricted mainly to the area around, and adjacent to, the Lodge and its associated outbuildings. Much of this planting comprises native tree and shrub species (eg, ngaio, pohutukawa, cabbage tree, taupata, etc).
5. Wetlands - there are several small natural wetlands which are well fenced and contain a rich assemblage of native plant species. Two small wetland areas have also been developed.
6. Improved pasture.

The proposed development envisages all of these vegetation types to be increased and/or improved. Whilst the development would marginally reduce the areas of improved pasture it would also enable pasture on the more fertile Opaki brown stony loam to be improved and productivity increased under the current farming regime or for other high producing land uses to be introduced (eg, horticulture, vineyard).

Areas of advanced secondary native vegetation on steep slopes, terrace escarpments, stream beds and existing wetlands have all been excluded from the Wharekauhau Station farming operation and protected from stock since the Shaws bought the property 14 years ago. In their view it is wise to do so in order to concentrate their farming efforts on the flat and rolling country and also to enhance their overall farm environment. In addition, they have completed significant shelterbelt plantings as part of an ongoing programme. Small wetlands have been created and the areas around them planted, and new amenity tree plantings with species suited to the coastal environment have been carried out in areas concentrated around the Lodge and adjacent outbuildings.

A framework of vegetation is integral to all facets of the proposed Wharekauhau development. Not only is the existing vegetation to be retained but a comprehensive planting programme would be carried out. It would be structured in a way so as to complement the pace and level of built development.

Building on the existing pattern of vegetation, additional plantings of relatively quick growing species would be used to help ameliorate the existing environmental conditions. Some of these initial plantings would act as nurse species and would be removed as the slower growing final tree cover species become established. The pattern of the vegetation cover would not simply follow existing fencelines as much as the shelter planting does at present. (In places this pattern is appropriate, for it relates to the way the property is farmed. Instead, much of the new planting would reflect the underlying landform with both the pattern of vegetation and the selection of species designed to complement the landscape, eg, in damp depressions, along watercourses, terrace edges etc).

The following criteria relate to the retention of existing vegetation and the establishment of new areas of planting:

- All existing woody vegetation would be retained. After detailed assessment, dead, dying or hazardous trees would be removed.
- A long term vegetation framework would be planned and designed:
  - to enhance the broadscale character of the open coastal landscape;
  - to upgrade and extend the existing shelter plantings;

- so that all areas of existing native vegetation or areas to be retired from farming be permanently fenced or refenced and allowed to regenerate;
  - to create a series of linked wetland areas across the property which would be planted with local native species.
  - to create extensive new amenity tree and shrub plantings which would be completed in stages, using species that are appropriate to the scale of the landscape and the prevailing environmental conditions.
- 
- After a comprehensive assessment of land use and farm management activities additional areas that can or should be retired from farming would be fenced and allowed to regenerate.
  - A vegetation management plan would be prepared which would detail when tree planting management activities should occur and how they should be carried out.
  - An on-site nursery area would be established on the property as part of the ongoing development; this nursery area would be primarily used for growing on, or acclimatising plants commercially propagated elsewhere.

#### 4.3 Buildings and Structures

Existing buildings and structures at Wharekauhau are unobtrusive; they fit the landscape and the function they were designed for. The buildings are modest and reflect the pattern of development that has occurred on Wharekauhau Station. Extensive tree and shrub plantings are associated with all of Wharekauhau's buildings and structures, which is not surprising given the site's coastal location and the environmental conditions.

The proposed development would require a series of new buildings and structures to be built to fulfil quite different functions than those existing. To simply replicate the forms and styles of the existing farm buildings would neither produce an acceptable solution as far as producing a unified landscape, nor meet the new functional requirements of the development.

Producing a new agricultural landscape requires building and structure design solutions to be site-specific, drawing on both the landscape and the area's farming history and connections. This does not mean blatantly adopting or adapting south Wairarapa's "vernacular" architecture but it does mean designing a series of buildings and structures that relate in their form, materials and detail to the landscape in which they are located.

Buildings and other structures would be sited according to the following criteria:

- In locations to take advantage of the existing landform and vegetation patterns;
- Sited to maximise the use of the existing paddock subdivision and farm tracks;
- Sited to not unnecessarily constrain farm management;

- Grouped in discrete clusters;
- Sited to capitalise on panoramic coastal views, and to maximise sun, and privacy;
- Be of a form and height that reflects:
  - the nature of the landform;
  - the character of the rural landscape;
  - the coastal location.
- Be constructed of materials appropriate to the locality and situation.
- Sited to allow planting of an appropriate scale to be carried out to further assist their integration into the landscape.

#### 4.4 Access and Circulation

An established access route and pattern of vehicular and stock circulation already exists on Wharekauhau. It has been developed to reflect the pattern and needs of farm development. Farm roads and tracks that cross terrace faces have been handled carefully thus avoiding disruption of the natural landform. Whilst additional farm roads would need to be constructed to enable the proposed development to proceed, and for it to successfully operate, it is envisaged that much of the existing roading pattern would be retained and that any additional roading would be developed in a manner to complement the landscape.

Roading would need to meet the following criteria:

- Respect the landform pattern taking care to minimise the crossing of terrace faces and avoiding cuts, steep batter slopes, and filling of natural depressions and gullies.
- Avoid disruption of efficient stock movement around the property.
- To be sited along a landscape "edge" such as a change in landform, terrace edge, shelterbelt, etc.
- Be of a scale and constructed of materials that are compatible with the rural location.

#### 4.5 Utilities

Utilities like power and telephone cables, cellular phone towers, water supply lines, storage tanks etc, have a cumulative effect on the landscape. The way in which utilities are handled in a development can either complement it or they can impact heavily. The siting and design of utilities would adhere to the following criteria:

- In all locations utilities would be located underground in the first instance.
- Where any utility was required to be above ground it would be sited and designed in such a way to have minimal visual impact from both within the property and from locations outside it.

