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Tinwald Domain
Landscape Development

A Research Study
submitted in partial fulfilment
of the requirements for the
Diploma in Landscape Architecture
at Lincoln College
in the
University of Canterbury

By

M. Barthelmeh B.Hort.Sc.

November
1973
We enter here; enchantment lies
Around us, to delight our eyes
With beauty inexpressible.
This fair Domain is our great pride
Where wild fowl on the water glide,
And peace and loveliness abide

-(1)
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Many thanks to all the above

Mike Broadbent
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Introduction I
Introduction

1 GENERAL INTRODUCTION

Tinwald Domain has in recent years been subject to increasing pressure from users on the space available, and because of this, the Domain Board realised that a planning scheme would have to be prepared. This would enable them to administer a functional Domain, and cope with future recreation requirements.

This research study supporting a set of plans was undertaken to provide the Board with guidelines for the future development of the Domain, and to provide a better facility for the people of Tinwald primarily, and the Mid-Canterbury region as a whole.

a) THE SITE

Tinwald Domain is situated on the Northwest side of Tinwald, the Southern suburb of Ashburton Borough. Although part of Ashburton, it is separated from it physically by the Ashburton river, and to the traveller, appears as a separate entity. It is a rapidly growing Canterbury Plains settlement, and its avid interest in sporting activities is on the rise. The foresight of the original founders in setting aside a recreation reserve is to be commended.

The Domain is 230 acres (93 hectares) in area, and is split into 3 separate sections. The first is the larger part, with its Southern boundary on Maronan Road. The disused Mt Somers-Tinwald Railway line runs through the centre of this area, and separates the Golf club from the rest of the Public Domain. There is a small pine plantation between Frasers Road, and the Mayfield-
Tinwald Road, and a larger area fronting onto this and Frasers Road.

b) USAGE

The developed area of the Domain, botanically speaking, is not a botanists paradise - it is rather an area admirably suited to its present passive recreation usage, with tall stately trees enclosing a large area (11 acres : 4.45 hectares) of green open space, associated with a charming lake. Surrounding this are the areas devoted to more active recreational pursuits.

Extensive use is made of the lake area for picnics etc., while the active recreation part is used for cycling, rugby, and golf, with a pony club on the area across Frasers Road. Tennis, swimming, and a hockey field are situated on the Eastern side of the picnic area.

The Ashburton borough as a whole had a growth rate of 16% in 1971, whereas the Tinwald figure was about 40%. Basically, cheaper land is the cause of this very high growth rate, and the influx of mainly young people has increased Tinwalds active sporting interests still further.

A brief was prepared, with an approach method to tackle the problem of organising these increasing activities.
2 THE BRIEF

Since this is a formal research study, a formal brief was prepared, and after a meeting with the Board, the final form was agreed upon:

To prepare for the Tinwald Domain Board a set of plans, together with a supporting written report, showing:

(1) Proposals for organisation of the circulation pattern, and zoning of the various clubs and activities using, or wishing to use the site, in a staged Master Plan.

(2) Planning for future recreational requirements, including a camping ground if this is found to be feasible.

(3) Detailed designs of plantings, site furniture, utilities, access roads and carparks; with specific proposals for the present use of the site.

3 METHOD OF APPROACH

The method used in this research study is one of survey and analysis, followed by a conceptual stage, leading to the Master plan.

The survey is to determine all influencing factors on the site, both internal and external, and these are analysed, or appraised, to arrive at a base for the master plan, i.e. a concept. From here, a detailed site master plan is produced.

a) SURVEY

An understanding of present, and future recreation usage trends was basic to this study. This was undertaken, together with a regional survey of influencing factors. A more detailed
site survey was undertaken, gaining information on numbers involved in each activity, for example, with information on interest within the clubs or society, particular needs of that body, etc. A complete survey of all natural and man made facilities on the site was done, and as with the regional survey, soils, climate and vegetation data was gathered. Data associated with caravans, and caravan parks was gathered also.

All information pertaining to the site that could be gathered was recorded, so that the next stage could proceed.

b) ANALYSIS AND CONCEPT

All of this information has some effect on the practical, or functional success of the Master plan implementation, as well as the aesthetic visual success of the developed Domain. To determine just what, and how, is the function of the analysis, and from here the concept plan emerges. This is a design statement in broad terms of the layout of the site, taking into consideration circulation patterns, the degree of segregation of the various activities, and time zoning of the different areas. From here, the detailed Master plan is reached.
The Region II
The major influencing factor on the climate of this region is the deflection of New Zealand's predominantly Westerly airstream upwards by the Southern Alps. This orographic uplift means that the rain falls on the west as the air mass rises, and by the time the Eastern side of the Alps is reached, the airstream is relatively dry, which is reflected in the low rainfall of the region. This is the Canterbury Nor-wester. A stream of moist north-westerly air comes toward the South Island, rising over the Alps, and passing down into the long eastern valleys. Latent heat is liberated through the condensation that leads to heavy precipitation in the west and the mountains, so that the wind in the east is hot and dry.

This has two main consequences for the regional climate - it brings occasionally very high temperatures, and is responsible for low humidity. Warm dry Nor-west conditions are commonly followed by an invasion of cold air due to the arrival of a front along the eastern side of the ranges. The resulting rapid change contributes to the large diurnal and extreme ranges of temperature found here. These are common eastern tendencies, particularly noticeable in view of the speed with which cold fronts travel through the east of the island, after having been initially retarded by the mountains to the west. The greater part of the precipitation derives from these cold fronts, particularly if followed by Southerly or Easterly winds.
Another major factor influencing the regional climate is the physiographic form. It is one without appreciable relief. Although the plains slope gently from sea level to over 1000', the gradient is hardly perceptible to the eye. This lack of local relief has two major consequences for the regions climate.

Firstly, it is rather cloudy for an area of eastern location. Most sunshine is experienced immediately east of the ranges in Mid-Canterbury, where turbulent mixing helps to maintain clearer skies. Elsewhere, a belt of coastal cloud is frequent in the early morning, and again in later afternoon, as the ground cools, and less turbulent conditions prevail.

Secondly, this lack of local relief means that there is a corresponding absence of climatic diversity within the region. However, because of the sudden changes likely in the airstreams, and the dependence of the regional weather on this factor, the climate has quite a high mean yearly variability. This is apparent in the landscapes of Canterbury - a difference of a few inches in the rainfall between agricultural seasons for example has significant results. Conditions may be termed semi-arid in one year, with correspondingly poor crops etc., whereas the next maybe termed humid, with good crop and pasture production. This means that a method of evening out these differences must be adopted to enable economic production to occur with any reliability. Thus, the realisation of these potential contrasts from year to year is seen in the stock races, and modern irrigation schemes of the Mid-Canterbury plains, with shelter belt planting for stock and crop protection.
The geological formation of this region covers processes in the cenozoic, mesozoic, and paleozoic ages. The geology map shows the different rock formations as they are now, and it can be seen that the major parent material for soil formation is aggradation gravels from glacial action, and post glacial alluvium. The aggradation gravels are those resulting from glacial action on geological formations higher up in the foothills and mountains (probably greywacke's and argillites). After glacial recession, rivers have carried aggradation products down to the plains and deposited them as post glacial alluvium. (The alluvial deposits are seen surrounding each of the major rivers).

The aggradation gravels in particular have quite a strong correlation with soil types- ie. the Lismore series, whereas the post-glacial alluvium has a much more varied subsequent soil development. The parent material has the greatest impact on soil types formed, with subsequent modifying effects of climate, organisms, and topography, and the period of time to which the parent material has been subjected to these soil forming factors. Post glacial alluvium surrounds the Tinwald area, showing to some extent reasons for the many diverse types found here. However, any minor local effects of microclimate, or different organisms eg. can drastically alter the end product of soil formation from its initial parent material, so these will have contributed to the diverse soils also.
The soils of the Ashburton region include associated dry sub-hygrous Yellow Brown shallow and stony soils in the centre of the plains with Recent soils adjacent to the rivers. These soils have moderate to high levels of natural fertility but become droughty over summer. Lower down the plains in areas previously occupied by swamps, Gley soils occur. Although they have a similar fertility to these above, the Gley soils are less droughty, and may become waterlogged over winter.

CARAVAN USE

a) CARAVAN CLUB

The Automobile Association, Canterbury caravan club was contacted to find out numbers involved, activities planned etc., similarly to the clubs and associations information section in Chapter IV. There are 240 caravans on the club's roll and they have 9 rallies per year involving 50-100 of these (which means 200-400 people) depending on the length of the weekend. Distance travelled is also dependent on weekend length. Two day weekend trips are generally less than 65 kilometres (40 miles) to the destination, and long (three day) weekend trips may be up to 100-125 kilometres (60-80 miles). All the caravans have toilets, and most are totally self contained, so the only limitation on site selection is size.

The British standard is that the density should not exceed 25 caravans to the acre (0.41 hectares). Therefore, a minimum of 4 acres (1.62 hectares), plus ancillary features of access roads and utility blocks would be needed to cope with this club (although shower/toilet facilities are not really needed, they
are preferred). The casual user also needs to be catered for, and this could account for another 3 acres (1.21 hectares) in the busy holiday seasons of Christmas and Easter, or special days - eg. race meetings of high interest.

b) **DIMENSIONS**

These were given by the Canterbury club. Each caravan has a 3'6" (1.1 metres) tow bar, and most vans are almost 8' (2.4 metres) wide (legal maximum). Under 14' (4.25 m) long caravans have one set of wheels, ie. 1 axle, and can be manoeuvred by hand. Those over 16' (4.9 metres) long have tandem wheels, or 2 axles, and can only be manoeuvred by the towing vehicle. This means that some sites have to have much larger areas available for car and caravan to move as one, whereas others only need to allow for the caravan itself. The distance allocated for car, caravan and awning is 27' (8.2 metres) - ie. this is the width per unit used by the club as a general guide (compared with British standard of 20' (6 metres) between each caravan).

c) **VISUAL APPEARANCE**

Caravans, cars and awnings can be visually disruptive to a peaceful atmosphere - the reason for many caravan owners travelling to a country site in the first place. Bright coloured awnings, shiny metallic parts of cars, aluminium caravans (the last two also reflect sunlight) and the base colours of each all tend to create an impact on the site, and act as an intrusion into their green natural surroundings. Since these colours cannot be controlled, their positioning within a tree framework must be managed so that the minimum of visual interference occurs, ie. the maximum integration and absorption. Grouping of caravans
within a tree-screened area, and using smaller densities per acre will allow this. Earth mounding and contouring is an acceptable design solution, but is foreign to the very flat nature of the site, and indeed the whole Canterbury Plains atmosphere.

Thus, for integration and shelter for the caravans, informal groups of trees echoing the nature of the Domain provide the best solution. The use of deciduous species as well will provide shade in the summer, but allow winter sun to penetrate, and act to soften the present evergreen "skeleton" of the Domain. They will also soften the hard lines of caravans and cars and emphasise the informal groupings.

d) DISCUSSION

It is beyond the scope of this research study to determine the economic feasibility of a caravan park. Therefore, proposals have been given in the master plan for an area which could be used for caravans, or alternatively as picnic sites should it not prove practical or economic to form the caravan park as such. This multipurpose use of the land is desirable because it means that a single activity isn't controlling the usage of a certain area. At any one time then, depending on the demand for caravan sites or picnic sites, a degree of variety can occur in area allocation.

Within the basic informal grouping, smaller intimate areas can be provided to break down the scale even further, relating it to a picnic group rather than a car and caravan. These spaces would relate to a larger central area for more active pursuits. Up to 7 acres (2.85 hectares) of this type of land-use may need to be provided for the present, with only part possessing power points. Provision should also exist for possible
future expansion of this demand. Approximately 10% of the 4 sample population participated in caravan camping and the trend for the future showed an increase. This means that even with the Ashburton Coronation Park doubling its 40 power points this year to 80, with much better surroundings and natural amenities Tinwald Domain could hope to increase its patronage as these qualities become more widely known.

5 RESOURCES

a) CARAVAN CAMPS

An idea of other caravan facilities may be useful in making a decision on whether or not to go ahead at Tinwald. They are all regional resources, in the sense of acting as a starting point for other holiday recreational activities, or acting as recreational areas in themselves.

(i) Ashburton - This motor camp has been in service for 20 years and has had a new owner since April. There are about 40 power points at present, and the owner is planning to double this number as soon as possible. Since it is only three miles from Tinwald, it will be the Domain's biggest competitor if a caravan park is started there. It hasn't, however, the visual character and pleasant atmosphere of the Domain.

(ii) Geraldine - There are eight caravan power points available here.

(iii) Mount Somers - Ten power points are provided for caravans.

(iv) Peel Forest - Twentyfour power points are provided at Peel forest.

(v) Rakaia - There are 10 caravan power points available here.
(vi) **Temuka** - Although not shown on the map, Temuka is another big, fairly close camping area, and there are 55 power points for caravans.

b) **ATTRACTIONS**

Apart from its Plains atmosphere, people use the region for fishing, skiing, climbing, walking etc., and all the facilities available at larger settlements like Ashburton and Geraldine.

(i) **Longbeach Station** - This is 16 miles south of Ashburton, and was founded by John Grigg who created the Station from a great swamp. It is now run by his descendents as a model farm.

(ii) **Peel Forest** - Bush walks, climbing, and fishing are available here. As well, there is a degree of historical interest in Mt Peel church, and Mesopotamia Station.

(iii) **Mount Somers** - This area, as well as providing walks, and climbing, has a value as a source of gemstones, and amateur enthusiasts use it quite frequently.

(iv) **Mount Hutt** - The development of this ski field has meant quite a boom for Mount Hutt residents, but hasn't had a marked effect on Ashburton or Timvald - most skiers go for a day trip, and miss out these areas by travelling inland direct.

(v) **Fishing** - The Rakaia and Rangitata river mouths are very popular for fishing, while the Mackenzie Basin lakes are only two hours drive from Ashburton.

(vi) **Domains** - There are 30 domains within the Regional map area, varying from $1\frac{1}{2}$ to $348\frac{1}{2}$ acres in size (0.6 to 131 hectares), and varying in facilities and visual attraction from low to very high.
Timwald was known as South Ashburton prior to 1878, and in that year, it was renamed after Timwald Downs in Scotland. The Domain had its beginnings in the same year. The County Council applied to the Government for a recreation reserve of 59 acres, and the Commissioner of Crown Lands acceded to the request, but instead of the area asked for, granted 200 acres. When the land was properly surveyed, it was found to be 239 acres, 2 roods, and 18½ perches (96.92 hectares). The reserve was brought under the Public Domains Act, a board of managers was appointed, and the County Council gave them a grant of £150.

Steps were taken to lay the Domain out in its present form in 1881. From the Maronan Road entrance a half-chain drive was planned, bordered on either side by a belt of wattles and blue gums. The land that was not reserved for trees was offered for lease for periods of three to seven years. In the early years, tussock was a bit of a problem for the graziers. Contracts were let for a clearing program, and this was largely successful, although until quite recently these dumps of native grasses were still rather abundant on the sides of Maronan Road and Melcombe St., and by the Mount Somers line (now disused) which cuts through the Domain.

As early as 1888, a decision was made to provide a "Reservoir or Ornamental Piece of Water". Tenders were invited, and the sum of £100 put aside for the purpose. This was not
BY-LAWS
OF THE
TINWALD
DOMAIN BOARD
RELATING TO THE TINWALD DOMAIN.

BY-LAW NO. 1, 1891:

In pursuance of the provisions of "The Public Domain Act, 1881," the Tinwald Domain Board doth hereby order as follows, that is to say:—

The word "Domain" means the Tinwald Domain and Public Recreation Ground, as described in the New Zealand Gazette dated 1st, July, 1890. Words importing the singular number include the plural number and words importing the plural number include the singular number.

1. The Domain to be open daily throughout the year, during such hours as may from time to time be fixed or authorised by the Tinwald Domain Board, and no person shall enter the Domain or remain therein except during such hours. No charge for admission to be made, except in those cases where the Tinwald Domain Board, when the charge is on other than Race Meeting Days, for each adult, one shilling; for each horse, one shilling; for each vehicle or trap, one shilling; side shows, one shilling extra. On days on which Race Meetings are held in the Domain, the above scale not to apply, but charges for admission to Domain and Course to be as fixed or approved from time to time by the Tinwald Domain Board.

2. No person shall fish or take fish in any manner in or from the artificial water or lake in the Domain, or from any stream or lake therein, except with the permission in writing of the Tinwald Domain Board.

3. No person shall take or carry into or within the limits of the Domain any Explosives, or Fireworks, or other explosive substance, or any weapon, thing, or instrument of a dangerous nature, or any bows, arrows, or catsup, or shanghaies.

4. No person shall throw stones, or tomahawks, or any missile whatever within the limits of the Domain.

5. Dogs found within the limits of the Domain, unless the owner may from time to time be fixed or authorised by the Board.

6. No person shall throw or deposit in the Domain or leave within the limits thereof, any whole or broken bottles, glass, crockery, paper, remnants of food, or other refuse, or rubbish of any kind.

7. No meeting or assemblage of persons of any kind for picnics, sports, games, or any purpose whatever, shall be held within the limits of the Domain, without permission in writing from the Tinwald Domain Board.

8. No disorderly persons, vagrants, or persons of bad character or reputation shall be allowed within the limits of the Domain.

9. No person shall walk or otherwise trespass upon any beds, borders, or planted or cultivated ground within the limits of the Domain.

10. No person shall, without the permission of the Tinwald Domain Board, ride in or drive or bring upon the Domain any carriage, cart, wagon, express, barrow, bicycle, tricycle, or other wheeled vehicle whatever except in the possession of the Tinwald Domain Board.

11. No person shall, without the permission of the Tinwald Domain Board, except on days when race meetings are held in the Domain, within the limits of the Domain, ride on or exercise horses, ponies, or donkeys, or other beasts of burden.

12. No person shall go through, climb, or ride over or through, or willfully damage any fence, locked gate, or barrier, or other property belonging to or in custody of the Board, or take away, deposit or remove any wood, earth, or gravel, or break, or cut, or otherwise willfully injure or damage any plant, flower, shrub or tree within the limits of the Domain.

13. No person shall bathe in or enter into the artificial lake or pond in the Domain.

14. No person shall bathe in the Domain except at the place to be provided for the purpose, and then only in bathing, dressing, or when a clock in the evening and a clock in the following morning.

15. No person shall, without permission in writing from the Board, within the limits of the Domain, carry on, or be concerned in any trade, occupation, business, profession or calling whatever.

16. No person shall remove, disturb, destroy, or injure, or deface any fixed or movable seats, gates, fences, bridges, or other structures within the limits of the Domain, or on the boundaries thereof, or cut or carve or trace any letters, words, figures or devices on the property of the Board.

17. No boats shall, without the permission of the Board, be allowed in any water within the limits of the Domain.

AS TO TRESPASS BY CATTLE.

In this By-Law the word "cattle" means and includes any horses, mares, colts, foals, bull, cow, steer, ox, steer, cow, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, ox, heifer, bull, cow, steer, oz.
enough, (by £ 5 only) but the board considered "the excess cost judiciously spent". Construction was by horse and scoop, which has resulted in the interesting formation of a lake with its surface level above that of the surrounding land. The excess spoil was placed around the outside of the lake rather than carted away, and so to get to the lake, one has to climb up about 3 feet, which adds an extra degree of interest.

The board also expressed the opinion that the water would provide pleasure and profit for the District. Soon it began to do so, for on December 16, 1890, the Presbyterian Sunday School children had their annual picnic in the Domain, and in the words of the Ashburton Guardian "disported themselves on the greensward near the large pond, and sheltered in the shade of the trees". The guardian also reported in 1918:

"Tinwald is the possessor of an extensive Domain, which is becoming very popular for picnics, a number having been held this season. In addition to the lake with its rowing boat, there is a quarter mile running track, while its swimming bath is one of the largest in the Colony. The grounds are under the control of a progressive board, which is striving to do its best for the public".

The island in the centre was placed there in 1892 and by this time also, the iron gates on the Maronan Road entrance and the wooden gates at the end of the drive had been set in position. The lake was stocked with imported perch which grew to a good size in their new habitat, and at one time a certain amount of illegal fishing took place - even some people from Ashburton came over to do a spot of quiet angling.

The earliest application for sports grounds was in 1884 when the Tinwald Cricket Club applied for and was allowed to rent 10 acres. In 1889 the Tinwald Racing Club moved to a new track in the Domain; the track was one chain wide, and one mile
in circumference (see Map No. 6). A grandstand and
closure had been erected near where the caretakers house
stands at the present time, and the following year a three-
roomed judge's box was built.

A running track was formed in 1896, and by 1899 Tinwald
had become very sports conscious. A meeting was held in
April of that year, and a Sports Association was formed. The
board agreed to a pound for pound subsidy for the purpose of
laying down a cycling track, and improving the ground. This
Association continued until 1911, when in its place an Amateur
Swimming and Athletic club came into existence.

In 1900, the Tinwald Tennis Club applied for land for
a tennis court. This was formed in the Laghmhor Road part of
the Domain (see Map No. 6), where the cricket grounds were
also situated. A second tennis court was laid in 1905. Later
still, hockey and rugby fields came into use in the same part
of the Domain.

Now, all sport's bodies have their fields and activities
in the Maronan Road part of the Domain, and in 1967 the Domain
Board made 40 acres (16.19 hectares) of land between the Rail-
way line and Frasers Road available to the Tinwald Golf Club for
a 9 hole course. In 1969, a further 58 acres (23.47 hectares)
of land became available, and the course extended to 18 holes.

Bathing was at first allowed in the lake, but later that
was prohibited and a bathing place made in the Laghmhor Creek
near Frasers Road. This was not satisfactory though, and in
1910, the Chairman of the Board reported that he had received
numerous requests for a swimming bath. This was finally decided
on in 1911, and was planned to be 66 yards long and 15 yards wide.
A £78 tender was accepted, and as with the formation of the
lake, horse scoops did all the excavation. The racing club had gone out of existence in about 1908 and its buildings were dismantled to make dressing sheds. The banks were sown in grass, and a screen of lauristina's and toe-toes was planted on two sides, while on the other two sides, limes, alder, and silver birch were planted. Later, the baths were concreted: sides first and then the bottom.

About 1958 the Swimming Club asked the Domain Board to remodel the baths, promising to assist with labour and finance. The floor of the baths was raised, making filling quicker and more economical (even now the pool holds 260,000 gallons (1,200,000 litres) which is about one third of the original capacity), and a shallow end was provided for the children. Unfortunately, the lime trees were sacrificed to implement this plan.

Water to fill the baths came at first from the lake, which was filled in its turn from the Lagmhor creek. The Board was concerned about the quality of this supply, for although it was filtered, tests by the Public Health Department proved it to be substandard. When Timvald was connected with the Borough water supply, arrangements were made with the Borough Council to have a four inch main extended to the Borough boundary, so that the Domain Board was enabled to run off a two inch supply line to the pool.

The first paid caretaker was appointed in 1890, and the conditions of his employment were: - to work in the Domain four days a week; look after the Domain all the week; impound wandering stock; and prosecute persons damaging Domain property, or trespassing. The present house was built in 1914 for £150, and caretakers have lived there ever since.
OAK PLANTING IN COMMEmORATION OF THE VISIT OF THE PRINCE OF WALES, 17TH MAY 1920
Swings and see-saws were provided for the children's playground initially, and then later a slide and paddling pool were presented.

The Duke and Duchess of York (later King George V and Queen Mary) visited the Domain in 1901, and the two oaks marking the entrance to the lake were planted then. Another oak closer to the baths was planted in 1920 to commemorate the visit of the Prince of Wales.

Since 1906 a boat has been available for hire on the pond, and a new boat was purchased by the Domain Board in 1965.

The original picnic shelter shed was built in 1917, and is still in use today, with electricity connected in 1967.

2 LOCAL CLIMATE

a) INTRODUCTION

The following information is based on meteorological data collected at Ashburton. It was supplied by the New Zealand Meteorological Service, Wellington, and is more detailed than the climate section in Chapter II.

b) WIND

From the wind diagram (Climate - 1) it can be seen that the prevailing winds come from the North West to North East sector (45% from this quarter). The predominant spring and summer wind is North East (20.2%); autumn is North and North East (32.1%); and winter is North West (24.1%). There is an average of 40.7 days per year with wind gusts of between 34 and 52 Knots, and 2 days per year with gusts greater than 52 Knots.

This means that to create a pleasant micro-climate (literally: small climate ie. local conditions on a smaller,
Wind speed, direction & frequency

Temperature

Climate - 1
personal scale) shelter from the predominant winds is necessary. Since the airflow is basically Northerly, East West shelter is required. In a rural setting, the only form of shelter that can be considered is vegetation (in the Tinwald Domain this vegetation serves a triple purpose: shelter, visual relief and accent on a predominantly flat landscape, and spatial division between the various identifiable areas). However, other winds are by no means absent, and to create really sheltered areas, a system of interlocking shelter is required. This isn't as mathematical as it sounds, it is just a way of expressing the idea of association of shelter, in a form combining effective wind control, within functional and aesthetic considerations of the overall master plan.

c) RAINFALL

This averages 720 millimetres (28"') per year, and is fairly evenly distributed throughout the 12 months. There is a slight tendency for summer maximum rainfall. There is an average of seven days per month with rainfalls of 1 millimetre (4 points) or more, and an average water deficit for the year of 109 millimetres (4.36") occurs between November and April (see - Climate 2).

The water balance table shows average periods of water deficit, soil moisture recharge, and surplus water (as drainage), while the water deficit table shows the amount of net average monthly deficit. (These tables are based on the Thornthwaite formula, with soil moisture capacity taken as 75 millimetres. This means that the figures assume average-rate evapotranspiration for each day until 75 millimetres of soil moisture has been withdrawn, and then becomes zero).

From the tables it can be seen that

(i) A water deficit occurs between October and March ie. during
Water balance

- Deficit
- Recharge
- Surplus
- Potential evapotranspiration
- Rainfall

Water deficit

- Net average monthly deficit
- Average deficit
- Average surplus

Climate - 2
this period, the average ability of plant material to utilise water in growth is not matched by supply of water via rainfall. Therefore, for uninterrupted plant growth, water should be supplied during this period. This applies mainly to young trees trying to become established, as a serious check in growth at this stage means very slow later development, or even death. In this sense, water supply is limiting to optimum plant growth, if all other factors are equal (eg. nutrient supply etc.).

(ii) The net average monthly deficit reaches a peak between December and March, coinciding with warmest temperatures of the year (from Climate 1). The slight discrepancy between the two tables (water deficit table shows deficits from mid-November to April) is because the actual deficit figures include available soil moisture with respect to potential evapotranspiration (P.E.T.) and the surplus figures include P.E.T. and restoration of soil moisture as well as that lost as drainage. January has the highest deficit (agreed by both tables), of 30 millimetres approximately. This means that on the average, in January an extra 30 millimetres (1.2") could be utilised by plant material to maintain growth rates.

d) GENERAL

From the temperature chart (Climate 1) it can be seen that the average range is from 16.5°C to 5°C (63°F to 4.15°F).

The average number of sunshine hours per year is 1886, which is 44% of possible. There is a slight tendency for more winter sunshine, probably due to the pre-mentioned factor of air turbulence being greater in winter than in summer.
Relative humidity varies from the low sixties in summer, to high seventies in winter. There is an average of 108 days per year with ground frosts (most between May and September). There is also an average of $2\frac{1}{2}$ days per year each of snow, hail, and thunder.

The temperatures are in the cool range, but sunshine is quite high, and this, coupled with the water balance means that reasonably good tree growth will occur for most of the year, providing that species tolerable of often dry conditions are used. The only problem will be initial growth, but with additional watering/mulching even this problem can be overcome.

3  **SOILS**

a) **INTRODUCTION**

There are five separate soil types recognisable on the site. These were identified by a survey of the soils of the Downs and Plains of Canterbury and North Otago at a scale of 1" to 2 miles. This was modified, using a 20 chain survey carried out by the Soil Bureau, D.S.I.R. In general, the eastern end of the Domain tends to have less well drained soils than the western end, with an excessively drained strip running through the centre.

Soils information was not available on the site survey scale of 1" to 3 chains, so the boundaries marked are only an approximate indication of the extent of each of the following soil types.

b) **TEMUKA SILT LOAM**

This is a slow draining soil, and retains quite a good moisture status for satisfactory summer pasture growth. It is
POORLY DRAINED SOILS, EASTERN END OF DOMAIN
however, likely to pug in winter. This high soil moisture has slowed up the decomposition of humus, and organic carbon averages about 8%, as compared with $2\frac{1}{2}$ to $4\frac{1}{2}$ in most well drained soils ('A' horizon pH is 5.6).

\( c \) \ WAKANUI SILT LOAM

This soil is imperfectly drained, may pug in winter under agricultural use, and is intermediate between Templeton and Temuka soils for summer droughtiness. It has a medium nutrient status, and thus is a good "all year" soil, for cropping, pasture growth etc ('A' horizon pH 5.7).

\( d \) \ TEMPLETON SILT LOAM ON SANDY LOAM

Has less summer droughtiness compared to the other Templeton soils, and is well drained. It has finer textured topsoil and subsoil, and forms narrow belts parallel to the River from the Ashburton to the Ashley ('A' horizon pH 4.9).

\( e \) \ TEMPLETON SHALLOW SILT LOAM (OVER GRAVEL)

It is the most extensive and widely distributed soil of its series. It is very well drained, and tends to be droughty in summer. The topsoil structure is usually more weakly developed than the silt loam ('A' horizon pH 5.4).

\( f \) \ TEMPLETON SHALLOW AND STONY SILT LOAM

This soil type has now been regrouped with the 'Eyre' series, which are very free draining soils. It is excessively drained, very droughty in summer, and some problems may occur with surface stones ('A' horizon pH 5.5).

\( g \) \ SUMMARY

This is based on the previous soils information and the previous soil types all have different characteristics, one of the more important ones being ability to retain water. This
SHALLOW STONY SOILS, WESTERN END OF DOMAIN
varies from the Temuka silt loam, which retains too much, to
the Eyre (Templeton) shallow and stony silt loam which is exces-
sively drained. The water retention and depth of soil are the
two most important factors to consider in the Domain when app-
raising each soil for its ability to support vegetation (particu-
larly large tree species), and its ability to withstand use
by people - either from their vehicles, sporting activities,
or just general use of the land (picnicking etc.).

Thus, the Eyre (Templeton) shallow and stony silt loam,
being excessively drained, and liable to droughtiness in summer
is not suitable for concentrated public use in summer. How-
ever, in winter, there is no pugging because of this free drain-
age, so it is suitable then and can take reasonable heavy usage
without churning up. Because of its droughty nature, and shallow
topsoil, it is not suitable for some species of trees, particu-
larly Pinus radiata, which is liable to windthrow. Trees with
a more penetrating root system, and able to withstand generally
dry conditions are the only ones to be considered for planting
on this soil type.

This applies also to the Templeton shallow silt loam - it
is not quite as droughty as the Eyre, but again vegetation is
subject to windthrow, and only drought tolerant species will grow
well.

The Templeton silt loam on sandy loam is well drained,
and less droughty than either of the above two soils. It is
a deeper soil, so windthrow is not a real problem, and although
dry, a greater range of species will tolerate its conditions.

Wakanui silt loams are intermediate in droughtiness be-
tween the Templeton and Temuka soil types. As such, they do not
dry out excessively in Summer, and also don't hold too much water
PINUS RADIATA WINDTHROW ON SHALLOW SOILS
in winter. Thus, they don't pug so easily as Temuka's in the winter, and have better pasture regrowth in the summer. As and "all year" soil, then, the Wakanui covers the range of absorbing summer and winter usage with the least damage.

The final soil type, Temuka silt loam, is the least well drained of the five on the Domain. It pugs in winter, and may be limiting in some instances to tree growth because of poor drainage. Winter usage should therefore be avoided, although it will tend to keep its moisture during the summer, which is an advantage in keeping a good grass cover for some activities.

In this summary, tendency or not to pug has been determined from agricultural usage. It does however give an indication of the suitability of each for summer/winter recreational usage.

4 VEGETATION

The greatest number of trees on the site are evergreen species, but one deciduous group having a big visual impact is the oak group near the Maronan Road main entrance. These oaks act as a strong contrast to the conical forms of the coniferous species, and gaunt forms (when seen against the skyline) of the eucalypts.

There is a good variety of species around the lake environs, including Atlantic and Indian cedars (Cedrus atlantica, and C. deodara); Western red cedars (Thuja plicata); Lawson cypress (Chamaecyparus lawsoniana); and Gums (Eucalyptus sp. probably E. viminalis). The lake edge itself is characterised by Flax bushes (Phormium tenax) and Weeping willows (Salix babylonica), which give it the appearance of being a natural body of water.
Alongside, the hockey field is notable for the Eastern boundary of Irish strawberry trees (*Arbutus unedo*) in front of Pines (*Pinus radiata*), and Douglas firs (*Pseudotsuga menziesii*). Some clumps of Tussock (probably *Carex secta*) occur along the water race, plus a small group of Silver birches (*Betula pendula*) and some Toetoes (*Cortaderia toetoe*) by the swimming pool *Lauristina* hedge (*Viburnum lauristina*).

In the grazing area there is again a group of Oaks (*Quercus robur*), and apart from the belt of Macrocarpa trees (*Cupressus macrocarpa*) dividing it from the golf course, it is the only tree group on this area.

More willows are to be found in the golf course, alongside the water races. Here also, is the greatest mixture of species, including most of those already mentioned plus Wattles (*Acacia* sp.), Wellingtonias (*Sequoiadendron gigantea*) and Cotoneasters (*Cotoneaster* sp.). The most visually dominant trees are fronting the North west plantation, and are the eucalypt species. The white trunks, with some darker patches of stringy bark stand out vividly against the darker greens of pine foliage and the grey/blacks of shadow.

The only native vegetation on the site is the flax bushes, Cabbage trees (*Cordyline australis* - a few near the swimming pool) and toetoes. This is an interesting historical statement, showing that people planted trees at the Domain which would grow well - ie. suited to its environmental conditions, rather than trying to grow unsuitable native vegetation. Possibly a recreation of a familiar landscape may have guided their hand also, and prompted this planting of exotic (to New Zealand) trees.
Planting eucalypts also shows a knowledge of the sometimes difficult environmental conditions existing at Tinwald - these trees are renown for their ability to grow well on dry soils, and to be able to tolerate a wide range of conditions.

5 VISUAL CHARACTER

a) GENERAL

The visual character of the Domain is one of green open spaces enclosed by tall evergreen trees. This is particularly obvious in the Central area to the South west of the lake, which registers as a large peaceful zone bounded by conifers and eucalypts. On a basically flat landscape, these tall trees give the only vertical relief, and produce the scale relationships. This means that they bring a person into a relationship with his surroundings so that he forms an association with them. A balance is generally achieved between excessively large scale effects (which may produce feelings of insecurity or insignificance) and excessively small scale effects (which may produce different feelings of dominance, or inappropriatness). Illustration 10 shows this in graphic form. This central area needs modification of the basic framework to make smaller
THE PRESENT LARGE-SCALE LINEAR PICNIC AREA
Large scale
'insignificance'

Small scale
'dominance'

Medium scale
'balance'

Good scale relationship

Scale relationships
more intimate picnic areas, so that a better scale relationship is formed.

It has been established that the potential of a site can be increased by the way the edges are treated and the space itself is planted. (This also holds for the other parts of the Domain with a similar skeletal framework of evergreen trees). This is shown in illustration 11, adapted from "Designed for Recreation". This illustration points out that the potential of a site, ie. its attractiveness for each particular use, can be changed by the way it is treated in design and layout. The present picnic area is very much type two, with corners, but no intervening "anchorage points" for picnic usage - in fact for any passive recreation forms. The aim should be to type three or even four. A large open space (as now) is fine for very large crowds, because they create their own scale relationship, ie. relate to the large evergreens by sheer numbers, and on an individual scale, to each other. For other users who may come to the Domain however, the size of this area is far too big for them to relate to it successfully. Thus a balance must be created to enable maximum usage to be made of an area - a balance between a large area to relate to large crowds, and smaller more intimate areas to relate to individuals and small groups.

b) **IDENTITY AREAS**

These are areas, or zones, that register as being different to one another, either in visual terms - eg. passing from a deciduous plant zone to an evergreen one, or physical terms eg. passing through a gap in a barrier to the other side where different conditions can exist.
Entrance area taken first 1

Corners taken first 2

Angled sides increase potential 3

Optimal potential 4
Lake area - This is the most important identity area, because it is the centre for passive recreation. The lake acts as a focal point for this area, as it does for the whole Domain, and the island in the centre acts as a "focal point within a focal point". Around this to the South and West is the present picnic area, which is very linear in design, and is a "large scale" area. The tall evergreen trees of the lake, and around the picnic area define its layout in physical terms, and give visual definition of the space enclosed by them. This evergreen skeletal framework needs "rounding out" for better scale relationships as stated before, and also to blend it with other areas so that it doesn't, (as at present), seem to exist as a totally different and separate zone.

When entering from Maronan Road, the visitor passes through the biggest group of deciduous trees on the Domain. These oaks in their dormant state provide a tracery of branches as a foil to the darker, more visually "solid" character of the evergreens. At some stage they have been badly pruned, and so their form is not as attractive as it might be. This may disappear when they are in leaf, but some shaping by a competent horticulturist would add considerably to their impact. As a contrast, deciduous trees add to the visual importance of evergreen species, and this type of modification of the present plantings would therefore achieve the desired purpose of reducing their scale, creating more intimate areas, and emphasising the evergreen framework of the Domain. After passing through these trees however, the visitor is not sure where to go. There is no well defined vehicle circulation pattern or parking area, or pedestrian circulation pattern, and consequently cars are driven over the whole picnic grounds and parked indiscriminantly.
MAJOR DECIDUOUS PLANTING ON THE DOMAIN - MARONAN ROAD MAIN ENTRANCE
around the lake edge. This slight degree of confusion needs to be rectified by indicating a definite area for car parking and car movement and also differentiation between vehicular and pedestrian movement patterns.

The eastern side of the lake is marred somewhat by the concrete water race put in to take lake overflow. This is from the diverted water race at the Northern end of the lake, which is clearing the water.

The two photographs show a comparison of this with a more "natural" water race behind the swimming pool. The concrete trough extends about a third of the way across the open area in front of the swimming pool, and is then piped through to come out in this natural water race.

Apart from the fact that the concrete trough is a physical barrier dividing the open area, it is also alien to the natural atmosphere of the Domain, and brings an element of "hard landscape" into the lake zone, where "soft" natural landscape is the key to its quality and success.

The trees of the lake environs are also significant usually from quite a long distance away. They are seen from most other parts of the Domain, and even from the main south highway (No. 1). They act in zone definition, and as a group reference point, so that orientation is ensured in almost all of the Domain.

The photograph shows the significance of these trees, whereas the next illustrates what can happen with a loss of amenity trees. This loss in area definition and visual enclosure is slight in the example, but compounded to a much larger scale, it could destroy the visual significance of the lake trees if some portion of them were to be removed. Any change in the
'NATURAL' WATER RACE BEHIND SWIMMING POOL COMING FROM...
... THIS OUTLET FOR LAKE OVERFLOW
THE VISUAL SIGNIFICANCE OF THE AMENITY TREES AROUND THE LAKE - ZONE DEFINITION
REMOVAL OF AMENITY TREES, WITH THE RESULTING LOSS OF AREA DEFINITION AND VISUAL ENCLOSURE
density of the larger trees must be very carefully considered before action is taken in the future, to determine exactly each individual tree's contribution to spatial enclosure and visual significance on a local scale, and also from other parts of the Domain on a broader scale.

(ii) **Golf course** - The golf course registers as a distinct zone because of the existence of a physical and visual barrier - the 'disused Mt Somers Railway line and a belt of macrocarpa trees. This is on the South side of the course, and to the West, another visually significant group of trees forms that boundary. This group is mainly eucalyptus and pines, with the former trees in prominence from inside the golf course.

The Northern boundary is defined by a new single row of evergreen species, which also to some extent screens N.Z.E.D. power lines.

The two photographs were taken on the other side of the North boundary to illustrate the point that trees planted too close to power lines are not allowed to interfere with those lines. To this end, the trees along the boundary have been side cut and topped, resulting in the specimen shown. How much better it would have been for the original planters to have left sufficient room for the growth of their trees to a natural form and size. Since the trees have been topped however, their usefulness extends only to shelter and visual containment until newly planted specimens in the golf course can take over their role.

The Eastern boundary is somewhat less easy to define, because it is formed visually by elements not actually on the site. Distant plantations, and other trees on the skyline give the containment, but it is the weakest side in this sense.
PHYSICAL AND VISUAL LINEAR SPATIAL DIVISION BETWEEN THE GOLF COURSE AND THE LAKE AREA
THE NORTH-WEST PLANTATION IS A VISUALLY SIGNIFICANT ELEMENT IN THE GOLF LINK ENCLOSURE PATTERN PRESENT NEAR PLANTING LAYOUT
THE REASON FOR TREE MUTILATION
THE RESULT OF TREE MUTILATION
Facing West, with this weak boundary definition behind, the golf course appears to be separate closed off area - an entity in its own right. This character will change with time however, because of the intensively planted internal area. This large open space, registering at the moment as a complete area, will be subdivided into many small linear strips of open space (defining the fairways) as soon as the trees grow above eye height. Unfortunately this tends to produce a very predictable landscape. It can be countered somewhat by "drifting" the planting in from a strong group so that the resulting fairway pattern seems to emanate from a definite source, rather than just growing out of nowhere. Linking the North-West plantation and the lake environs via the golf course planting pattern will also serve to "anchor" the golf course, and make it appear more as a natural result of landscape changes (from change of use) rather than as a sudden man-made arboreal oasis in a flatland "desert".

This change in the golf course internal open space pattern will mean that the significance of the northern boundary trees will decrease with time. At present they are extremely important not only from a shelter point of view, but also because they delineate the Northern boundary. Without them, the significance of the flat plains landscape would dominate the character of the golf course, and it would seem merely a corner of a much larger landscape, rather than existing as an important zone which is a part of a larger whole.

Within the detail design of the golf links, the Northwest plant group has another important function as a frame for the 3rd tee. This is a very pleasant teeing off position, and the trees provide welcome shade against the hot summer sun.
VISUAL CONTAINMENT OF THE NORTHERN GOLF COURSE BOUNDARY
SCREENING OF THE POWER LINES
THE OTHER VALUE OF THE NORTH WEST PLANTATION - AS A FRAME FOR THE THIRD TEE DRIVING POSITION
A LINEAR ELEMENT DIVIDING THE GOLF COURSE.
VISUAL CONTAINMENT; SCREENING THE POWER LINES
One feature of the golf course that should have been exploited more in its design is the way the two water races have been handled. These both traverse the golf course, and have been treated as a nuisance, rather than as a feature. The straight lines destroy to some extent the natural feeling inherent in a planted area, and the potential for further creating interest by using it as an inspiration for the planting pattern has also been lost.

(iii) **Grazing zone** - This area, from a visual point of view, includes all the present grazed area, plus the rugby fields and vintage car club area. It is the largest open space left on the Southern part of the Domain. Definition to the North and East is by plant groupings, and to the West, the mountains are a significant visual element. The pine hedge of the cycling oval gives visual definition without creating a vertical contrast to the flat landscape in the South, but past this to the Northern boundary of the rugby fields, there is no definition there; the Maronan Road trees act as enclosure elements. A private pine forest opposite the Domain acts as a "boundary" for the South-West corner. More definition is needed however, so that the limits of the Domain can be recognised by the user (even though it is desirable to link the Domain with its surrounding landscape). Planting will achieve this aim - to screen and frame views creating another zone, and secondly to integrate it with the rest of the Domain, with visual and physical plant groups linking up with the golf course and central Domain plantings.

The Macrocarpa trees along the railway line create a very sheltered zone in this area, just behind the lake. Open only to the West, with distant views to the mountains here, it is a quiet sheltered area and although shut off by wire fences from
IMPORTANCE OF THE MOUNTAINS TO THE AREA BEHIND THE LAKE
SHELTERED ZONE BEHIND THE LAKE
the lake area at present will very easily become part of the lake's passive area.

(iv) **Cycling oval** - An 18 foot pine hedge on the West and North sides of the oval, and the tall evergreens of the picnic area give this zone one of the strongest definitions on a small scale. It is largely taken up by the grass cycling track, which in itself is not very visually intrusive, but the concrete and wire fence along three sides is. A fence is necessary to protect the track from over-zealous spectators, but the present one doesn' fit in with its surroundings very well. Trees along the Maronan Road frontage seclude the track somewhat from that Road, and create the Southern boundary.

In the South-west corner of this area is the track of the miniature railway club. It consists of an oval of small metal rails mounted on concrete blocks, and although it could be very intrusive visually, it is only a little because it is quite low. It does to some extent though intrude physically, and tends to give the area more of a bitty appearance than others.

(v) **Childrens play area** - The central pine plantation is very important to the seclusion of this area, acting as a windbreak, and forming a visually defined backdrop to the play equipment. This equipment is of the standard type, and although it gets some use, doesn't have its full potential realised. The nature of the childrens play area is one of open space and natural containment, and these metallic pieces of play equipment seem foreign to the site. Possibly more natural types of play equipment - or at least constructed in natural materials - would get more usage because they "fit" the site better, and become part of it rather than sitting on it. The open atmosphere of the area is marred somewhat by the four grass tennis courts with
STANDARD PLAY EQUIPMENT AND TENNIS COURTS -
VISUAL CONTAINMENT BY THE CENTRAL PINE PLANTATION
their wire surrounds, but at least there is "visual penetration" through to the pine trees. There is a water race on the Eastern side between this and the Railway Preservation Society and hockey grounds, and although a physical barrier, it allows the far Eastern boundary of the Domain to act in visual containment.

Its proximity to the lake means that the lake environs are further enhanced as a hub for passive recreation. At the moment the only access into the playing area is through a gap between a hedge and the North west corner of the swimming pool. This can again lead to some confusion, and should be more easily identified.

(vi) Railway Preservation Society locality- There is visual definition of this area (including the present hockey field) to the West and East and also along the Maronan Road frontage, by trees, but to the North, there is no barrier, and the view extends right across the golf course to its Northern boundary.

There is a large storage shed belonging to the Preservation Society, and its "JA" class locomotive stands beside it, both of which make quite an impact. The train especially makes an impression - to see a steam locomotive sitting on a section of track just on the other side of the lake environs is quite a surprise, and as such creates quite a high degree of interest.

Some subdivision of this space would be an advantage for two reasons - firstly to control the view across the golf course and create a better relationship with this and the closer "view" of objects on the site, and secondly to attempt to retain the inherent interest of a steam locomotive, and yet stop it from being too visually intrusive. The skeletal framework of the Domain is also in evidence mainly along the Eastern boundary
and this again needs softening and enhancing to create a more natural edge, and to increase the integration with the rest of the Domain.

(vii) North-east Domain - The most visually important area here is on the Mayfield-Tinwald Road corner. It is seen into by traffic on this road mainly from the Western side, because here the road curves and slower travel means the travellers have a relatively longer time to view the area. The other three sides are enclosed by tall evergreen trees, and this sheltered aspect makes a strong contrast with the wide-open plains atmosphere the travellers have just left. From the internal users point of view however, this motor traffic creates probably the noisiest part of the whole Domain. It is thus not particularly suited to passive recreation without "noise screening" and an almost total degree of enclosure.

The remaining area of this part of the Domain is quieter however, even if it hasn't the sheltered character of the corner. It is divided into two parts - one bounded by evergreen trees, the other relatively open with gorse hedges as boundary markers or in some cases paling fences where the Domain backs on to private sections. Some trees were causing a shade problem for those houses, but unfortunately instead of selective thinning of those causing the greatest nuisance, the whole row was removed with a resulting loss of visual definition for the central area. It is still well sheltered from the North, West, and South winds, but has been opened up to the Easterly winds. Some trees have been left, but these are insufficient to create an enclosed area which would contrast with the other more open part.

This area is important from the point that it is the closest part of the Domain to a residential area at the moment. The
DESTRUCTION OF ROWS OF NATIVE TREES NORTH-EAST DOMAIN
rest is surrounded by rural land, but here the Domain is bounded by urban land to the South. If Timvald expands to the North, instead of in a "ribbon-development" fashion East and West, then this will form a valuable finger of green open space into the housing area. Its character does need developing though, because it has the least recognizable association with the rest of the Domain, basically because of the lack of an evergreen skeleton defining its area. This visual integration with other Domain zones needs to be implemented now so that if and when housing development takes place, it can register as part of a larger recreation area.

C) THE NORTH WEST PLANTATION

Comment has already been made on the significance of this to the internal space structure of the golf course, but the opposite end also has significance. Until a short while ago this triangular section was planted in a stand of radiata pine. When milling operations were commenced, clear felling was used to get the maximum amount of useable timber from the stand. This has unfortunately also removed an important part of the plantation - that which defined the Western extremity of the Domain.

Also, the exposed side of the remaining stand is subject to increased pressure from strong winds, and windthrow is more likely to occur, particularly on these shallow soils.

Some trees were left, but these are quite close to N.Z.E.D. power lines, and because they have been weakened on the Southerly side are again endangering the lines. It would have been better (and as a guideline for the future) to remove trees close to the power lines, and then plan selected thinning of some trees now (which would strengthen the roots of those to remain), before
LACK OF PLANNING IN SELECTING TREES FOR MILLING WITH THE RESULT THAT THE REST OF THE PLANTATION IS MORE SUBJECT TO WINDTHROW AND
... THE ONLY TREES LEFT STANDING FOR SHELTER OR VISUAL DEFINITION WILL PROBABLY HAVE TO BE REMOVED BECAUSE OF PROXIMITY TO THE LINES
clear felling of some parts of the area at a later date.

Groups of trees could then be left to create the necessary visual definition and shelter desired, and yet still allow a significant number to be milled. Thus, if this area is to be replanted for timber purposes, it would be a good idea to plant groups (to remain) of a deeper rooted species more capable of standing up on the shallow soils, and providing more definite amenity planting in the area.

The remaining trees of the plantation should be protected so that they will not be removed for timber purposes. They are of inestimable value in providing enclosure and shelter for the golf course and grazing area, and their character of providing the link between these two areas (and the lake environs) because of scale relationships should be preserved. Apart from these scale factors, it is also a visually important group of trees, which further increase its value as an amenity resource.
Present Use

CLUBS AND SOCIETIES

a) INTRODUCTION

To gain an idea of the actual needs of each of the many sports bodies using the Domain, a member of each (chairman, secretary, or interested member) was interviewed. Present numbers, interest in the activities of the club, projected increases from this, area needed, and any special needs of access etc. were asked. These questions generally led to a discussion on the Domain which proved very helpful in many cases, in assessing future needs and the general atmospheres and feelings about the Domain and degree of interest on sporting activities.

The impression the Author had from the interviews was of delight at the fact that the Board was going to plan for the future, and all agreed that there was a need for this. Some expressed dissatisfaction with the 'piecemeal' development of the Domain, and felt a need for a more integrated usage of the Domain facilities. The following sections are summarised from these interviews.

b) CYCLING

This club is very vigorous, with about 75 members actively participating. It has the advantage of one of the best quarter-mile grass cycling tracks in New Zealand, which was laid in 1958 as topdressed soil and grass over clay. On an all-day championship meet, there are as many as 500 spectators, which is attributed to good publicity, and the fact that there is not a
lot to do in Timwald generally. Spectators travel from Christchurch and Timaru quite often. The club has its own building, and is reasonably well off, being able to offer $600 in prize money for the next big meet.

Northwesterly winds are the main nuisance factor - as well as drying out the South raised banks, they make riding conditions uncomfortable. Deciduous tree leaves on the track may also cause a problem. The centre of the cycling oval is used on Gala days and picnic days for caber tossing, wood chopping, and sheaf tossing. These activities are acceptable from a maintenance point of view, but more active sports like rugby tend to do too much damage to the track (a rugby field has been in the center, but spectators, and players boots tended to chew up the track). The cycling season is from September through to April. The aim of the club is to eventually seal the track, so that delays from inclement weather will be less frequent. (Times are also faster on a sealed track). On wet days at present road races are held, and these are very popular particularly with the younger riders. The present track is a good one, with a time of 13.9 seconds being recorded for a 220 yard sprint (the world record for an outside track is 10.61 seconds for 220 m (219 yards)). The club has a site well suited to its needs, and able to cater for any future expansion of numbers, or activities.

c) **SWIMMING**

The committees of this sport is one of the ways in assessing numbers - there are 9 on the management body, and 40 on the working committee. It is a fairly active club, and gets most of its big crowds from organised picnics (eg. the last one from the Addington Railway Workshops saw 850 people using the pool).
The pool is of Olympic standard, with a standard depth of 1.1 metres (3'8"). There are Toilet and Shower facilities, with a Supervisor stand. The primary school (500 children) uses the pool, as well as the local adults.

The committee plans to develop the pool by tiling the learners end, and providing picnic tables etc. on the Eastern side. They are aiming at a Lido-type pool complex, ie. pool, learners pool, and associated public usage, with picnic facilities etc. Car parking facilities are needed, to cater for 100 or more cars, particularly on Sundays in hot weather when the pool is open all day. Present parking uses the open area in front of the lake entrance, but this conflicts with picnic users who want the open space, rather than cars. With greater numbers probably using the facilities the demand for parking space will increase, so an appropriate area needs to be provided.

d) **RUGBY**

There are about 180 players involved, from under 9 years to open grade. The 12 teams cover all grades in rugby competitions, compared to the situation 11 years ago, when there was only one team (under 9 years old). Two full sized fields are provided at the Domain - as well as two smaller fields for ten-a-side rugby of the lower grades. The club is very active with much parental support, and practises most nights at the Domain. Most of the fields are at the showgrounds though, and although future expansion of the club seems certain, the Rugby Union takes care of providing any extra fields if necessary. It was not felt that any extra fields were needed in the forseeable future however, because it is only rarely that all teams have a home game.

Car parking is informal around the Southwest and Northwest
of the fields, and even 150 cars are absorbed readily here because of the quite large area available. They are absorbed in the sense of easily fitting onto the site, although the visual impact of the cars surrounding the fields will be considerable. A few cars are generally visually absorbed quite readily by large trees as a back-drop, but a large number tend to be disruptive to any peaceful atmosphere. Rugby, however, is not a peaceful game, and neither is active spectator interest, so these cars are acceptable in this case because they contribute to an atmosphere, rather than degrading it. Since they are present for only short periods of time, the changed atmosphere can be tolerated. This area is in the centre of a presently active recreation zone, and this is another reason for acceptance of an atmosphere not contributing to the restfulness of, for example, a passive recreation area. In other words, in this situation, the presence of cars does not destroy the atmosphere which is in harmony with the activity performed.

e) RAILWAY PRESERVATION SOCIETY

There are 50 members in the club, with interest increasing as the goals of the club come within closer reach. Many old farm-type vehicles and implements have been acquired by the society (as well as two trains) and these will be displayed on open days, picnics etc. Their pride and joy is a 100-year-old "A" class 'Dubs' locomotive, built by Dubs & Co. Glasgow in 1873. It weighs 11 tons, and was sold to the C.F.M. Company in 1900 (one of 14 bought to N.Z.). The other locomotive is a 'JA' class, built in Dunedin in 1952. It weighs 109 tons, and hauled the last steam train South from Christchurch in 1971.

They have the use of the old Mt Somers branch line which runs through the centre of the Domain, and have built a sub-branch line on the eastern end of this, with plans for a station.
and platform on the line. A storage and display shed (230 square metres or 2500 square feet) is planned, associated with an early plains-settlement-type of village. This would probably include a blacksmith's shop, grocer shop etc. based on a Shanty-town concept. Using this format, they feel they can display old implements and articles to the best advantage. When fully operating, rallies and displays of traction engines are planned in the area next to the railway line associated with train rides, and the whole is designed as a public attraction.

It will stimulate interest in the Domain, and probably act as the main attraction if it reaches fruition. The focal point will remain the lake however, but some degree of interplay between these will strengthen both rather than weakening either. After a quiet picnic, people will want to move through to the more bustling and crowded atmosphere of a village, and similarly visitors to the village will welcome a quiet spot to rest and "recharge their batteries" before returning home.

In the very long term, tentative ideas on linking the vintage car club with a loop from the main line have been put forward. The line from the Domain boundary to Frasers Road could be bought and used for this purpose, according to the society members. At the moment, the disused Mt Somers branch line cuts the main part of the Domain in two. The golf club has the northern area and the southern area is where most of the active and passive activities take place. The impact of a railway loop cutting through this land would be very high. By its very nature, all facilities would need to be aligned along the loop producing a very obvious "man-made pattern". This is in conflict with a natural landscape, which is
appreciated more by the passive user for its restfulness, and its obvious lack of connection with urban life. This line circuit also raises the problem of the centre. Circulation patterns over railway lines will probably not work because of the visual and physical barrier presented. Therefore, the centre will not be used for anything other than a visual feature, but it will of necessity be a large area, and this cannot be set aside on a Domain of this size. Problems of use then, maintenance (getting machinery onto the area) and the fact that it would cut the existing Domain area in two all point to the conclusion that this development cannot go ahead at the Domain as envisaged by the Preservation Society.

However, a smaller loop maybe possible. This would be best oriented along the western boundary of the Domain to meet with the vintage car club, where a turn around area could be placed. The train can then return along the same stretch of track back to the platform. Orientation of features will be kept to a minimum in this way, and although functional, its intrusion into the Domain will be at an acceptable level.

f) **MODEL TRAINS**

About 35 members belong to the model train club, but only a few are active. They have two track-days per year, with enthusiasts coming from Christchurch and Timaru. The association of this club with the Railway Society is strengthening all the time (most members belong to the Preservation Society as well) and probably integration will result. The idea of eventually moving this track to the proposed village area has been voiced, and would seem to be a more practicable position. On picnic days, scout rallies etc, model trains are brought out and rides given on the small oval track. This club actually
donated the 'Dubs' locomotive to the Preservation Society.

g) VINTAGE CARS

With 95 members, the vintage car club is fairly active (it grew from 20-95 in the last three years). There were 156 cars on their last event, and with approximately three people per car, plus public, about 500 people attended. The site of 3 acres is used as a starting point for major rallies, and motorcycle gymkhana's. Annual rallies are held, plus days for public inspection, and driving skills examination on test courses. With an estimated doubling of membership in the next five years, more land will be needed, with associated public car parking facilities (at present parking is in front of the club house).

The only problem foreseen with association with the Railway Preservation Society, is the fact that the cars are privately owned, and as such with private insurance policies are not at present available for public rides. If any damage occurs in this situation, owners have no redress to the insurance companies. Naturally, the members are reluctant to provide rides on picnic days etc., but in the future some comprehensive-type insurance cover may be arranged.

h) TENNIS

Four grass courts are available to members of the Tennis club, which has 40-50 regular members. They play in the evenings, weekends, and an occasional ladies afternoon. School children are allowed to use the courts during the week in limited numbers. Maintenance is a problem, with remarking necessary after every two or three cuts of grass, and irrigation needed during summer (which puts the courts out of action for a couple of days). It costs the club about $100 per year for maintenance.
and they feel this would be better spent on providing hard surface asphalt courts, which would give more time for active play, and also allow the school more playing time. It was also felt that with these better facilities, membership and interest would increase quite a lot. Fifteen grass courts are still available at the Ashburton Domain and a further three sealed courts are at the Allenton Sports Centre.

j) **HOCKEY**

The women's teams are the most active here, with 65 primary school players, 15 secondary, and 11 seniors. The secondary school players, and seniors play at the Working men's club, where the men also play. The sport is very active in schools, with numbers increasing mainly in the junior grade. April until August is the main season. Two fields are needed at the Domain (one provided at present) with one for practise and one for competitions. During one week last season, 18 games were played on the same field and this continuous use tends to ruin the playing surface. Summer irrigation would be ideal, to get a good sward to cover for the winter. Hockey and tennis share the same wooden hut as clubrooms, but they would like a bigger building to provide visiting teams with a cup of tea, and changing rooms. Floodlights could also be used for evening practises.

k) **PONY CLUB**

The club uses an area of the Domain opposite the golf course, and it is admirably suited to their needs. There are 30 riders, and parents are very involved also, so at present there are about 70 involved in the club. Within 10 years, 50-60 riders are expected to be active in the club.
Meets are held on the 3rd Sunday of each month with up to 70 ponies attending, and 2-300 are expected for the annual show. One car and one float generally accompanying each pony, and these park around the perimeter of the area, which is very sheltered. These sheltering trees are also providing the setting for a permanent cross country track to add more interest for the younger riders.

1) **SCOUTS**

Included in this category also are guides, cubs, and brownies, and there are about 110 people involved. They have a den on Lagmhor Road, which was built by volunteer labour in 1971, and it is used every night except Friday. The main outdoor activities are camping (it has been felt in recent years that with the general increase in violence it is too dangerous for particularly young campers to camp in small groups away from adult supervision) and more land is desired for this purpose close to the Den. There are relatively constant numbers participating in scouting activities and an area of land adjacent to the pony club (for use by both clubs) was felt to be most suitable for their activities.

m) **GOLF**

The golf club, which was formed in 1967 has about 500 members, all of whom are very active in the sport. The course is 18 holes, with a par 72 (for males: 74 for females) and is on 39.25 hectares (97 acres) of the Domain. The links have their own club house, and implement sheds house the equipment, all of which is owned by the club. It is used most days, but tends to suffer in the summer from drought. The club is investigating the possibility of sinking a well for irrigation purposes, because with greens, fairways, and 1500 trees planted, it
consumes quite a volume of water. At the moment, the course registers as a pleasant open space, but in about 10 years, when the trees have grown to more than eye height, this character will be lost, and the links will be seen as a series of vistas - tree lined green avenues directing play. Thus the significance of this as an open space will be lost, but the resulting smaller spatial sub-division will create a more intimate atmosphere. Each fairway will tend to be viewed as a separate part, rather than as present, with the whole course registering as one area. The significance of the older trees on the Northwest boundary will therefore decrease also, except for the fairway running parallel to this boundary, and by this time, the double row of newly planted pines will give the required degree of visual enclosure. The course will develop and mature, and change as it does, but will be a pleasant place in which to play during most of the changes. For the future, the committee would eventually like to see two 18 hole links, but the price of farmland around the Domain makes this a very long term project. There is no question of using Domain land for this proposed extension, because there is not a sufficiently large area to begin with, and also because of the fact that it ties up public land into one use, and this cannot be allowed when the demand for multiple use of land is increasing all the time. The land already belonging to the Domain in the Northeast corner should be kept for other active or passive recreation usages.

2 OTHER FACILITIES

a) TINWALD WORKING MENS CLUB

This club is quite a progressive one, with emphasis on providing facilities for all members of a family. The club has
two hockey fields, and has a lease on 10 acres next to the club where they plan to put two soccer fields, and two netball courts. They are planning to cater for about 250 children at the moment, presumably children of the members, and this number will increase with membership. They have an option on a further eight acre block also, and with increased demand, will put in perhaps some rugby fields, and general sporting facilities. There are some indoor sports catered for - eg. table tennis, bowls, and darts, and cricket enthusiasts can use the hockey fields in summer. A golf driving range is planned, with a mini golf course and outdoor bowls, and although use may be limited by membership to the club, it is still a sizeable facility in close proximity to the Domain.

b) ASHBURTON DOMAIN

This domain has two parts: - the first is an area for passive recreation, with trees, shrubs and pleasant walks while the second part is for active recreation, mainly sports fields, but also including a childrens play area. There is one soccer field, and 10 hockey fields. This would suggest that the demand for soccer is not very great in Tinwald or Ashburton, compared with hockey. It could be that the demand is present but facilities are not available, but in this case the Ashburton Domain could surely give up one or two hockey fields. Since therefore this ratio is existing it would seem to be indicative of the demand. Fifteen lawn tennis courts are provided, plus a cricket oval, and six hard surface basketball courts also.

c) ASHBURTON SHOWGROUNDS

There are eight rugby fields here, plus the Ashburton Scout den and associated area. In keeping with the showgrounds atmosphere there are showrings, judging areas etc., and stockyards to hold animals prior to exhibition.
d) **ALLENTON SPORTS CENTRE**

This is quite an old club, (established 1926) and has nine tennis courts, six grass and three hard-surface. There are two bowling greens, and three croquet lawns. In the old Pavilion, with changing rooms and a kitchen, there is room for indoor bowls, and a new Pavilion is being built near the tennis courts.

e) **SCATTERED FACILITIES**

There are swimming baths at Allenton, Hampstead, and the Borough school, as well as those at the Tinwald Domain. The intermediate school has an area with six hard surface tennis courts, and there are approximately six rugby grounds belonging to the various clubs scattered over the borough.

In part seven of Chapter V (Recreation Trends) this preceding information has been used in a comparison with figures from the Wellington Regional Planning Authority, and shows that the Tinwald and Ashburton districts have good facilities in general (active pursuits) compared with these tentative standards.

Passive recreation facilities are however limited to the two Domains (Ashburton and Tinwald) and although no figures are available on proportional population usage, it seems that even though they are sufficient now, any future increases (in population, or from preference changes) must be balanced by an increase in passive recreation areas. The Ashburton Domain is "complete" now, whereas Tinwald has quite a large area in which to expand, and so this must take most of the projected increases in the future.
Recreation Trends V
Recreation Trends

INTRODUCTION

In a brief survey of literature concerned with recreation trends, it was noted that most of the overseas studies were up to 10 years out of date (e.g. - the O.R.R.R.C. report was tabled in 1962). The New Zealand examples were done in 1969 and 1973 and were felt to bear more weight to this particular case because of their origin and quite recent production, although N.Z. trends are 8-15 years behind those overseas. Since the studies suggest a rapidly changing state of recreational activities, and levels of activity, the overseas ones were felt to bear little useful knowledge to this section of the research study. However, to gain at least a minor insight into recreation trends, some findings have been recorded. Again, the two New Zealand studies are in question, when the relevance of a North Island City of 55,000, and a South Island City of 260,000 to a South Island Plains Settlement of 2144 is considered.

However, these findings have been recorded for their New Zealand bias to give an idea of the activities and preferences of New Zealanders.

A coupled ranking of four studies has been done to arrive at an "average" list of recreational preferences, together with sections on other influences, facility distribution, and planning.
This was undertaken by Ann Neighbour to provide data on the current rate of actual demand for outdoor recreational resources by a sample of Christchurch adults. Three broad categories of activities were used: urban based (taking place within the urban areas usually organised by clubs); rural passive (outside the urban area, natural environment as an important attraction, and little expenditure of energy, time, or money); and rural active (involving money for equipment, energetic compared to rural passive, and needing skills generally for enjoyment). The figures for the percentage of respondents who participated in these categories with respect to the times they could participate is interesting - Rural passive - 40%; urban based - 15%; and rural active - 4.5%. Also, participants from all social groups were involved in rural passive recreation, which means that this is a general phenomenon, and has the broadest base of appeal of the population as a whole. Freedom involving the use of the motor vehicle has resulted in this tremendous surge in rural passive recreation. Distances and destinations were relatively specific - 50 miles was the medium journey, which brings Christchurch and Timaru within the range of the Tinwald Domain. 61% of the car users (for a recreation medium) were looking for the countryside, and although most of these had a water-based requirement some were looking for the countryside of the plains (21%).

The sample population was asked to state the frequency with which they had undertaken the different recreational activities over the previous 12 months. These were tabulated in order of popularity, and on page 39 of Neighbour's study a comparison of her results with those obtained under her direction in Auckland,
and two British and an American study is made. The results for Christchurch are set out in order of popularity, with percentage of sample population participating in each:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
<th>Location</th>
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<tbody>
<tr>
<td>Picnics</td>
<td>88</td>
<td>(RP)</td>
</tr>
<tr>
<td>Driving for pleasure</td>
<td>83</td>
<td>(RP)</td>
</tr>
<tr>
<td>Visiting the beach</td>
<td>77</td>
<td>(RP)</td>
</tr>
<tr>
<td>Organised sport, spectator</td>
<td>59</td>
<td>(UB)</td>
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<tr>
<td>Walking for pleasure</td>
<td>57</td>
<td>(RP)</td>
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<tr>
<td>Sea/river swimming</td>
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<td>(RA)</td>
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<td>Stay at beach</td>
<td>50</td>
<td>(RP)</td>
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<tr>
<td>Pool swimming</td>
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<td>(UB)</td>
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<td>(UB)</td>
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<td>Horse and dog racing spectator</td>
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<td>Pleasure boating</td>
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</tr>
<tr>
<td>Motor racing spectator</td>
<td>24</td>
<td>(UB)</td>
</tr>
<tr>
<td>Sea fishing</td>
<td>20</td>
<td>(RA)</td>
</tr>
<tr>
<td>Golf</td>
<td>20</td>
<td>(UB)</td>
</tr>
<tr>
<td>Freshwater fishing</td>
<td>17</td>
<td>(RA)</td>
</tr>
<tr>
<td>Car rallies</td>
<td>13</td>
<td>(RA)</td>
</tr>
<tr>
<td>Power boating</td>
<td>12</td>
<td>(RA)</td>
</tr>
<tr>
<td>Tramping</td>
<td>9</td>
<td>(RA)</td>
</tr>
<tr>
<td>Caravan camping</td>
<td>9</td>
<td>(RA)</td>
</tr>
<tr>
<td>Tent camping</td>
<td>9</td>
<td>(RA)</td>
</tr>
<tr>
<td>Hunting</td>
<td>8</td>
<td>(RA)</td>
</tr>
<tr>
<td>Skiing</td>
<td>7</td>
<td>(RA)</td>
</tr>
<tr>
<td>Tobogganaging</td>
<td>6</td>
<td>(RA)</td>
</tr>
<tr>
<td>Nature studies</td>
<td>6</td>
<td>(RA)</td>
</tr>
<tr>
<td>Hostel camping</td>
<td>6</td>
<td>(RA)</td>
</tr>
<tr>
<td>Water skiing</td>
<td>5</td>
<td>(RA)</td>
</tr>
<tr>
<td>Ice skating</td>
<td>5</td>
<td>(RA)</td>
</tr>
<tr>
<td>Sailing</td>
<td>5</td>
<td>(RA)</td>
</tr>
<tr>
<td>Surfing</td>
<td>5</td>
<td>(RA)</td>
</tr>
<tr>
<td>Canoeing</td>
<td>3</td>
<td>(RA)</td>
</tr>
<tr>
<td>Horse riding</td>
<td>3</td>
<td>(RA)</td>
</tr>
<tr>
<td>Scrambling</td>
<td>3</td>
<td>(RA)</td>
</tr>
</tbody>
</table>

RP = rural passive; RA = rural active; UB = urban based
Five out of the first seven activities were those classified as rural passive, whereas the lower half (12% or less) were all rural active. The five rural passive activities were 50% participation or greater, so the demand for this type of activity has been well shown, and the lower overall participation rate for rural active pursuits indicates their restricted appeal.

This means then that the greatest demand is for passive activities, mainly involving little effort, in a "natural" setting. Since this demand is from an urban-based population, these will be the people most likely to benefit from the development of the Domain as a passive recreation area. However, since this population is at the median journey distance, there will not be large numbers travelling solely for that purpose, so the facilities will also be catering for people stopping for a short while from a larger journey, or people from the Tinwald District wishing to use them.

One of the main problems in assessing recreation trends is to establish a value of, and for, passive recreation. It is generally agreed that there is a very real need for this, and yet figures on types, frequency etc. are hard to compute. Just how one assesses the need and value of a series of small areas for picnicking as opposed to an extra sports field is this real problem. Neighbours report goes some way towards this with its rural passive category (40% participation factor), including driving for pleasure, picnics, walking, visiting the beach and staying at a bach. It shows that these activities are important, an actual need exists, and puts a value on passive recreation above that of active recreation.
The first study by Peter Crawford was involved with recreational preferences of a selected sample population in Palmerston North, in an attempt to assess the preferences of the adult population of the city. A questionnaire containing 27 sport and leisure time activities was drawn up, and the results of ranking these activities were analysed in terms of general preference, age, sex, and preference of types of leisure activities.

They were ranked from most preferred to least preferred, and then grouped into 5 classes by a statistical simple difference test.

Class A  1 Driving (pleasure/racing)
          2 Music (all types)
          3 Swimming and surfing (organised and casual)
          4 Watching T.V.
          5 Rugby Union

Class B  6 Fishing (sea/river)
          7 Boating
          8 Movie Theatre
          9 Tramping/hunting/skiing
         10 Walking
         11 Tennis (organised and casual)

Class C  12 Golf
         13 Gardening
         14 Cricket
         15 Theatre (open/plate)
         16 Athletics and cycling
         17 Dancing (classical/modern)

Class D  18 Soccer
         19 Basketball (indoor and outdoor)
         20 Squash/badminton
         21 Hockey
         22 Bowls
         23 Horse racing/trotting
         24 Horse Riding
         25 Baseball/softball
         26 Rugby league

Class E  27 Boxing
Class A - most attractive  (clear decision)
Class B - attractive
Class C - average appeal  (undecided)
Class D - little appeal
Class E - least attractive  (clear decision)

In general it was found that people had clear decisions for half a dozen activities which they preferred, and about the same number for those which they did not like. The middle rankings were not as clear as they might have been, probably because there were so many activities to rank, and respondents were getting tired of making so many choices. 15% of the sample took an active part in none of the 27 activities listed. 31% belonged to no organisation, and a further 31% belonged to just one.

In a general summary of this report, Crawford states

"Demand for different types of leisure time activities and recreation needs is forever changing. A sample survey which is the basis of this study concluded that driving, music, swimming and surfing, watching T.V. and rugby union were the five most popular activities in Palmerston North City. Women it appears prefer music and swimming ahead of the male preference for driving and rugby union. On the other hand, the younger generation (under 35 years) prefer recreation activities that do not involve team activities or some degree of organisation. Those people over 35 years of age seem to prefer activities involving team sports".

Three other studies are mentioned in this report - Turbott's study "Landscape and open space for Totara Park Development"; The Waitemata County Council "Orewa Beach" study, and the American "Outdoor Recreation Resources Review Commission". The first two studies (also N.Z.) had ranked preferences also.
Turbott used the O.R.R.R.C. ranking (in the next section), but the Orewa Beach study was a new attempt at a recreational preference scale.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swimming</td>
<td>26%</td>
</tr>
<tr>
<td>Fishing from boats</td>
<td>16</td>
</tr>
<tr>
<td>Gardening</td>
<td>7</td>
</tr>
<tr>
<td>Picnicking</td>
<td>6</td>
</tr>
<tr>
<td>Walking</td>
<td>6</td>
</tr>
<tr>
<td>Driving</td>
<td>6</td>
</tr>
<tr>
<td>Sailing</td>
<td>5</td>
</tr>
<tr>
<td>Pool swimming</td>
<td>5</td>
</tr>
<tr>
<td>Golf</td>
<td>4</td>
</tr>
<tr>
<td>Fishing from shore</td>
<td>4</td>
</tr>
<tr>
<td>Water skiing</td>
<td>3</td>
</tr>
<tr>
<td>Movies</td>
<td>3</td>
</tr>
<tr>
<td>Tennis</td>
<td>3</td>
</tr>
<tr>
<td>Dancing</td>
<td>3</td>
</tr>
<tr>
<td>Amusement Parks</td>
<td>1</td>
</tr>
<tr>
<td>Organised sport</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1</td>
</tr>
</tbody>
</table>

100%

The second Palmerston North study used the family, rather than the individual, as the sampling unit. In this report, 30% of people contacted (over 5 years of age) had no forms of recreation, where recreation is considered as activities that take place outside of the family home, and generally involving contact with other members of the community. Crawford states:

"The implications of this low degree of total involvement ......if present trends continue (is that a) greater emphasis in planning for future forms of recreation must be placed on passive recreation areas".

The top 10 activities were ranked in order of popularity, including those under 5 years of age:
This was a 3 year study called for by the U.S. senate, with its object - "To estimate the type of recreational demand from 1966 to 1976 to 2000". The basic conclusions of this massive work for the United States were:

a) In 10 years (1976) there will be a 56% increase in demand for outdoor recreation
b) There will be a 300% increase by 2000
c) The increase in demand will vary with the type of activity - eg. spectator involvement as opposed to active participation.

The main factors they thought contributed to this increased demand were:

a) Increased leisure time
b) Increased disposable income
c) Higher education levels
d) Changes in occupation structure
e) Increase in the proportion of the population in the suburbs
f) Increased opportunity to participate in a variety of activities.
Some findings of the report:

a) Simple activities, like driving, and walking, swimming and picnicing were the most popular, with driving for pleasure heading the list generally true regardless of income, education, age, and occupation.

b) People in metropolitan/urban areas have the greatest need for outdoor recreation, yet these centers have the fewest facilities per capita, and sharpest competition for land use.

c) Much of the land now available for outdoor recreation doesn't effectively meet the need - eg. location reduces its effectiveness, because most of the land is where people are not. The problem is not of total acres, but effective acres.

d) Outdoor recreation is often compatible with other resource uses - ie. multiple use of land - and water is a focal point of this outdoor recreation.

More detailed recommendations were tabulated, strictly relating to the U.S. scene, but also an order of popularity was recorded:

1. Driving for pleasure
2. Walking
3. Playing team games
4. Swimming
5. Sight seeing
6. Bicycling
7. Fishing
8. Attending sports events
9. Picnicing
10. Nature walks
11. Boating
12. Hunting
13. Horse riding
14. Camping
15 Miscellaneous
16 Ice skating
17 Sledding
18 Tramping
19 Water skiing
20 Outdoor-concerts etc.
21 Canoeing
22 Sailing
23 Mountain climbing
24 Snow skiing

Each of these activities has had projection trends applied so that projected participation in 1976 and 2000 are known. As a general statement, outdoor recreation activity will triple by 2000. (Details of projected percentage increases are found in Table 23, page 220 of 25).

5 COUPLED RANKING

An aggregate of the four studies based on an individual's preferences (Crawford's report is a family ranking) was undertaken to get a ranking produced on an average basis. It is not statistically viable, but gives an idea of trends based on a wider scale than each individual study. The activities mentioned once were not included because they would give a bias towards one report only, and an average ranking was the aim. The top activity of each preference list was given 23 points, the second 22 and so on with the lowest receiving 1 (using all the activities featuring two or more times). Each study was given equal weight for simplicity. The result is given below, with averaged values showing the range between 21.5 and 5.3 (maximum possible range was 23.0 to 1.0)
There were no distinct groups to emerge from this, although perhaps the first six (Driving for pleasure to Fishing) could be classed as most attractive; the middle six (Gardening to boating) as having average appeal; and the final seven as least attractive. There are only 19 in the list because some had the same value as others, and still others were amalgamated.

As stated before, the applicability of this ranking to Tinwald Domain is not really viable, but it is interesting to note that four activities in the first group are available at the Domain, as are four in the "average popularity" group, whereas only one in the last group is provided. This means then that facilities provided are on the right track, i.e. go same way towards meeting these preferences (in type, but not quantity.) The relative balance needs to be adjusted so that the more popular activities present a proportionally greater opportunity for
use than the less popular ones. The first group are primarily passive pursuits, which means therefore that more opportunity should be provided for this type of activity.

6 OTHER INFLUENCES

a) POPULATION TRENDS

In the open space survey report\textsuperscript{26}, quotes from\textsuperscript{27} show that other factors may influence recreation demand. In assessing future demand, they felt that the factors of age, and class were the major influences on sport participation. Simple activities however, made no such distinction between these factors.\textsuperscript{25} In\textsuperscript{23} Also, \textsuperscript{27} in\textsuperscript{26} says that demographic changes (ie. community statistical changes) should be a step in the preparation of recreation forecasts, because these characters can be projected more reliably than such variables as income, free time available, or preferences for leisure time use.

However, to make use of these demographic changes, some sort of relationship must be known between community (population) makeup, and recreation needs and preferences. This is an ever-continuing process however, and even the wisdom in trying to pin down something as transient as population preferences is to be questioned. Most researchers\textsuperscript{23,27} seem to feel that continual checks and samplings of populations is the only way of keeping pace with these changing characteristics. Even then, there are so many variables - even weather may have a drastic effect on recreational activity type.

b) MULTIPLE USE

The only possible action for administrators, and those concerned with trend projection is therefore to guess-estimate, using all information available. As a corollary of this,
recreational land must therefore either cater for a particular activity (or group of activities) and possess sufficient adaptability to change should the demand arise, or have multiple use characteristics, enabling a fluctuating choice of recreational activities to take place within a broad band.

The significance of this for Timwald is probably not great at the moment, but since future demand must be catered for, it must be taken into consideration when planning for any land use on the Domain. As well as this future demand, changes may occur now in the preferences of the population using the Domain's facilities, in which case, the multiple-use approach would seem best. The advantage is that present activities can go on, but be able to change and still have facilities at the Domain. This applies mainly to passive recreation, but can also fit the changing pattern of active recreation. For example, as a National trend, soccer is on the rise as an active sport, yet there seems to be little demand for it at Timwald or Ashburton at the moment. If this increase is seen at Timwald, then facilities should be available, or easily made available for it, which is one of the functions of the multiple use idea. Also it means that areas used for active recreation can also be used in a passive way - eg. as part of a controlled view (or vista), the peripheral areas particularly for walking around, sitting under etc., and the open spaces (the actual fields) functioning as just that - open spaces between varying degrees of enclose to give visual interest, and emphasise the Domain's character.

c) AGE STRUCTURE

"The relationship between age, and participation in outdoor activities is a sharp and striking one - of all the factors analysed, age had by far the strongest relation to outdoor recreation".
This relationship was felt to be a progressive one, with each age group participating less than the next younger age group.

The effect of this finding means that the age structure of the population is an important fact in assessing future trends. Tinwalds' population is tending towards younger people because of cheaper land compared to Ashburton, and the fact that young married couples are tending to move here. Thus, the Domain and other facilities will probably have to cope with a slightly greater proportion of people-days of recreation than say an older community, or sector of the community. Again, Tinwald is not a large urban settlement, and the pressures of city life are not so strong here; the need is still felt for "escape" into the country, but the country is so close that this recreation need is probably fulfilled to some extent just by driving to work, passing through these areas of open space, and "green relief".

d) MARITAL STATUS

It was found that outdoor recreation as a whole was not affected by marital status and having children. However, the trend towards earlier parenthood could mean a growth of such activities where young children and wives can accompany the husband. This includes pursuits such as camping, swimming, motor boating, or where special provision can be made for the family while the male takes part.

Included here also are family-type activities like picnicking, walking, caravaning, and even horse riding and tennis, all of which are available at the Domain.

e) INCOME

Again, the O.R.R.R.C. report is used. Outdoor recreation participation rises with income, but what is not clear is how this
relationship reflects the change. It may be the influence of money as such, or attributable to social class characteristics of education and occupation, which are closely related to income. Nevertheless, after allowance is made for the influence of other characteristics, participation still rises with income.

As can be expected, the association is most marked in the demand for minority sports such as tennis, badminton, golf and squash. These are activities where the cost of equipment and facilities for the individual is quite substantial.

7 FACILITY DISTRIBUTION

The Wellington Regional Planning Authority in 1965 published a bulletin dealing with a sub-committee report on recreation. In this, a table of unit facilities for Adult Active Outdoor Recreation has been worked out, with standards of population per unit facility. These figures can only be taken as a guide because they do not take into consideration age structure, varying demands of different densities of population etc. "It is suggested that......a more penetrating technique in assessing the outdoor recreation needs is required." Using the population figures (from Appendix II) a comparison was made with the W.R.P.A. figures and Ashburton Borough facilities (population per unit facility basis):
<table>
<thead>
<tr>
<th>Type of Facility</th>
<th>Population per unit facility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W.R.P.A.</td>
</tr>
<tr>
<td>Rugby fields</td>
<td>2080</td>
</tr>
<tr>
<td>Rugby league fields</td>
<td>14300</td>
</tr>
<tr>
<td>Soccer fields</td>
<td>4550</td>
</tr>
<tr>
<td>Hockey fields</td>
<td>3850</td>
</tr>
<tr>
<td>Basketball courts</td>
<td>4170</td>
</tr>
<tr>
<td>Athletic fields</td>
<td>66600</td>
</tr>
<tr>
<td>Softball diamonds</td>
<td>3850</td>
</tr>
<tr>
<td>Cricket wickets</td>
<td>1140</td>
</tr>
<tr>
<td>Croquet lawns</td>
<td>3850</td>
</tr>
<tr>
<td>Bowling greens</td>
<td>3190</td>
</tr>
<tr>
<td>Archery grounds</td>
<td>50000</td>
</tr>
<tr>
<td>Tennis courts</td>
<td>300</td>
</tr>
<tr>
<td>Golf links</td>
<td>22700</td>
</tr>
<tr>
<td>Horse riding areas</td>
<td>-</td>
</tr>
<tr>
<td>Cycle tracks</td>
<td>-</td>
</tr>
</tbody>
</table>

These figures for Ashburton borough (since it is a small urban settlement, Timvald is included in these totals) do not include schools, or those facilities planned for some time in the future (e.g. Timvald Working Mens Club). Cricket and soccer are the most notable departures from the W.R.P.A. recommendations at Ashburton. Soccer has been discussed before, where the prevalence of hockey over this sport has been noted. One hypothesis for this difference is that it is a reflection of the soils of the region - shallow dry soils producing a hard dry surface, which is ideal for fast hockey play, but not so suitable for soccer.

Most of the facilities gives quite a wide coverage over the borough area, which means that people do not have to travel great distances to get to any one particular activity. This
gives a greater opportunity to participate actively or passively in these activities, and ensures relatively high constant rates of usage.

Cricket may not be such a popular summer sport because of the active interest in cycling. Apart from these two, the rest of the activities seem to be fairly well on a par with the W.R.P.A. figures. Unfortunately, no data on passive recreation has been given. It could be reasoned that since the active pursuits seem to be fairly well in line with the guide, attention can now be turned to passive recreation, and provision of these areas to meet a steadily increasing demand.

8 PLANNING

There are three main functions of recreation. These are:

1) Rest
2) Diversion and entertainment and
3) Personal development

Each of these functions must be considered when planning for recreation.

In the case of this Domain, at present there is little opportunity for actual rest, although there is a restful atmosphere. The atmosphere is harder to produce than opportunity for rest, so the important part of the first function is present. The major form of producing areas for rest within the existing framework is to reduce this in scale to give more intimate areas. Provision of physical objects - eg. tables, seats, within these intimate areas will enable the restful setting of the central Domain area to achieve its purpose of "recharging peoples batteries", ie. release stress, and provide relaxing facilities.

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Diversion and entertainment are primarily individual functions. Facilities can be provided - eg. the childrens play area, but it is the use of these facilities by individuals to gain diversion and entertainment that is important. Therefore, one of the more important aspects of planning in this sense is to make the use of facilities desirable. Participants, and spectators both gain benefit from utilisation of most facilities, eg. tennis, swimming, childrens play, and the importance of involvement, either actual or peripheral, means that workable designs are very necessary.

Personal development is again an individual function, and can be subdivided into 2 parts - the physical sense, and the mental sense. In the physical sense, development occurs through the use of facilities - active sports, organised recreation in general, and active recreation facilities (these may include semi-passive activities like walking, or even boating). Mental development takes place from involvement, and also observation, of the above categories. Peaceful surroundings, with an accent on periods of solitude and meditation, are very important, and again planning for this must be done carefully to allow the fullest possible stimulation and reflection of the mind. This subject is very complex: the importance of each of these factors must be related and organised within a unified, yet not monotonous, whole. This means that each factor has to be considered in relation to the others when planning for recreation.

DISCUSSION

The trends of recreation preferences show that passive activities are preferred over the more active ones. In the coupled ranking, the first "active" pursuit is organised sport,
which ranks 8th out of 19. The least popular activities seem to be those involving some degree of physical exertion, or expense in terms of money and equipment - eg. hunting, and water skiing. Since this demand is ever changing, the individual activities can only be taken as a guide.

The trend does seem, however, to be that people prefer pursuits they can carry out any time, rather than those requiring specified actions at specified times. This is probably a reflection of the growing freedoms within our society, and as such, needs a degree of control so that this freedom is channelled and guided into viable forms of recreation. In other words, opportunity must be available for passive recreation in forms that allow a choice within a broad category of activities. A good example already existing at the Domain is the lake, which allows quiet reflection and meditation from the stillness of the water, a pleasant focal point for walks through the trees, and a visual attraction in the tall surrounding trees for picnic parties.

This is the type of provision Board policy should be oriented to now. Present usage of the Domain is confined mainly to active recreation in terms of area and opportunity, and one of the major reasons for this has been the Board's policies in the past. Land leases have been granted to sporting bodies, providing active recreation facilities, but a sympathetic increase in provision of passive use areas has been neglected. The main passive-use area at the moment is the lake and its immediate environs, and this was designed in 1881! The foresight in providing this original area must be doubly commended, for it has managed to cope reasonably well with demand up to the present day.

Certain organised activities like group picnics have tended
to stretch the resources, and these are likely to increase in numbers in the future. The area is very attractive, and the W.R.P.A. report states that the amount of use that is made of an area is very much the result of its location in relation to population, and its intrinsic attractiveness. In addition, most people are prepared to travel considerable distances to areas of natural scenic beauty. Certain recreation areas therefore actually generate public usage.

Thus, with increased facilities in terms of trends of preferences, more use will probably be made of the Domain - facilities generating interest. The time has come for the present passive/active imbalance to be rectified, with increased passive recreation facilities to keep pace with demand. Tinwald Domain can cope with this demand if action is taken now. Even if the demand doesn't reach significant proportions for 10 or 20 years, the facilities will be there, in a reasonably mature form (in terms of tree groupings) to absorb the extra usage. (Discussion on the proposed caravan park is to be found in the section on caravans).

10 SUMMARY

Of the 19 activities listed in the coupled ranking, Tinwald Domain has opportunity for 10. The four most popular pursuits are available - driving for pleasure, swimming, picnicking, and walking. Driving as a form of recreation is hard to define, but as improved facilities for other activities could generate usage, the factor of movement to and from the Domain is a viable recreational activity. As mobility increases, greater distances will be travelled, and the very act of getting to a park will satisfy at least part of the recreational demand.
The other seven offered are spread throughout the rest of the list, and are spectating, organised sport, golf, cycling, tennis, boating, and horse riding. As well, the Domain has a vintage car club, and railway preservation society, with a Scout den opposite Anne St., which are involved as more of a minority use.

From information gathered on the membership and interest etc. in all the various clubs and societies, it seems that for most of them activity is increasing, and their projected numbers are generally increased by a substantial percentage. Whether this is indicative of a keen sporting attitude for those activities provided, or whether it is just that these are the only activities to choose from to account for this interest is debatable. If opportunity for more passive recreation were present, the chances are that the Timvald population itself wouldn't make extensive use of them. Probably this would cater for those from out of town, who had travelled some distance to find a pleasant spot to passively recreate in. As an almost rural community (in its setting and size) there is a general kinship with the outdoors, and exercise in sporting activities. The need for release from urban life is quite low therefore, in this type of community surrounded by farmland only 2 or 3 minutes walk away. Thus the provision of areas for active recreation will still have a higher priority than the passive area, but this gap, in terms of general future trends, will be closing, and since there has been little passive provision for a long time, it can now be started to provide for this future demand.

Peter Crawford, in the first part of his summary says that there has been through the progression of time, a continual change in the demand for sport and recreation activities. Much
of this change has been associated with the steadily increasing affluence of all members of our society. Because of this, and a multitude of other factors, there has been a continual refinement of leisure taste and recreation preference to cater not only for the whole of society, but also for group preferences within our society. He goes on to say that the results of this (his) study shows that the increasing use of the motor vehicle is reflected in most preferences. The leisure-seeking public will want to go mainly to rivers and beaches, because all ages are catered for here. Recreation activities requiring some degree of organisation will cater for the popular demand of many, but it is likely that this demand will not be from active players or even spectators. This demand will in future be catered for through the various news media. It would also appear from the study (his) that the younger section of the population have, with some exceptions, activities other than team sports as their main preference.

In Tinwald however, it seems that the "real thing" is preferred to media reporting of a sporting event. Cycling in particular draws large crowds, and as a general trend, this aspect of Crawford's report will not apply to Tinwald for a considerable time.

CONCLUSION

Some findings of overseas and New Zealand have been tabulated and discussed. The relevance of much of this information to Tinwald is probably not great at the moment, but as a forward projection, will apply at some future time. Some preferences for recreation in Tinwald have proved to be largely active at the present time, with the probability of demand for passive
recreation arising in the future. Passive use will at present cater for "outsider's", but with increased facilities, will be able to cope with internal, as well as external increased uses. Again, Crawford makes a statement that is applicable to Tinwald.

"At the same time however, there will be a constant need to re-evaluate the demand for sport, recreation, and leisure time activities. Recreation and leisure tastes are never static - they evolve, developing, maturing, expanding and declining like the people for whom these activities form an important part of their lives".
SUITABLE EVERGREEN TREES

The present character of the Domain around the lake area is one of green open spaces surrounded by tall evergreen trees. This quality should be preserved and augmented to maintain and develop the Domain so that it has its own particular charm and distinctiveness. Suitable species were found from a Forest Service Bulletin, and the N.Z. Forest Service in Christchurch. The Forest Service have no major plantations in the Ashburton district, but from experience in similar areas, they suggest Pinus radiata as the only species (for fast growth) suitable for timber production. However, since amenity and shelter planting to produce a framework containing the open spaces of the Domain is the aim, species suitable to the relatively dry conditions and shallow soils of the Domain were selected. (The following are all evergreen species).

Abies pinicapa
Acacia sp.
Cedrus atlantica
Cedrus deodora
Cupressus arizurica
Cupressus torulosa
Eucalyptus fastigata
Eucalyptus gunii
Eucalyptus obliqua
Eucalyptus regnans
Picea sp.
Pinus nigra
Pinus ponderosa
Pinus radiata
Pseudotsuga menziesii

Spanish fir
Wattles
Atlantic cedar
Inidan cedar
Arizona cypress
Bhutan cypress
Brown barrel
Cider gum
Mess-mate stringybark
Mountain ash
Spruces
Black pine
Ponderosa pine
Monterey pine
Douglas fir
Appendix II

ASHBURTON POPULATION TRENDS:

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
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<td>1951</td>
<td>9156</td>
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<td>14004</td>
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<td>14964</td>
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<td>1986</td>
<td>15904</td>
</tr>
<tr>
<td>1991</td>
<td>16560</td>
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</table>

These figures are based on a higher migration rate than usual, probably attributable to the loss of school leavers because of lack of opportunity in the district.

TINWALD POPULATION

This is based on 3.201 people per household (from the 1971 census). At the end of 1972, the population was approximately 2140. Projected from this, at the same relative percentage to the borough, it should increase by approximately 500 to 2650 by 1991. This doesn't take into account however the general trend towards increasing urbanisation of the population, nor other local factors likely to influence the final figure.
References & Bibliography
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<td>12</td>
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Tinwald Domain's artificial lake was excavated in 1888, and the now fine specimens of trees were planted in the same year. As a centre point and focal point for the Domain, the lake has retained its status for 85 years. The lake has increased its attractiveness year by year until now the tall trees give it a wonderful sense of enclosure and intimacy, and the charm of water and willow always pleases.

The passage of time has not been so favourable to the rest of the Domain however, because the original area set aside for public recreation has not kept pace with the increasing population wishing to use it. Now it is almost overtaxed. Problems of "bitty" development of small unrelated areas of the Domain for recreation usage were also increasing, as was the demand for increased recreation.

The design philosophy has been to retain the lake and its immediate environs as the focal point of the Domain, but shift the node of usage-pressure to the North-west of the lake from the South as it is now.

This means that the existing area being used has a "breathing space", and most of the concentration of usage has been moved to a larger area, more capable of handling it. The shift of accent, (although retaining the focal point) also opens up a previously un-used section of Domain land. Some of this has been used as a caravan park in the Master plan, but it is sufficiently flexible to allow purely pedestrian usage of the whole new area if it is not economically or
otherwise feasible to go ahead with the caravan park development.

It is important to keep this area intact as a total entity, and thus the linkage between vintage cars and the Plains Railway has been kept to the outer boundaries. A definite finishing point to the area is provided by this, keeping an open, yet intimate feel to the area (on a larger scale compared to the lake).

The new node, finishing as a car parking zone has also been kept to the outer boundary of the new area, yet far enough away from the lake to preserve the lake's tranquility.

The main entrance has too much character to lose by changing the entrance, and so to preserve this attractiveness and the character of the open area to the South of the lake, the new road has been kept again to already formed boundaries. The opportunity exists here for the short-term visitor, who doesn't have the time to fully explore the whole Domain, with informal parking under the trees, and intimate areas formed by the grouping.

By keeping the new node fairly tight against existing boundaries, as with the access road, almost complete separation of pedestrian and vehicular traffic has been achieved and the quiet country atmosphere of the Domain preserved.

The quiet sheltered area directly to the North of the lake has been proposed as a children's playground, and here young and old can enjoy the harmonious feeling of tall trees and many open spaces.

The Plains Railway has been developed further to encompass a village-type scheme, and provision made for parking when the complex is opened for public Gala days etc.
Associated with this, the miniature railway has been shifted so that allied activities can more logically be appreciated together.

Enlargement and updating of the Swimming pool internal area and facilities will also mean it can cope with increased usage. A small informal-type carpark has been provided close to the pool to cater for those who only wish to swim, whereas any other users can stroll through the trees around the lake first if they have more time.

On a broader scale, the whole Domain has been treated as one entity, including the golf course, and the present pony club area and cultivated areas. The problem is that by road or rail, the Domain is split into 4 separate areas, and this subdivision has been reflected in 4 separate types of use.

The only possible solution to this is to try to relate each area to the other, and to the whole Domain by integration with a planting pattern. This pattern is related to soil types, and existing vegetation in the small scale, but to an overall spatial arrangement on a large scale.

The North east section of the Domain was the most difficult to deal with because it is so far from the existing facilities and present emphasis point. However, increasing residential pressure from at least two sides has meant that it must be opened up similarly to the main area, and so provision of areas for different types of recreation has been made. Hockey and tennis have been re-located here because of the better soil types for winter sward regeneration, and summer grass growth.

As well as providing an area for sporting activities,
it acts as a finger or wedge of green space projecting into a possible future residential development area, and as such it's value is many times that of just a sports ground.

Overall then, the philosophy has been one of integration of the various allied activities on the site, segregation of antagonistic ones, and a distinction and separation between people and cars. To unify this problem, a total related planting treatment has been carried out, the whole integrating each part of the Domain, and yet in the smaller scale relating to activities, and the people participating in those activities.