

Preface

This is the third Botanic Garden Management Plan to be produced under the Reserves Act 1977. The second management plan was approved in November 1993. The Dunedin City Council announced its intention to review the second Botanic Garden Management Plan in November 1999. A working party comprising councillors, staff, and representatives from Friends of the Botanic Garden and the Otago Polytechnic has guided this review process (see Appendix 5 for the membership of the working party).

As required by section 41 of the Reserves Act 1977, two rounds of public consultation were held as part of this review, and the resulting submissions received helped to guide the formulation of this plan. Many of the changes to this management plan are relatively minor, representing changes in terminology, or made to account for changes over time both within and outside the Botanic Garden. This largely reflects the major finding of this review, that the existing plan has proved to be an effective and well-utilised tool for the management of the Botanic Garden.

One key change is in the format of the policy structure within the plan, to make it more consistent with other reserve management plans being produced by the Dunedin City Council. The '*Aim-Objectives-Aims-Policies*' framework of the previous plan is thus replaced within this plan by a '*Management Aims-Objectives-Policies*' framework.

For their contribution to the development of this plan, I would like to acknowledge those who made submissions, and the members of the Botanic Garden Management Plan Review Working Party.



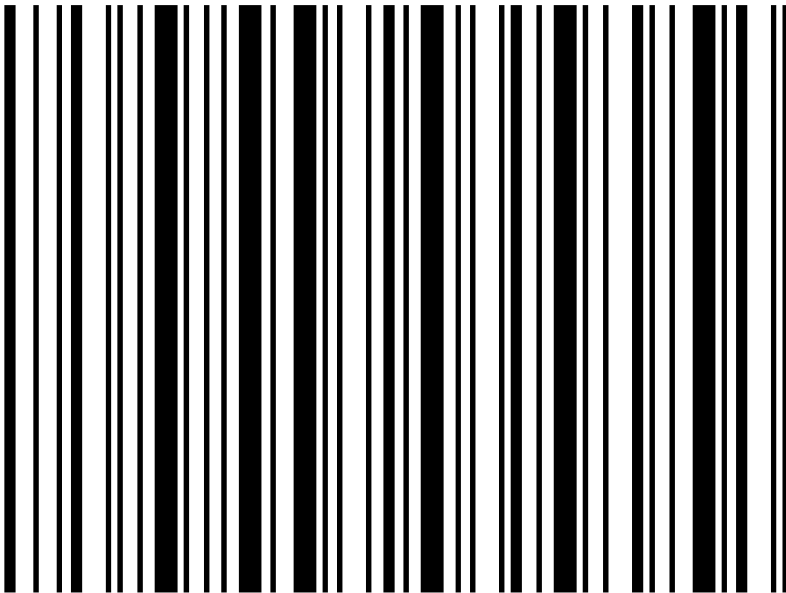
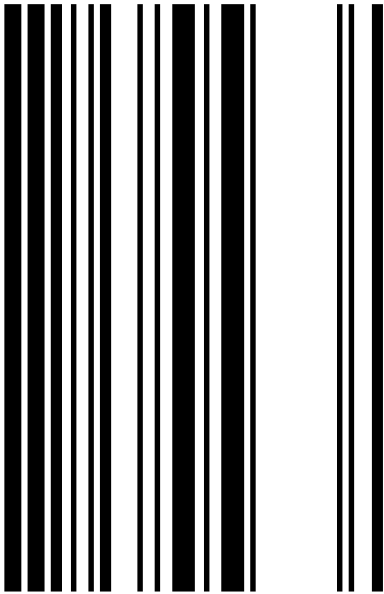
Cr Peter Chin
Chairperson
Botanic Garden Management Plan Review Working Party

Approved by the Dunedin City Council
24 October 2000

Table of Contents

A	Introduction.....	A1
A.1	The Role of the Dunedin Botanic Garden.....	A1
A.2	Reserve Management Planning	A2
A.3	Management of the Dunedin Botanic Garden	A3
B	Resource Statement.....	B1
B.1	Legal Description and Location.....	B1
B.1.1	Legal Description	B1
B.1.2	Location and Access.....	B3
B.2	The Physical and Natural Environment	B4
B.2.1	Topography and Aspect.....	B4
B.2.2	Soils	B4
B.2.3	Climate	B4
B.2.4	Wildlife.....	B4
B.2.5	Physical and Natural Features	B5
B.3	Botanical Services	B7
B.3.1	Herbarium.....	B7
B.3.2	Library	B7
B.3.3	Database	B7
B.3.4	International Seed Exchange	B7
B.4	The Plant Collections and Aviary	B8
B.4.1	Winter Garden	B8
B.4.2	Rose Garden	B8
B.4.3	Herb Garden	B8
B.4.4	Water (Bog) Garden	B8
B.4.5	Rock Garden.....	B8
B.4.6	Herbaceous Plant Borders	B9
B.4.7	Camellia Borders.....	B9
B.4.8	Thematic Borders	B9
B.4.9	Knot Garden and Wolf Harris Fountain	B9
B.4.10	Clive Lister Garden	B9
B.4.11	Otaru Teien.....	B10
B.4.12	Lindsay Creek Borders	B10
B.4.13	Rhododendron Dell	B10
B.4.14	Native Plant Collection	B11
B.4.15	Geographic Borders.....	B11
B.4.16	Arboretum	B11
B.4.17	Aviary	B12
B.5	The History of Development	B13
B.5.1	Establishment (1863 - 1902)	B13

B.5.2	Transformation - The Tannock Era (1903 to 1940)	B14
B.5.3	Decline and Renewal (1940 to 1970)	B15
B.5.4	Redevelopment and Expansion (1970 to present)	B15
C	Policy Statement	C1
C.1	Management Aims	C1
C.2	Management	C2
C.2.1	Control	C2
C.2.2	Maintenance	C4
C.2.3	Staff	C5
C.2.4	Contract Works	C6
C.3	The Resource	C7
C.3.1	Landscape	C7
C.3.2	The Plant Collections	C9
C.3.3	Botanical Services	C10
C.3.4	The Aviary	C11
C.3.5	Heritage Features	C12
C.3.6	Buildings and Structures	C13
C.3.7	Ducks and Seagulls	C15
C.3.8	Pest Control	C16
C.4	Use	C17
C.4.1	Public Use	C17
C.4.2	Recreational Use	C18
C.4.3	Tourism and Promotion	C20
C.4.4	Education and Interpretation	C21
C.4.5	Commercial Activities	C23
C.4.6	Residences	C25
C.5	Access	C26
C.5.1	Hours of Access	C26
C.5.2	Vehicle Access, Parking and Pedestrian Safety	C27
C.5.3	Pedestrian Access	C29
C.5.4	Charges and Fees	C30
D	Appendices	D1
	Appendix 1 - Heritage Features Of The Dunedin Botanic Garden	D1
	Appendix 2 - Botanic Garden Business Unit Management Structure	D3
	Appendix 3 - Chronology Of Development	D4
	Appendix 4 - City Of Dunedin Bylaws, Part 10 (Reserves)	D9
	Appendix 5 - Botanic Garden Management Plan Working Party	D12



A Introduction

A.1 *The Role of the Dunedin Botanic Garden*

The Dunedin Botanic Garden is a valuable public asset that fulfils a number of important roles within the City. These include the following:

- It fulfils important horticultural, botanical and biodiversity functions through the management of its plant collections, including an international responsibility for conservation. This role in conservation is extended to the Aviary, which plays a part in captive breeding for endangered New Zealand bird species.
- It participates in an international seed exchange programme that provides a vital source of plant diversity.
- It provides an education and research resource both for the general public, for school and tertiary students, and for other organisations.
- It has a visual prominence within the landscape of Dunedin consistent with its situation as part of the Dunedin Town Belt, and contains a number of structures and features of heritage significance.
- It provides a sanctuary for people to escape the urban environment and enjoy the quiet amenity offered by the Garden.
- It provides an area for both active forms of recreation, such as walking along its many tracks; and passive forms, such as observing and interpreting the plantings and birds, appreciating the aesthetic values of the landscape, or sitting and reading.
- It functions as a tourist attraction, for instance, through the annual Rhododendron Festival.

The importance of each of these roles, and the occasional potential for conflict between them, highlight the need for effective and strategic long term management of the Garden.

The land on which the Dunedin Botanic Garden is sited is part of the Dunedin Town Belt and is gazetted as a recreation reserve under the Reserves Act 1977. A management plan is therefore required to administer the land and how it is utilised. While there is a management plan for the Dunedin Town Belt¹, the Dunedin Botanic Garden is treated as a separate entity with its own plan.

In 1983 the first Dunedin Botanic Garden Management Plan was adopted. As part of the statutory requirement under the Reserves Act 1977 to keep the management plan under review, the second plan was approved in 1993. This document represents the second major review of the plan, and is intended to provide a framework for the management of this important public asset for the next five years.

¹ Dunedin Town Belt Management Plan, Dunedin City Council, April 1998

A.2 Reserve Management Planning

Section 41(3) of the Reserves Act 1977 requires a management plan to provide for and ensure the use, enjoyment, maintenance, protection and preservation of a reserve, and provide for appropriate development as resources permit. Management planning is intended to enable the administering body (in this case, Dunedin City Council) to establish the desired mix of uses and values for a reserve and set in place policy to guide day to day management.²

In practice, this means that the plan should not set out any specific work programme for the Garden. Rather, it provides a framework of aims, objectives and policies that guide the formulation of work programmes, and against which proposals for development are assessed. The plan is a tool for ensuring continuity of management and providing strategic direction for the Garden.

Determining community preferences, and establishing the best means to provide for them are essential ingredients for good management planning.³ The valuable opportunity for public input that the review of this management plan provides is one process by which this is achieved. The regular public feedback that Garden staff receive, and their close liaison with a variety of interest groups, are other means for community input.

² Reserves Act Guide, Local Government New Zealand and Department of Conservation, 1999

³ Reserves Act Guide, p. 6/1.

A.3 Management of the Dunedin Botanic Garden

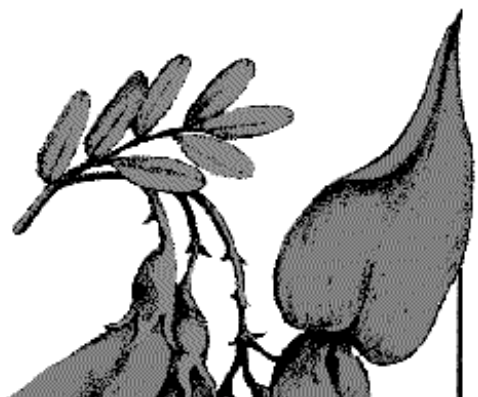
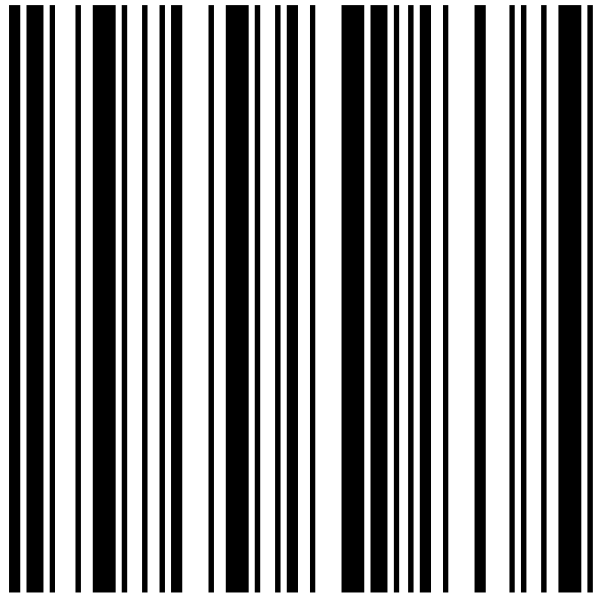
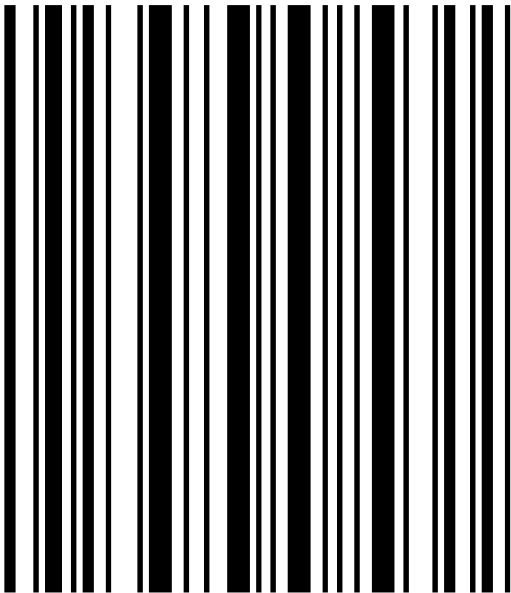
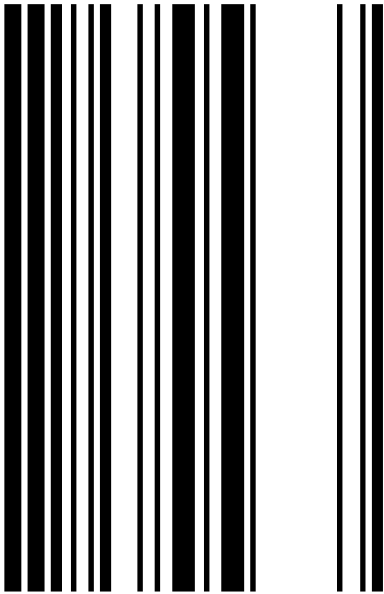
The Dunedin Botanic Garden is managed by a Dunedin City Council business unit, which is headed by a Curator Manager (see Appendix 2 for the management structure of the Garden). The Dunedin City Council is the administering body for the Garden as defined by the Reserves Act 1977, but giving effect to this management plan is the key responsibility of the Curator Manager, or whosoever is employed by the Dunedin City Council to be responsible for the management of the Botanic Garden.

While this management plan provides an overall strategic direction for the Garden, day-to-day operation of the Garden is controlled via a programme of works covering a much shorter time span. As part of this process, Collection Curators negotiate a specified programme of works with the Collection Manager and provide monthly activity reports that prioritise work and allocate resources to areas with the most urgent needs.

An annual business plan is developed for the Garden and submitted for Council approval as part of the Annual Plan process. The business plan includes a service level agreement between the Botanic Garden Business Unit and the Dunedin City Council. This sets out outcomes and outputs to be achieved over the year, and performance measures to be used to assess achievement of these.

The business plan also includes a proposed activity plan for the year - a list of improvements, renovations and renewals which can be achieved if resources beyond the budgeted Council funding can be secured. The improvements listed in the Action Plan are derived from an ongoing review and assessment of project ideas and desirable improvements for the Botanic Garden. This was developed from a Friends of the Botanic Garden initiative in 1991 when a public meeting was convened to discuss issues pertaining to the development of the Garden. A record of this meeting was used in 1996 to form the basis for prioritising projects in the future within available funding.

Any new features proposed for the Garden are assessed to ensure that they comply with the policies of the management plan. They are categorised as to whether they can be funded through the existing business unit budget, or through sponsored arrangements, or whether they should be proposed as a capital item through the Council's Annual Plan process. Any significant development proposal for the Gardens will require thorough public consultation to progress further.



B Resource Statement

B.1 Legal Description and Location

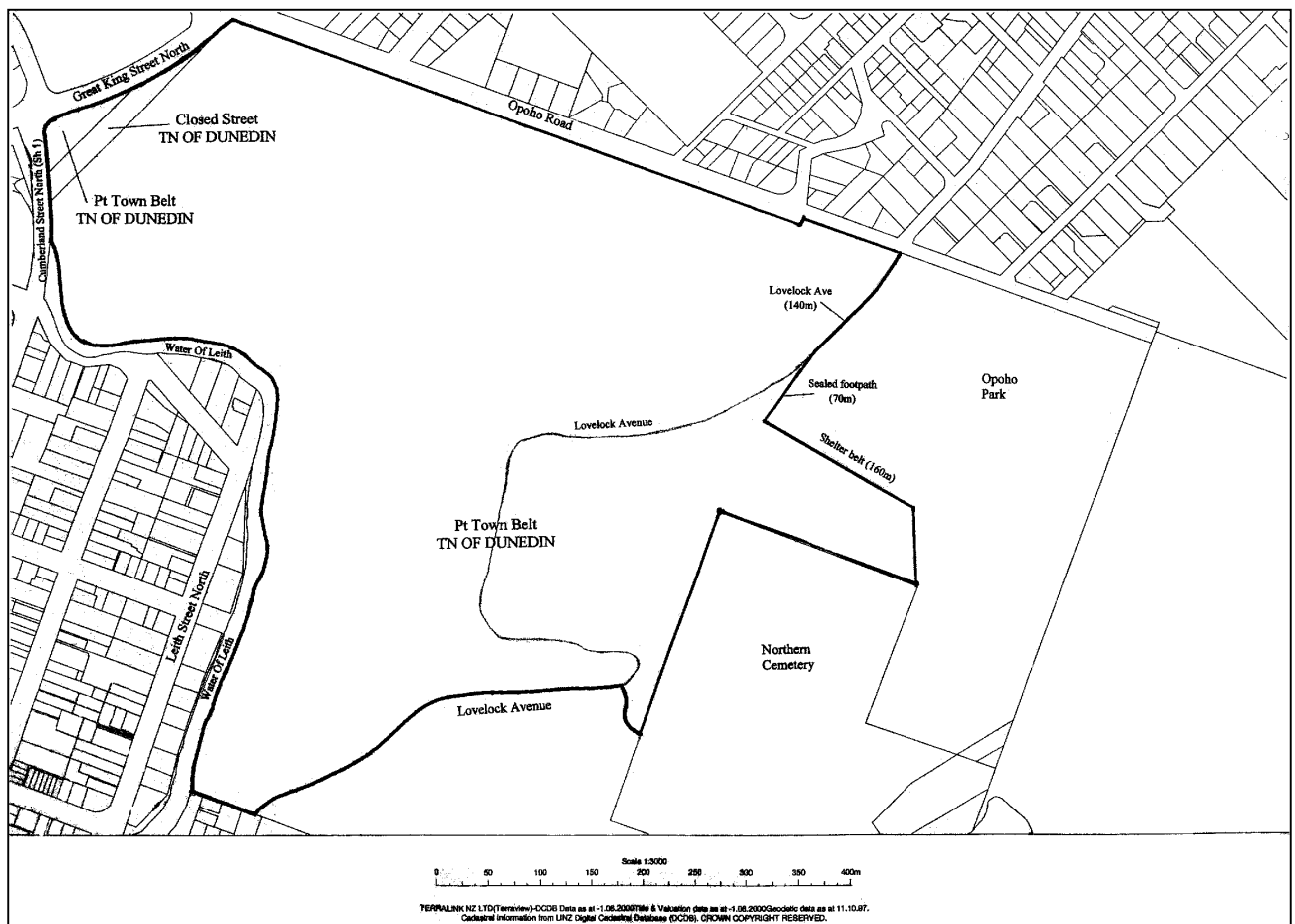
B.1.1 Legal Description

The land on which the Dunedin Botanic Garden is sited is classified as a recreation reserve under section 17 of the Reserves Act 1977. The legal description of the recreation reserve that contains the Dunedin Botanic Garden, as gazetted in 1983, is:

66.3255 hectares, more or less, being part of the Town Belt and Part Closed Street, Town of Dunedin, and being the balance of the land contained in the certificate of title 301/116 Limited.

Approximately 38 hectares of this recreation reserve is administered as part of the Town Belt. The approximately 28 hectares remaining is administered under this management plan as the Dunedin Botanic Garden. See Map 1 for the land that comprises the Botanic Garden.

The land on which the Garden is located is zoned 'Recreation' under the Transitional Dunedin City District Plan (Dunedin Section), and is zoned within the Residential 1 Zone under the Dunedin City Proposed District Plan 1999. It also lies within an Urban Landscape Conservation Area under the Dunedin City Proposed District Plan 1999. The implications of this zoning for management of the Garden are discussed in sections C.3.1 and C.3.6 below.





Aerial View of the Botanic Garden Looking South, 1999

B.1.2 Location and Access

The Dunedin Botanic Garden lies at the north-eastern end of the City's Town Belt, approximately two kilometres north east of the Octagon. The Garden is bounded to the north by Opoho Road; to the east by Lovelock Avenue and the Northern Cemetery; to the west by Great King Street and Cumberland Street (State Highway 1); to the south by the Water of the Leith and properties adjoining Dundas Street. The residential suburbs of Opoho, Dunedin North and North East Valley are adjacent to the Garden.

Lovelock Avenue, Opoho Loop Road and Lindsay Creek all intrude into the boundaries of the Garden. The result is that an area to the north-east, Lovelock Bush and the Lower Garden are all alienated from the larger area of the Upper Garden. It should be noted that Lovelock Avenue and Opoho Loop Road are not legal roads, but are also classified as recreation reserves.

The main point of access to the Garden is via the Garden's Corner Entrance (also known as the Alexander McMillan Entrance) at the corner of Opoho Road and Great King Street. Other major entrances are off the upper and lower car parks, and the corner of Lovelock Avenue and Opoho Road. Other entrances can be found along Lovelock Avenue, Brook Street, Gore Place, Great King Street and Opoho Road. Three pedestrian bridges across Lindsay Creek allow access between the Upper and Lower Gardens during the hours of daylight. Access to the Lower Garden is restricted after dark.

Vehicular access is limited to the car park entrance from Cumberland Street (State Highway 1) in the Lower Garden and two points on Lovelock Avenue in the Upper Garden. Access is usually limited only to service and maintenance vehicles, and private cars only for older persons and people with disabilities. The Garden is managed as a pedestrian precinct, with the use of bicycles, skateboards and rollerblades prohibited.

B.2 The Physical and Natural Environment

B.2.1 Topography and Aspect

The Lower Garden is situated within the valley of the Leith, and slopes slightly toward Lindsay Creek, which joins the Leith at the southern side of the Garden. The Upper Garden straddles a spur running down from Signal Hill and varies considerably in slope and aspect.

The Upper Garden is characterised by its many and varied micro-climates that result from the various slopes, aspects and gullies that are present along the spur.

B.2.2 Soils

Two soil types predominate in the Lower Garden: mottled fragic pallic soils and weathered fluvial recent soils.⁴ Both of these provide an excellent substrate for the cultivation of large tree specimens.

The Upper Garden contains mottled fragic pallic soils along the top of the spur, and mottled firm brown soils on the steeper slopes.

A narrow strip of land alongside the Leith Stream contains a mixture of weathered fluvial recent soils, mottled fluvial recent soils and typic recent gley soils.

B.2.3 Climate

Dunedin has a mild climate, with average daily maximum temperatures of 18.6°C (summer) and 10.4°C (winter) and has an average annual rainfall (780 mm) spread throughout the year. This provides the optimum growing conditions for most temperate plants. The prevailing wind is from the south-west, but may also originate from the north-east or north-west.

The micro-climates of the Upper Garden also have a profound impact upon the species grown within the Garden. The Rhododendron Dell for example, planted within a large gully, caters for both sun-loving species with large leaves and others that require cool damp conditions year round. Many of the warmer pockets of the Upper Garden provide excellent protection against the harsh frosts often experienced in the Lower Garden.

B.2.4 Wildlife

The Garden is home to a large number of native and exotic bird species. Commonly found species include: bellbird, brown creeper, blackbird, grey warbler, fantail, silver eye and wax eye, wood pigeon, thrush, hedge and house sparrows, starling, redpoll and finch, and mallard and paradise ducks. Meanwhile, species such as Welcome swallow, New Zealand bush falcon and eastern rosellas visit the Garden on a more occasional basis.

Trout are frequently spotted in both the Waters of the Leith and Lindsay Creek. Whistling tree frogs can also be found in and around the Water (Bog) Garden, the Pergola Garden and the Native Wetland Garden.

⁴ Soil types in the Garden have been re-classified under the New Zealand Soil Classification (1992) and are different to those listed in the previous management plan.

Common exotic mammals, many of which are unwelcome pests, include possums and rabbits. Seagulls are also regarded as undesirable within certain areas of the Garden when they are present in large numbers.

B.2.5 Physical and Natural Features

The Dunedin Botanic Garden has two physically or topographically different sections, the Lower Garden and the Upper Garden, separated along a north-south axis by Lindsay Creek (Map 2). The Lower Garden is characterised by its semi formal layout, based on Victorian/Edwardian gardens and horticultural plant displays. Meanwhile, the Upper Garden contains a number of organised plant collections, the Rhododendron Dell/Woodland Garden and horticultural plant displays.

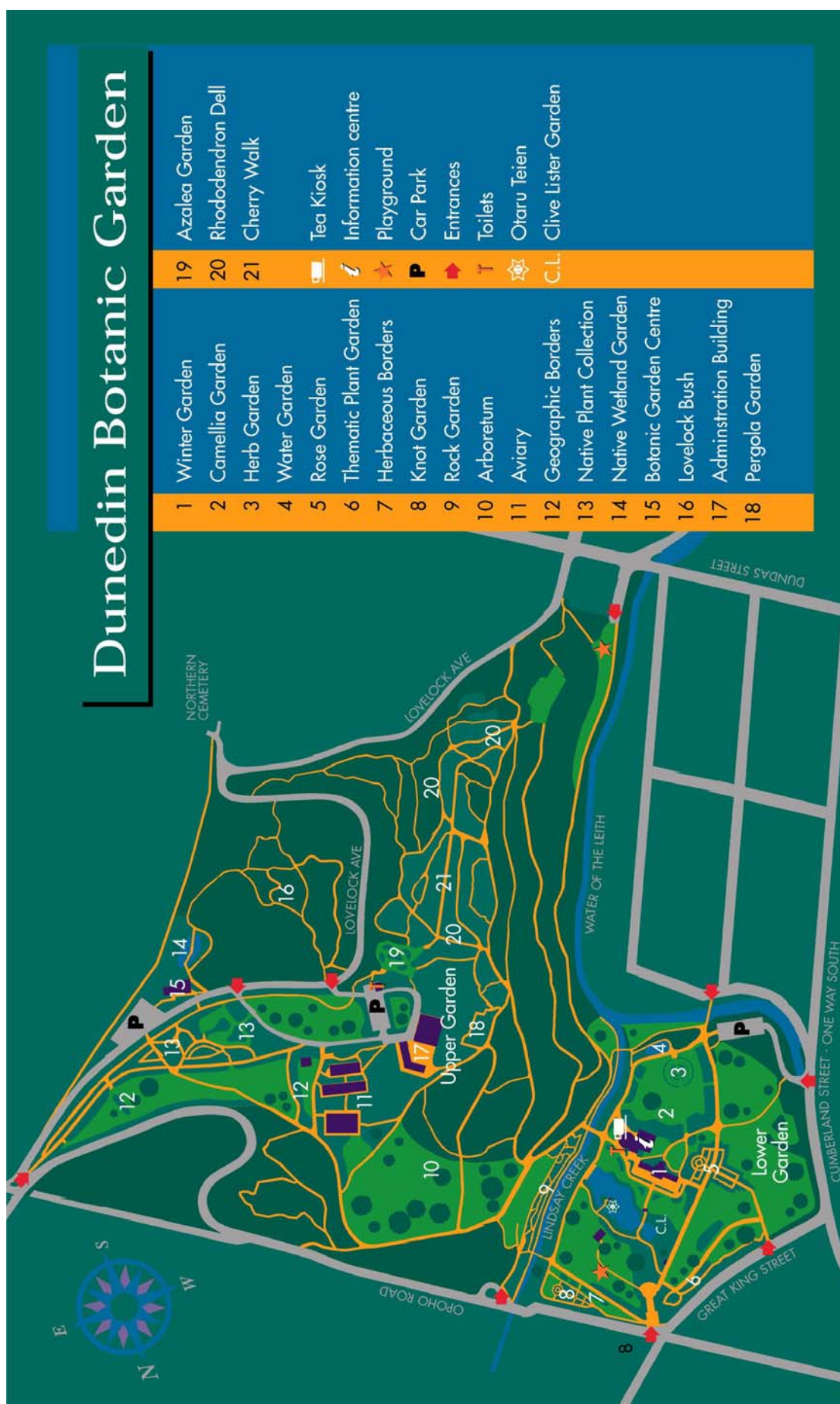
The pentagon-shaped Lower Garden is dominated by the buildings of the Winter Garden, Information Centre, and the café. The whole area is bisected by the 'Main Walk' which runs north to south from the Garden's Corner Entrance to Castle Street. Other main features are the redeveloped Garden's Corner Entrance itself, the Clive Lister Garden, duck pond, Otaru Teien (Japanese Garden), Bandstand, children's playground, Knot Garden, Wolf Harris Fountain and various bronze statues.

Plant collections contained within the boundaries of the Lower Garden include the Rose Garden, Herb Garden, herbaceous borders, camellia borders, thematic borders, Water (Bog) Garden and the Winter Garden. The Rock Garden, while physically located within the Upper Garden, is also managed as part of the Lower Garden.

The Upper Garden is not dominated by any particular structural feature, but staff activity is focused around the administration buildings, Aviary complex, propagation section and the staff residence, all centrally located at the top of the Garden. There are a multitude of tracks that link the Upper and Lower Gardens and that criss-cross the entire Upper Garden.

Close to the administration buildings is the main car park, which is also the main entrance to the Rhododendron Dell. The significant feature of this entrance is the Azalea Garden, which leads visitors down the large gully that from 1914 was the original site of the Rhododendron Dell. The Rhododendron Dell now extends over a significant part of the hillside. The native plant collection, geographic borders, and arboretum are the other major plant collections that are to be found in the Upper Garden.

Other features in the Upper Garden include the Pergola Garden, the Botanic Garden Centre in Lovelock Avenue, the Aviary, significant areas of regenerated native bush (including Lovelock Bush), the Native Wetland and Native Alpine Scree Garden, and Daffodil Lawn.



Map 2: Layout of the Botanic Garden

B.3 Botanical Services

The Botanical Services Section of the Garden is an important focal point for the scientific function that is part of all botanic gardens. Located in the administration building of the Upper Garden, Botanical Services are coordinated by a qualified botanist (Botanical Services Officer), whose job it is to maintain the highest possible quality of information for the public (through correspondence or periodical articles), staff and between the Garden and other similar institutions within New Zealand and abroad. Included in these services are a herbarium, library, computer database and an Index Seminum for international and national seed exchanges.

B.3.1 Herbarium

The herbarium is a collection of preserved plant material, identified authoritatively so as to act as a reference for staff and visitors to the Garden. The Dunedin Herbarium is affiliated to the New Zealand Federation of Herbarium Keepers. Borrowing from the collection is strictly administered by the Botanical Services Officer.

B.3.2 Library

The library contains over 688 titles and is used for staff and student reference. Most books are of specific horticultural and botanical relevance. There is also a substantial number of older gardening titles, many of which are valuable as practical working references, for example *The Gardener's Chronicle* and *The Garden and Desert*.

B.3.3 Database

BG-Base is a computer based inventory of the living collection of the Dunedin Botanic Garden. It is used to record the location, condition, provenance and botanical verification of all plants in the Garden. It can be used to quickly locate plants, or to locate sources of plants. BG-Base contains a database of garden locations (beds and plant collections), the Garden's library (books and journals) and contact addresses for all plant sources (nurseries, individuals, other botanic gardens). BG-Base is compatible with the International Transfer Format for Botanic Gardens Records (ITF 1) which is required for International Conservation Status. Software is available to publish the living collection records on the Internet directly from BG-Base.

B.3.4 International Seed Exchange

Seed is collected from the Dunedin region and is stored in refrigerators at 4°C. This seed is catalogued in an Index Seminum, a list prepared on an annual basis which is offered to 300 selected botanical institutions worldwide in return for their own seed catalogues.

This seed exchange provides a vital source of plant diversity for the Botanic Garden, providing plants from around the world and adding to the specimens supplied locally from private donations, cuttings from the Garden or other sources. For the seed exchange to be successful it is essential that the Garden maintains a high standard of seed collection and preparation, and honours requests for seed from elsewhere.

B.4 The Plant Collections and Aviary

The Botanic Garden organises its management and day to day work tasks by focusing on curatorial responsibility for specific collections, both for plants and birds. Each of these is managed by a Collection Curator, whose job it is to maintain the collection within the overall Botanic Garden strategy and to develop the collection to its fullest potential to achieve a high standard of presentation for the public. The Collection Curators are actively involved in the public's use of the resources, the training of students, supervision of volunteers, and supervision of professional contacts.

The efforts of these staff and the coordination of their work within the overall outputs and performances of the Garden are the responsibility of the Collection Manager. This key position provides the Garden with an experienced organiser of its operational management with direct assistance to the Curator Manager for input to its administration. Refer to Appendix 2 for a diagram portraying the management structure of the Botanic Garden Business Unit.

The collections are as follows:

Lower Garden

- 1 Winter Garden
- 2 Rose Garden
- 3 Herb Garden
- 4 Water (Bog) Garden
- 5 Rock Garden
- 6 Herbaceous Plant Borders
- 7 Camellia Borders
- 8 Thematic Borders
- 9 Knot Garden
- 10 Clive Lister Garden
- 11 Otaru Teien
- 12 Lindsay Creek Borders

Upper Garden

- 1 Rhododendron Dell
- 2 Native Plant collection, including Native Scree Garden, Native Wetland Garden and Lovelock Bush
- 3 Geographic Borders
- 4 Arboretum
- 5 Aviary

B.4.1 Winter Garden

The Winter Garden (Glass Houses), initially developed in 1908, underwent various renovations until in 1990/91 it was returned as far as possible to its original design. This included renovation of the Winter Garden complex, and demolition and removal of the Fernery, Orchid House and Cactus House.



The Winter Garden Cacti and Succulent Collection

Prior to 1988 the collections comprised tropical plants, cacti and succulents, rotational crop plants and tree ferns. Since 1988 the emphasis has changed to attempt to provide more specific and botanically orientated displays (eg economic plants, tender ferns, etc). The collection currently includes a wide variety of plants, including: tropical and sub-tropical succulents; Cactaceae and tropical cacti; tender ferns; Orchidaceae; Bromeliaceae; carnivorous plants; tropical water plants; palms and cycads; epiphytic plants; flowering crops, such as cyclamen, primulas, sinningias, gloxinias and the like

planted on a rotational basis. A significant part of the collections is under glass in storage and care in the propagation section.

B.4.2 Rose Garden

The Rose Garden dates originally to the plan developed in 1869, but was totally redesigned in 1988/89 under the guidance of the Otago Rose Society, following a realignment of State Highway 1. This guidance extends to the assessment of suitable varieties, replacement and renewal programmes and cultural advice. A wide variety of roses is displayed including modern, old fashioned and species. The modern section is separated from the old fashioned and species by an extensive hard wood pergola structure across the main walk. Climber and rambler roses are displayed on an ornamental post and chain support system. This collection continues to expand, particularly the species and old fashioned collections.

B.4.3 Herb Garden

The Herb Garden was established in its present site in 1987, with the encouragement and assistance of the Otago Herb Society, which continues its support for both the maintenance and development of the Garden. The collection has a practical and educational focus, with additional information, such as uses for the plant (ie culinary, medical or cosmetic) provided on the label. The public are encouraged to smell and taste these plants. Therefore sprays are not used in the maintenance of the herb collection.

B.4.4 Water (Bog) Garden

The Water (Bog) Garden is a collection of plants whose roots require constant available moisture. The main structural feature of this garden is a central pond surrounded by plantings and pathways.

B.4.5 Rock Garden

The Rock Garden was established in 1904 and has undergone significant expansion in recent times to return it to the size intended for the garden over 50 years ago. It contains groupings of plants from throughout the world which are representative of a wide range of habitats. Most are small perennial herbaceous plants, which require a high level of maintenance for a high standard of presentation.

The Alpine House (1986), beneath the Tea Kiosk, was constructed with a generous donation from the Dunedin Amenities Society. The House displays plants that are rare, small, difficult to grow outside and provide a representation of the alpine plant world for those without access to the Rock Garden (ie people with limited mobility). Some 800 plants are held in stock for the supply of the House, but are only displayed when in flower. The Dunedin Amenities Society continues to encourage and support the extensions to the Rock Garden.



The Rock Garden

B.4.6 Herbaceous Plant Borders

This collection comprises a variety of different perennial plantings including the traditional long border, with plants of various heights, colours and textures; the colour borders, with blue, white, red, yellow and violet plants; and the hollyhedge border. The Botanic Garden continues to liaise with the Dunedin Dahlia Circle on varieties and placement of plantings.

B.4.7 Camellia Borders

At present the Camellia collection numbers over 450 species, hybrids and cultivars. There are currently 30 different species on display, of which three are predominant: *Camellia japonica*, *C. reticulata* and *C. sasanqua*. Throughout the summer the display is augmented by the presence of herbaceous perennials. With the encouragement of the Otago Southland Camellia Society the collection continues to develop under beech trees.

B.4.8 Thematic Borders

The thematic borders are situated along the Great King Street fence line. They were initiated in 1993, following a forum organised by the Friends of the Botanic Garden, which gave strong support for such a concept of informative plantings. They will be developed to include themes such as: 'Autumn Foliage', 'Coloured Foliage', 'Scented (Aromatic) Foliage', 'Scented Flowering Plants', 'Winter/Spring Flowering Plants', 'Morphological Features' and 'Ornamental Fruit'.

B.4.9 Knot Garden and Wolf Harris Fountain

The Knot Garden, laid out in 1924, is a historic garden feature of low box hedges (originally an extension of a 1914 Shakespeare Garden) planted in a knot shaped pattern. The garden is planted twice a year with annual bedding plants.

The Wolf Harris Fountain was donated to the City of Dunedin in 1889, and moved to the Botanic Garden in 1926. This ornate Victorian fountain was restored in 1994 with generous assistance from the Dunedin Amenities Society.

B.4.10 Clive Lister Garden

The Clive Lister Garden, opened in December 1999, has been established from a generous bequest from Professor Clive Lister for the construction and maintenance of a permanent planting. Situated in the centre of the Lower Garden, adjoining the recently redeveloped Garden's Corner Entrance, the Clive Lister Garden is an informal garden with a bridge as the central feature, overlooking a pond surrounded by moisture loving plants. Around the



View of the Lister Garden (on opening day, December 1999)

slopes of the pond a range of perennial garden plants, shrubs and small trees have been planted to provide all year round interest. Other significant structures in the Garden include the Lych Gate, an

ornamental portal which forms the formal entrance at the Winter Garden end, and the shelter on the Main Walk.

B.4.11 Otaru Teien

The Otaru Teien (Otaru Garden) is a landscape feature developed to celebrate Dunedin's Sister City relationship with Otaru, Japan as part of the commemoration of the 150th anniversary of the province of Otago. The Otaru Teien is an area containing Japanese landscape garden features, although it is not a Japanese garden. The plants are those frequently used in Japanese gardening and arranged in a Japanese style. The liaison between



The Otaru Teien

Otaru and Dunedin's landscape design representatives was an ongoing feature of its successful development and completion in 1998. A stone lantern donated by Otaru City is on a small rocky island in the pond adjacent to the wooden shelter (or Azumaya).

B.4.12 Lindsay Creek Borders

The Lindsay Creek borders are primarily a presentation of ornamental shrubs and trees with underplanting of herbaceous perennials. These borders are a structural landscape feature that separate the vehicle driveway from the top of the embankment wall along Lindsay Creek.

B.4.13 Rhododendron Dell

The Rhododendron Dell, including the Azalea Garden, is historically the best known area of the Botanic Garden, particularly in the spring flowering time. It was established in 1914, when some 500 hybrid rhododendrons were planted in a sheltered gully. The collection now includes over 3000 specimens of about 800 different hybrids and 400 species.

The decision was made in the late 1980s to reorganise the collection into rhododendron subsections and groups of horticultural interest. This was planned by staff with encouragement and advice from the Dunedin Rhododendron Group.

Together with the rhododendrons and azaleas, a wide range of tree species contributes to the woodland canopy, including Japanese maples, magnolias and ornamental cherries. Shrubs such as deutzias, witch hazels, tree paeonies, and enkianthus are interplanted and grouped to provide seasonal interest. Groups of herbaceous perennials form prominent ground cover features throughout the collection. Of particular interest are features such as the cherry walk, a peat garden, gully boardwalk and the mature native trees.

The Rhododendron Festival centres around 'Rhododendron Day', which had its origins in 1971 when the Dunedin Horticultural Society undertook to host a promotion of the Dell one day a year, in order to encourage interest in rhododendrons and to raise funds for the enhancement of the Dell. This has been the Botanic Garden's single most important annual event and has continued to grow in popularity, to

the point that this day is now a fête attracting thousands of visitors, and part of an increasingly important event for promotion of Dunedin throughout the world. The Botanic Garden is an inaugural member of the organising committee for the original Rhododendron Week and continues this integral association with the Festival.

B.4.14 Native Plant Collection

The Native Plant collection is organised according to botanical family, physical characteristic (eg divaricating plants) or natural habitat (eg alpine scree, wetland). The collection includes a number of important sub-collections, such as alpines, hebes, the families of Compositae, Leguminosae and Clematis, all of which have impressive seasonal floral displays.

A New Zealand Native Alpine Scree Garden and a Native Wetland Plant Garden are special features within the Native Plant collection. The Wetland Garden and its boardwalk link the Botanic Garden Centre to Lovelock Bush, and was completed with the encouragement and support of the Friends of the Botanic Garden. Lovelock Bush is a managed area of regenerated native bush with an extensive system of walkways.

The Native Plant collection as a whole is widely used by schools as an important teaching aid and is of special significance for scientific education. Currently there are some 40 endangered species within the collection, and whilst these are not grouped together for reasons of security, interpretive options for endangered plants are being assessed on an ongoing basis. The management of this collection includes further responsibility for the maintenance and development of several other areas of native bush throughout the Upper Garden.

B.4.15 Geographic Borders

The geographic borders comprise several collections of plants that represent various geographic regions of the world. There has been considerable investment in improvements to these collections, which are some of New Zealand's earliest plant collections to be organised scientifically for public education. They contain many species of trees and shrubs and are increasingly underplanted with herbaceous perennials.

The geographic collections are Australian, Himalayan, Central American, North American, South American and North Asian. Within the North Asian collection is the Shanghai collection of Chinese plants, which contains plants that have been obtained through Dunedin's sister city contacts with Shanghai Botanical Garden. A South African plant collection, which used to be located in the current North Asian area and became moribund, is now being redeveloped near the existing Pergola Garden and the slopes directly below it.

B.4.16 Arboretum

The Arboretum features species of Eucalyptus, Pinus, Acer, Picea and Abies, along with many others. Some of the trees are over 100 years old, but a significant number of new species have been planted since 1987 when a considerable space was created by the removal of a stand of *Pinus radiata* which had become unstable and physically unsafe.

While Dunedin's cool climate has the potential to sustain a large number of species, the amount of available area restricts this range. This necessitates a cautious and selective management of new plantings, replacements and renewals. It is also the major factor in focusing on achieving a good

representation of certain genera, eg Eucalyptus, rather than token representation of a wide range of genera. Wider representation can be achieved as effectively by including tree plantings in other collections.

B.4.17 Aviary

The Aviary was relocated to its present site in the Upper Garden in 1986. It is the last remaining link to the Otago Acclimatisation Society, which began collecting birds and other fauna on the Lower Garden site in 1864.

The primary function of the Aviary is its educative and recreational value to the public. This is closely linked to participation in a national captive breeding programme for endangered native New Zealand species. At present it is the largest and most comprehensive bird collection in a public garden in New Zealand. It features an outstanding collection of species from the parrot family, with New Zealand and Australian examples well represented.

The birds are housed in 36 separate aviaries, ranging in size from enclosures suitable for smaller birds such as finches, to the large colony aviary where numerous species are housed. The facilities were set up and continue to be maintained through the generous support of benefactors such as The Community Trust of Otago, Dunedin Rotary Club, Mr Les Cleveland and Television New Zealand. Public donation boxes throughout the collection also provide a good source of financial support.



Blue and Gold Macaw

Food and avian pharmaceutical supplies are obtained throughout the country. Fresh fruits and vegetables are purchased from a local market. A wide range of locally grown and imported seed is also used. Veterinarian services are obtained primarily from a local vet, but an avian specialist is also consulted in Wellington.

New specimens are acquired from around the country. The Aviary is an accredited institution with the Australian National Parks and Wildlife Service. This enables the Aviary to acquire Australian native birds direct from zoological institutions in that country. Exotic birds bred in the Aviary, which may be excess to display requirements, are made available to private buyers, other aviaries and institutions nationwide.

Curation of the Aviary provides for total care of the birds from routine maintenance to the medium and long term management of the collection. Routine care includes specialised feeding programmes on a daily basis, health and welfare provisions, ensuring an hygienic environment, and providing for the security of the birds. The latter has been significantly enhanced by the use of electronic transponders implanted into the birds.

B.5 The History of Development

B.5.1 Establishment (1863 - 1902)

The Dunedin Botanic Garden⁵ was established in 1863 by the Otago Provincial Council on a site bounded by Castle, Leith, Albany and St David Streets, today occupied by the University of Otago. On 5 January 1863, Alexander Begg was appointed as Gardener of the Recreation Grounds including the Botanical Garden Reserve. The first public occasion on the site was the planting of two memorial oaks on 30 June 1863 to celebrate the marriage of the Prince of Wales. One of those oaks survives today near the children's playground. These events confirm the claim for the Garden to be the first Botanic Garden established in New Zealand.



Acclimatisation Society Garden, 1864 (present site of Lower Garden)

Control of the Botanic Garden was transferred to the City Council in May 1866, but the City Council found difficulty in meeting the costs, and control returned to the Provincial Government from 1 January 1868. Alexander McGruer was then appointed as Curator of the Botanical Gardens.

On its first site the Garden quickly developed into a fledgling ornamental garden with a propagation unit designed to supply trees for public areas throughout the province. A major flood in February 1868 led to the decision of the Provincial Council to transfer the Garden to its present site. This land was part of the Town Belt reserve set aside at the beginning of planned settlement. There is some evidence of pre-European occupation. In the gold rush period in 1861-63, the flat area became a campsite for diggers on their way to the goldfields. In 1864, the Otago Acclimatisation Society was given the right to use the site as a depot for fish, birds and animals imported for release in the province, with the public visiting to view the latest acquisitions. The Acclimatisation Society retained the right to use certain areas of the new Garden and continued this use for a number of years.

After the transfer of the Garden, a competition was set up for a design for the new garden, the winner being Mr George Scott, a gardener. No copy of the design appears to exist, but the description in the Otago Daily Times on 8 December 1869 includes a “main gate with three arches, and a magnificent fountain placed immediately within - a rosary, rock-work, Victoria Regia house and statues”.

⁵ The correct legal name is the ‘Dunedin Botanic Garden’, but historically it has also been known by other names, including the Botanical Garden Reserve as mentioned in this section.

The funds were never forthcoming to carry out these ambitious plans, and initially the emphasis was on the development of the nursery and the supply of trees and shrubs for public areas. Nevertheless, by the end of 1870 the greater portion of the flat area had been cleared of scrub, the ground deeply trenched and walks laid out.

With the abolition of the Provincial Governments coming into effect on 1 November 1876, control of the Botanic Garden passed to the Central Government until October 1878, when a Dunedin Botanical Domain Board was set up. This was chaired throughout its existence by Mr Maitland, the Commissioner of Crown Lands, and the Board included the Mayor (ex officio). The Domain Board found it difficult to get the funds needed for development and had to seek help from the City Council. After the death of Mr McGruer in February 1884 (at the age of 72), the Board decided to ask the City Council to take over the management of the Garden, and by July the Government had appointed the City Council to act as the Botanical Domain Board. From this point on the Botanic Garden was a public garden for the City, with the emphasis on recreational and educational aspects rather than on the utilitarian and experimental.

In the hands of the Reserves Committee of the City Council, progress over the next 18 years was slow, hindered by lack of funds and by the changing ideas of successive committees. Apart from a brief period of six months till the end of 1884, the Head Gardener from 1885 to 1902 was John McBean. Although he was an experienced gardener he did not have the freedom to develop any vision of his own, nor did he always have the confidence and support of the Reserves Committee. The first two apprentices were appointed in April 1884 and both completed a four year apprenticeship. Prison labour was ended in 1891.

By the end of the 1890s it was becoming clear that the whole organisation of the Reserves Department needed to be changed but the City Council was slow to recognise the need. In 1902 however, following a report from Henry Matthews, the Government's Chief Forester, the Council decided to call for applications for a Working Superintendent to take charge of Gardens and Reserves. Henry Matthews had pointed out the importance of having a well thought out scheme of improvements and an overall superintendent with ability and experience to carry out improvements in a systematic manner.

An aviary as such does not appear to have existed at the Garden until February 1898, when the Acclimatisation Society erected an aviary with the City contributing to the cost. For a period kiwis and emus were part of the display, as well as a considerable variety of other birds.

B.5.2 Transformation - The Tannock Era (1903 to 1940)



David Tannock, 1935

The appointment of David Tannock at 30 years of age as the new Superintendent was an event of great significance, not just for the City of Dunedin but for the development of horticulture throughout New Zealand. At the time of his appointment he was the officer in charge of the Agricultural School in Dominica, the West Indies. A Scotsman and proud of it, his personal qualities, along with a solid background of practical experience and scientific study made him ideally suited for the task. His four years as student and deputy-foreman gardener at Kew Gardens had given him a broad base for his subsequent work.

One of his first duties was to prepare a comprehensive report on the state of the Garden. As part of this report, Tannock set out his definition of a

Botanic Garden in an attempt to provide direction for the future development of the Garden. The definition read as follows:

“A Botanic Garden should be like a museum of living plants, the collections should be as large as possible, and they should be properly arranged and labelled. A garden so arranged can be of great educational value: it could be a trial ground for new plants, and by correspondence and exchange with similar institutions in other parts of the world we might be able to introduce several new plants and obtain information which would be useful to gardeners and those interested in gardening in Dunedin.”

(Otago Daily Times, 28 August 1903)

Over the next 37 years, Tannock would totally reorganise the way in which the Garden was managed, while all the time he added to the collections, established new ones and upgraded and updated facilities (see Appendix 3, Chronology of Development). Hardly a year went by without a major development taking place, until the 1930s and the Great Depression it brought with it.

Although the economic recession of the 1930s brought difficulties, Tannock was able to make good use of relief labour to carry out some improvements in the Garden. When he retired in 1940 he was succeeded by his deputy, Maurice Skipworth.

B.5.3 Decline and Renewal (1940 to 1970)

As the Second World War intensified, there was a drastic shortage of labour and all activity was directed to the war effort. Many of the flower beds were grassed over and the Winter Garden closed. Following the war, features closed were re-opened and old features were renewed and renovated. The Azalea Garden was reorganised and extended, and interesting work carried out in the development of Rhododendron cultivars. In 1962, a new fernery building was erected and a major reconstruction of the Palm House and other display houses commenced.

The Aviary appears to have gone out of existence soon after the First World War and, despite various efforts to revive it in the 1920s, a new aviary was not built until 1948 as one of the Centennial Year projects. This was located in essentially the same position as the earlier aviary at the south end of the Lower Garden.

In the early 1950s, a new headquarters building was constructed in the Upper Garden using materials obtained from the demolition of Littlebourne House, providing office accommodation and workshops for the Reserves Department. Other major additions in this period were the new Iris Garden (1948), the Sun Terrace (1963) and the Tea Kiosk (1966).

B.5.4 Redevelopment and Expansion (1970 to present)

The focus of this period was not only upon physical development of the Garden's features but also upon its supporting management structures. Following the retirement of Maurice Skipworth in 1968, Gavin Henderson, who had since 1955 been Deputy Director of Parks and Reserves for the Christchurch City Council, became the new Superintendent. This led to an overall reorganisation within the Botanic Garden to make better use of the labour force.

In 1974 the position of Curator was established to ensure that good standards were maintained in the various plant collections. This recognised the increasing responsibilities of the Superintendent in the

areas of Forestry, Reserves and Recreation Grounds. A full-time Botanist was appointed in 1979 with responsibility for maintaining the botanical function of the Garden.

There has also been a recognition of the educational role of the Garden. The opening of the Visitor Education Centre (now the Botanic Garden Centre) in 1982 made it easier to encourage school visits. In 1998 a contract with the Ministry of Education made it possible to appoint a full-time teacher under the Learning Experience Outside the Classroom (LEOTC) scheme. The Visitor Education Centre also provided a venue for the Friends of the Botanic Garden, formed in 1986, to aid liaison with interested groups and the general public.

In 1993, the Otago Polytechnic, in conjunction with the Botanic Garden, opened a Horticultural Course in the Botanic Garden Centre in Lovelock Avenue. This course has grown and the close partnership of this enterprise continues to provide a valuable opportunity for those interested in gaining knowledge and skill in horticulture (see also Section C.4.4 Education and Interpretation).

The Friends of the Botanic Garden have raised funds for a number of projects in the Garden, the major one being the Information Centre in the Lower Garden, which was opened in September 1996. In conjunction with the Botanic Garden management, the Friends are responsible for the daily operation of the Centre.

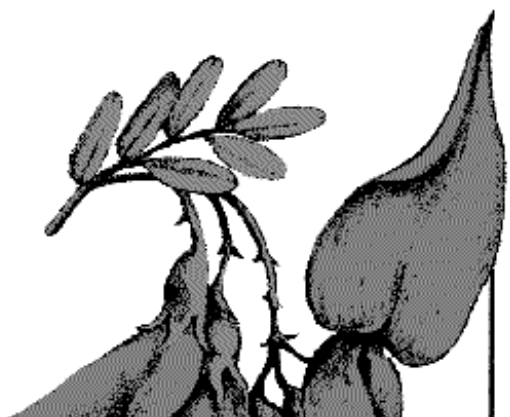
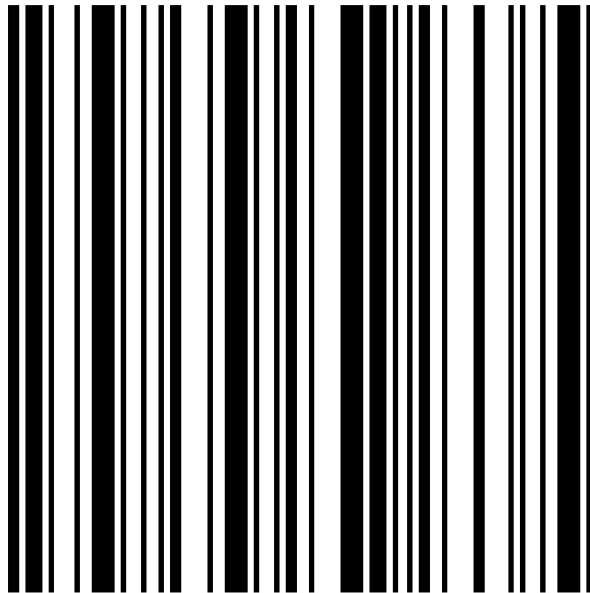
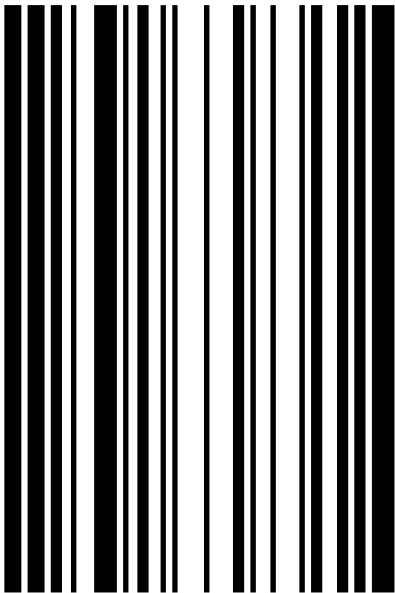
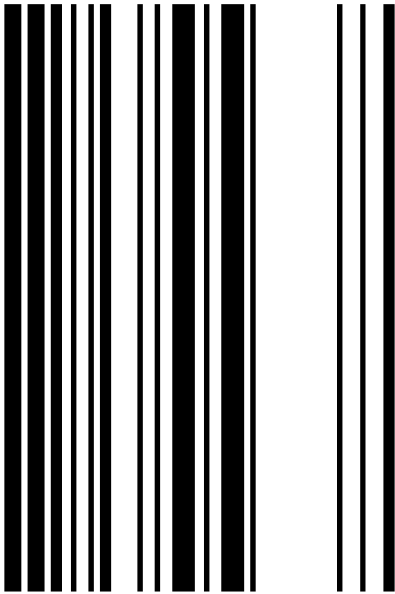
The 1990s brought about sweeping changes in the way the Garden was managed, as the 1989 reform to local body administration took effect. For a period from the mid 1990s to 1999, this meant that the propagation section was separated from the Botanic Garden with Botanic Garden requirements supplied through contracts with Citiworks (a Local Authority Trading Enterprise). After several stages of reorganisation, in 1996 the Botanic Garden became a Council business unit sharing managerial and administration resources with the similarly formed Cemeteries Business Unit; the Curator being the Manager of both business units. In 1999, the Propagation Unit returned to the direct operational control of the Botanic Garden as a result of changes in the lease and contract arrangements with Citiworks.

A number of major developments have been completed in the last ten years and these are listed in Appendix 3. Public appreciation of the Botanic Garden is considered high, and the weekly 'Pot Luck' public forum sessions in the Information Centre are providing the public with opportunities for regular contact with staff. Members of staff are encouraged to get involved with specialist garden groups, and strong links have been established with a number of societies.

(See also Appendix 3: Chronology of Development.)



Lower Botanic Garden, 1912



C Policy Statement

C.1 *Management Aims*

The overall aims set by this management plan reflect the ‘high level’ outcomes that are desired for the Botanic Garden. In effect, they form guiding principles for the overall management strategy for the Garden. The objectives and policies in this plan are designed to be consistent with these management aims as far as possible. At the same time, it should be recognised that management aims and objectives will never be entirely complementary, as differing demands are inevitably placed upon a public asset such as the Garden.

These management aims replace the ‘*Aim-Objectives-Aims-Policies*’ set out in the 1993 management plan (although without replacing their general intent). This change to a ‘*Management Aims-Objectives-Policies*’ hierarchy reflects the format adopted by other reserve management plans developed by the Dunedin City Council.

The management aims of this plan are:

- 1 To manage the Garden as a local and regional botanical resource while giving recognition to its critical functions (horticultural, botanical, recreation, education, biodiversity, conservation), and to continue to recognise and develop its national and international role as a botanic garden.
- 2 To maintain the highest possible quality of horticultural and botanical displays, showing both the range of plants that may be grown in Dunedin and the appropriate uses of these plants.
- 3 To develop the Garden as an educational resource and allow for the sustainable utilisation of its resources for research purposes.
- 4 To encourage public appreciation of and access to the Garden as a recreation reserve, in a manner compatible with its horticultural and botanical emphasis.
- 5 To preserve the landscape values of the Botanic Garden in a manner consistent with its situation within Dunedin’s Town Belt.
- 6 To conserve listed heritage structures within the Garden.
- 7 To manage the Botanic Garden in accordance with the Reserves Act 1977, this management plan and other Council policies.

C.2 Management

C.2.1 Control

Management, use and development of the Botanic Garden is subject to the provisions of the Reserves Act 1977 relating to recreation reserves. Section 53(h) of the Act gives an administering body the power to set aside any part of a recreation reserve as a garden and to construct or develop those gardens for public recreation or enjoyment.

The Dunedin City Council is the administering body for the Botanic Garden in terms of the Reserves Act 1977, and in turn delegates the day-to-day management function to its Botanic Garden Business Unit. In addition to this management plan, this delegation is controlled and monitored by the Council on an annual basis via a business plan and service level agreement negotiated between the Council and the Business Unit.

The Council's Reserves Management Plan - General Policies Section document provides policies for day-to-day management of all reserves in Dunedin. These policies provide detailed and evolving guidelines to assist in the implementation of the aims and objectives of this and other management plans. However, where the specific policies of this plan overlap or contradict the Reserves Management Plan - General Policies Section document, the policies of this plan take precedence.

The following policies within the Reserves Management Plan - General Policies Section are superseded by policies within the Botanic Garden Management Plan:

- | | |
|-----------------------------|------------------------------------|
| • Proposed District Plan | • Reserve Lighting |
| • Community Consultation | • Sportsfield Lighting |
| • Enforcement | • Chargeable Facilities |
| • Trees and Tree Management | • Camping |
| • Fencing | • Circuses and Side-Show Operators |
| • Use of Reserves | • Plaques and Commemorative Trees |
| • Exclusive Use | • Fireworks Displays |
| • Commercial Use | • Landscape |
| • Occupation Agreements | • Buildings and Structures |
| • Tracks | • Change |
| • Car Parking | |

The following policies within the Reserves Management Plan - General Policies Section are complementary to policies within the Botanic Garden Management Plan and considered to have effect:

- | | |
|---------------------------------------|------------------------------------|
| • Tangata Whenua, Mana Whenua and Iwi | • Easements and Encroachments |
| • Council as an Affected Party | • Abandonment |
| • Naming of Reserves | • Use of Hazardous Substances |
| • Liquor Licenses | • Refuse and Waste Disposal |
| • Signs | • Aircraft and Helicopter Landings |
| | • Play-space Development |

Use of all Council reserves is further regulated by Part 10 (Reserves) of the Dunedin City Bylaw 1991 (see Appendix 4).

Development and use of the Botanic Garden is also subject to the provisions of the Resource Management Act 1991, under which local authority district plans are prepared. Resource consents required for development are additional to, not a substitute for, the consent of the Dunedin City Council as reserve administrator. The land on which the Garden is situated is zoned Recreation under the Dunedin City Transitional District Plan (Dunedin section) and Residential 1 under the Dunedin City Proposed District Plan 1999. It is also within an Urban Landscape Conservation Area under the Proposed District Plan, which has implications for earthworks and the removal of bush.

Any new feature proposed for the Botanic Garden requires assessment to ensure compliance with the policies of this management plan. A report on such developments will be prepared and presented for Council approval. This will allow a full public consultation process to take place, ensuring that Council resources are allocated to reflect the needs and aspirations of the community. Where Council funding is sought, any proposal should be submitted as part of the Council's Annual Plan process. Refer also to Sections C.3.1 Landscape and C.3.6 Buildings and Structures.

Objective

To manage the Dunedin Botanic Garden according to the policy framework set out by this management plan, and to comply with all relevant statutes, bylaws and Council policies.

Policies

- a) The Dunedin City Council is the administering body for the Dunedin Botanic Garden, as defined under the Reserves Act 1977. Day-to-day management of the Garden shall be the responsibility of the Botanic Garden Business Unit of the Dunedin City Council.
- b) Management of the Garden shall adhere to a policy framework set out by the Botanic Garden Management Plan, which is to be prepared in accordance with the Reserves Act 1977 and reviewed at regular intervals.
- c) Responsibility for giving effect to this management plan lies with the Curator Manager of the Botanic Garden Business Unit or whoever is employed by the Dunedin City Council to be responsible for the management of the Botanic Garden.
- d) Management of the Garden shall comply with those complementary policies within the Reserves Management Plan - General Policies Section listed above, and any other relevant Dunedin City Council policies and bylaws, including Part 10 (Reserves) of the Dunedin City Bylaws 1991.
- e) Management of the Garden shall comply with all relevant legislation, including the Reserves Act 1977 and the Resource Management Act 1991.

C.2.2 Maintenance

The Botanic Garden is a recreation reserve set up for the benefit, enjoyment and education of the community at large. Standards of presentation should reflect the needs and expectations of both recreational and educational users and must be maintained at the highest possible level throughout the year.

Resources for maintenance are managed to achieve the highest possible levels of presentation during periods of peak use and special events. As well as physical resources, these resources include staff, the use of partnership arrangements, volunteers, community and interest group inputs, contract labour and other resources.

Section 42(2) of the Reserves Act 1977 states that trees or bush on any recreation reserve should not be cut or destroyed unless the administering body is satisfied that it is necessary for a number of reasons, including the proper management or maintenance of the reserve, or the management or preservation of other trees or bush, or the safety of persons or property on or near the reserve. This is given effect under this management plan by the ongoing maintenance of the plant collections of the Garden by the Botanic Garden Business Unit.

Objective

To maintain a consistently high standard of display for public presentation through the efficient and effective management of resources.

Policies

- a) The Dunedin City Council shall be responsible for the efficient deployment of staff, contractors, volunteers and student trainees within the Garden.
- b) Technology that will improve efficiency, ensure that the standard of display is not compromised, and that remains within resource parameters, shall be made available to the Garden's maintenance programmes.
- c) Staff employed by the Dunedin City Council shall undertake maintenance within a resource allocation framework provided by the Council's Annual Plan, to enable efficient use of resources.
- d) In line with section 42 of the Reserves Act 1977, any cutting or destruction of trees or bush at the Garden will be undertaken only when the Dunedin City Council is satisfied that it is necessary for the proper management or maintenance of the reserve, or the management or preservation of other trees or bush, or the safety of persons or property on or near the reserve. See also Policy C.3.1(d).

C.2.3 Staff

The Botanic Garden Business Unit is responsible for the supervision of works that are contracted out, such as plant supply, litter collection, mowing and track and pathway maintenance. Garden staff are further responsible for ensuring that work undertaken by other parties such as students and volunteers maintains continuity of performance and established standards. A diagram of the management structure of the Botanic Garden Business Unit is given in Appendix 2.

The requirements of the Garden are such that each plant collection demands a considerable degree of specialised knowledge to ensure that the needs of these organised groupings of plants are met. For example, the cultural needs of the Rock Garden are quite different to those of the Winter Garden or the Rhododendron Dell. While many of the maintenance tasks are routine, it is essential that specialised knowledge and experience is available for the sustainable development of the plant collections. This knowledge and experience is currently provided by the person who is responsible for the management of the plant collections (the Collection Curators). This knowledge and experience is augmented by those of the Curator Manager, Collections Manager, Information Services and Botanical Services Officers, including advice and expertise gained from their liaison with individual contacts and specialised horticultural societies.

Objective

To ensure that staff have the appropriate skills, knowledge and working environment to effectively manage the collections and ensure continuity of presentation standards in the Garden.

Policies

- a) A job description shall be in place that reflects the specific needs of, and key result areas for, the management of the collections.
- b) Staff shall have the appropriate level of education, skill and technical experience to enable the specific needs of the individual collections to be met.
- c) The relationship between the staff, students, volunteers and contractors shall be clearly defined and the responsibilities of all parties established and maintained.
- d) Staff shall be responsible for the efficient and effective deployment of volunteers, contractors and student trainees within the Garden.
- e) Staff shall maintain a working relationship with specialised horticultural societies and other relevant organisations, and shall liaise with the public on a regular basis.

C.2.4 Contract Works

A variety of essential works and services within the Botanic Garden are tendered competitively, through contracts that are monitored for performance. The range of works tendered includes turf control (mowing); track maintenance; litter and rubbish collection and disposal; and professional services (general horticultural services) as support for the Botanic Garden staff.

Objective

<i>To ensure that the required standard is achieved in all contract work.</i>

Policies

- a) The contract between the contractor and the Dunedin City Council shall be clearly documented to quantify and specify the works and the standards required.
- b) The Dunedin City Council will monitor the standard of works and services provided by the contractor.
- c) Where competitive tendering is involved in the selection of the contractor, the approved Council policy for the evaluation process shall apply.
- d) Contract decisions will be made in the context of Council's policy for tenders, as covered by the Purchasing and Disposal Manual.

C.3 The Resource

C.3.1 Landscape

The landscape of the Botanic Garden is an important feature of its identity and character. As part of the Town Belt, it is also an integral part of Dunedin's Victorian-style townscape, reflecting the Garden City traditions of that period.

The Garden has a variety of different topographical, vegetative, heritage and cultural features which combine to provide it with a unique and distinctive character. Such features include bush cover, lawns, semi-formal horticultural plots, creeks and ponds, and structures of heritage, cultural and functional importance. Inappropriate treatment, use or development of any of these features can detract from the overall character and enjoyment of the Garden.



**View of Café, Information Centre and Winter Garden
(from above Rock Garden)**

With increasing use of the Garden by visitors, it is important that this definable landscape character and identity is not damaged or lost in an effort to provide more people with more opportunities and experiences. Consequently, any new development that is proposed must be assessed in relation to its landscape impact on the immediate area and to the Garden overall.

The Urban Landscape Conservation Area provisions under the Proposed District Plan apply to the Botanic Garden. These stipulate that the removal of areas of bush of 20 m² or greater of continuous canopy cover is a discretionary activity (restricted) and therefore requires resource consent, with the Council's discretion restricted to the impact on the amenity, natural character and landscape values of the locality and bush. Earthworks that exceed 10 m³ and change the ground level by 1 m or more are also a discretionary activity (restricted), where the Council's discretion is restricted to the stability and visual impacts of the work.

It should be noted that there are no significant trees listed for the Botanic Garden in Schedule 25.3 of the Dunedin City Proposed District Plan 1999. This is because protection of trees on reserves is provided under the provisions of the Reserves Act 1977 and reserves management plans such as this one (refer to Policy C.2.2(d)).

Objective

<p><i>To ensure that the unique character and identity of the Garden is protected and enhanced.</i></p>

Policies

- a) The landscape character, atmosphere and scenic amenity of the Garden shall be protected.
- b) New features of the Garden shall be sited and designed so as not to detract from the overall landscape values.
- c) Major new features of the Garden shall require a landscape plan, prepared by a qualified landscape architect, to be approved by the Council.
- d) Any earthworks or removal of bush in the Garden shall be conducted in adherence with the rules of the Urban Landscape Conservation Area section of the Dunedin City Proposed District Plan 1999. See also Policy C.2.2(d).

C.3.2 The Plant Collections

Plant collections are the fundamental resource of a botanic garden. The extent to which the resource data within this plan refers to the individual collections reflects their importance and indicates the diversity of plants that are grown within each collection.

Botanic gardens organise their plant resources into collections for interpretive and educational purposes. The Dunedin Botanic Garden has historically organised its collections to interpret and display a number of concepts or themes. These are listed in Section B.4 above. Within these collections, there are a number of sub collections (eg the hebe collection within the Native Plant collection). However, for the purposes of this management plan only the major collection categories are referred to, as they are the easiest to physically recognise and define.

Interpretive material is a key ingredient for a plant collection to fulfil its potential as a facility for public information and education. Interpretive material must be structured and consistent in quality to provide a high standard of service to the public within the resources available.

A botanic garden is not merely a living museum of plant species. It is also a dynamic and evolving landscape for their culture and presentation. The plant collections must expand to fulfil the requirements of a botanic garden's function as a scientific resource, or risk degeneration to a state of token representation of plants.

The international responsibility of botanic gardens for plant conservation is formally recognised by the Dunedin Botanic Garden through its membership of the Botanic Gardens Conservation International, administered from Kew Royal Botanic Gardens, Surrey, England.

Objective

To ensure that the plant collections fulfil the traditional botanic garden responsibilities for public appreciation and interpretation, education and conservation.

Policies

- a) The plant collections shall develop and maintain the fullest possible diversity of plant species, cultivars and forms within the limits of space, resources and the local environment.
- b) Where possible, plant collections shall give priority to the cultivation, conservation and interpretation of rare, threatened and endangered species.
- c) Ongoing liaison with appropriate horticultural groups and societies will enable their expertise and knowledge to be resourced for the management of the plant collections.
- d) The Garden shall continue to fulfil its international responsibilities for conservation, and will maintain its collections to a standard that ensures its continuing membership of Botanic Gardens Conservation International.

C.3.3 Botanical Services

There are a number of botanical services that are required for the Garden to fulfil its botanical role. One is the supply of accurate information to the public. Another is to provide the Collection Curators with botanical data and systems as part of the overall plant reference system for the Garden. Paramount in both of these services is the need to retain scientific credibility and integrity.

The botanical services of the Garden are coordinated by the Botanical Services Officer, whose job it is to provide and coordinate the services described above, and to manage systems such as the seed exchange and plant reference system. Other botanical services at present are the reference library and herbarium.

It is important that the botanical services are up to date and compatible with other related institutions and organisations to provide for effective liaison and networking. This will further enhance the integrity of the Botanic Garden in its role as a botanical and horticultural resource for the public.

Objective

The botanical services will both address the management requirements for the Garden and endeavour to meet the needs of the public.

Policies

- a) A suitably qualified and experienced person shall be employed to coordinate the Garden's botanical services.
- b) An Index Seminum will be prepared on an annual basis for the exchange of seeds with similar institutions around the world.
- c) A plant reference system shall be managed on a computer database, including details of plant accession, propagation and life history. This system should be compatible with the international transfer format and able to be accessed by similar institutions via the Internet.
- d) The herbarium shall continue as a contemporary resource, to be developed as resources allow.
- e) Herbarium resources shall be loaned only following adequate guarantee for their safe keeping and return is received.
- f) The reference library shall continue as both a contemporary resource and an archive, for the use of staff and students.

C.3.4 The Aviary

The Aviary is an historic amenity within the Botanic Garden which provides both an educational facility and recreational resource. The Aviary is a contributing member of a national captive breeding programme for native birds administered by the Department of Conservation.

The Aviary collection is managed by a Curator whose training and expertise recognises the specialised requirements of the collection. While the existence of an aviary within a botanic garden is not a common phenomenon, in Dunedin this provides the Garden with a unique and valuable resource.

The techniques and mechanisms used in managing the national captive breeding programme (including the national species coordination responsibility for Kea (*Nestor notabilis*)) are the same as those required for rare and endangered plant conservation networking. There are many other correlations between the management of the Aviary and the plant collections, which can often provide enhanced education opportunities (eg being able to closely associate Australian birds and their food plants).

Objective

To ensure that the Aviary provides for optimum presentation and interpretation of its bird collection to the public, while protecting the birds' welfare.

Policies

- a) The Aviary shall continue to be an integral part of the Botanic Garden.
- b) The captive breeding programme for New Zealand endangered bird species shall be maintained and developed within the resources available.
- c) The Aviary shall continue to provide interpretive material for public education.
- d) Bird numbers and variety of bird species shall be managed to provide for optimum public display within the resources available.
- e) Provision shall be made to ensure that the welfare of the birds is adequately catered for at all times.

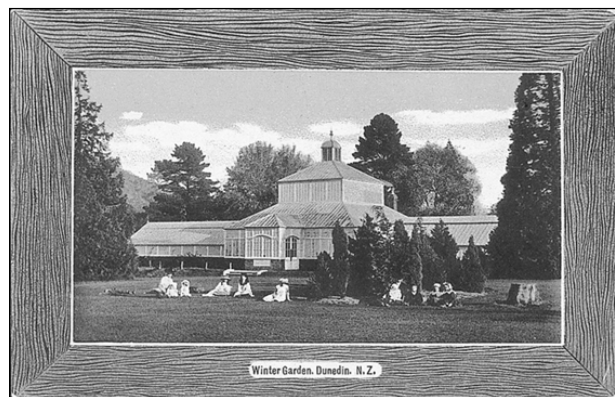
C.3.5 Heritage Features

As the first botanic garden in New Zealand, the Dunedin Botanic Garden has a long and varied history. Heritage features are of great importance to the cultural identity of the Garden. There is increasing recognition that these features represent a 'collection' in themselves, which requires interpretation for public appreciation and enjoyment.

Many of the features of the past have already been lost or redeveloped. In recent years, the need for identification, protection and appropriate maintenance of the remaining heritage features has become apparent.

This protection is provided in the case of the Bandstand, the Winter Garden and the Wolf Harris Fountain by the Dunedin City Proposed District Plan which lists them in its Schedule of Heritage Buildings and Structures, and by the New Zealand Historic Places Trust Category II listings afforded to these features. The removal or demolition of these structures is a non-complying activity under the Proposed District Plan.

A number of other Garden features are of historic or cultural significance. These include the Tannock's House (Curator's Residence); various other fountains, statues and monuments; various plantings such as one of the original 'Royal Oaks' planted in 1863; ornamental features such as the Knot Garden, Cherry Walk, and Garden's Corner Gates; and landscape constructions such as the Rock Garden.



Winter Garden, 1912

The full list of heritage features of the Garden is given in Appendix 1. As well as this method of identification, these features are accorded appropriate protection through the policies listed below.

Objective

To ensure that all of the Garden's heritage features are identified, accorded the appropriate level of protection, and maintained to ensure preservation and presentation for the enjoyment and education of the public.

Policies

- a) Heritage features in the Garden shall be identified in Appendix 1 of this management plan.
- b) Heritage features will be maintained in a timely manner and to a historically relevant condition, as resources permit.
- c) Heritage features and their history shall be interpreted for public information.
- d) Any development work done on items listed as Heritage Features by the New Zealand Historic Places Trust will be sympathetic to their historic context, and will be done in liaison with the New Zealand Historic Places Trust.

C.3.6 Buildings and Structures

The Botanic Garden has a variety of buildings and structures of both aesthetic and functional purpose. The buildings range from the purely functional propagation and administration area in the Upper Garden, to the Winter Garden in the Lower Garden, which has both aesthetic and functional characteristics. A number of other buildings are also present, including the Information Centre and Shop, the Aviary, the Botanic Garden Centre, Tannock's House, 36 Opoho Road, the Bandstand and the Café. Other structures such as benches, fences and bridges have a functional focus. Where designed appropriately, they can also have considerable aesthetic value.

It is important that buildings and structures do not detract from the Garden's overall character and beauty, or its role as a recreation reserve. Section 53 of the Reserves Act 1977 gives the Council the discretion to erect "*buildings and structures for public recreation and enjoyment associated with and necessary for the use of the reserve*". The provisions of the Dunedin City Transitional District Plan (Dunedin section) and the Dunedin City Proposed District Plan 1999 complement these provisions.

The Transitional District Plan permits buildings in the Recreation Zone for storage, toilets, change rooms, observation of wildlife, caretaker's residences, spectator shelters and temporary entertainment purposes. Other buildings associated with recreational activities require resource consent.

The Residential 1 Zone of the Proposed District Plan permits buildings for residential purposes or recreational activities if the floor area does not exceed 25 m². Buildings for community support activities, which includes education, and recreational structures where the floor area exceeds 25 m², require resource consent. Under the Urban Landscape Conservation Area provisions, consent is required for the erection of any structure more than 20 m² in area or 5 m in height, and the application is assessed in terms of the impact on the landscape qualities and character of the setting.

All buildings or structures require building consent under the Building Act 1991.

Objective

To ensure that the buildings and structures of the Garden achieve their functional purpose without detracting from the overall character and landscape values of the Garden.

Policies

In addition to the requirements of the Dunedin City Transitional District Plan (Dunedin section), the Dunedin City Proposed District Plan 1999, and the Building Act 1991, evaluation of any building proposal will consider the following:

- a) New buildings and structures shall be designed in such a way as to minimise the visual impact on the general character of the Garden.
- b) New buildings and structures proposed for the Garden will be the subject of public consultation by the Council, unless already notified through the management plan for the Garden.
- c) Where possible, existing buildings and structures shall be upgraded and maintained to be sympathetic to the heritage character of the Garden.

- d) Fences shall be erected where possible to provide physical barriers to entry during the hours of darkness, and these shall be constructed and maintained to a standard that does not detract from the heritage character of the Garden.



Wolf Harris Fountain, 1995

C.3.7 Ducks and Seagulls

The Garden is home to a wide variety of bird species, which generally add to the enjoyment of the public, especially the native birds that frequent the bush and tree areas of the Garden. While being a focal point for some visitors to the Lower Garden, particularly young children and their parents, the duck population has in the past caused problems for Garden management and the comfort of visitors.

The duck population has increased to a point that is often detrimental to ornamental plantings, the lawns, the state of the pathways, and the general hygiene of the area of the Lower Garden. This problem is identified by a number of visitors to the Garden, and is of concern to many of the groups and societies that are associated with the Garden. The feeding of the ducks by visitors is the critical factor in managing the effects of the birds on the Garden's presentation. In recent years a great deal of planning has centred around mitigating these detrimental effects by managing where and how people feed them.

The Garden has developed an approach to mitigating the worst effects by:

- designing and installing ornamental fences to place around and protect the vulnerable plantings; and
- encouraging the public to feed the ducks in a particular area, namely the paved area at the east end of the duck pond, where cleaning of the paving can be programmed regularly.

The activity of feeding the ducks, together with the proximity of the Café, has combined in recent years to encourage a large population of seagulls at certain times of the day when large numbers of people are present. These birds have a much more aggressive and disruptive influence than the ducks, with an increased danger of fouling from the air as well as on the ground.

Despite extensive research, the seagulls are a much more difficult prospect. There will be ongoing efforts to develop solutions consistent with the other values of the Garden. It is important that any potential solution strikes a balance between public enjoyment of the Botanic Garden, legal requirements, and the welfare of other bird life.

Objective

To address problems caused by the ducks and seagulls in the Lower Botanic Garden in a manner that preserves both the enjoyment of the public and the needs of the Garden.

Policies

- a) A solution shall be sought that will enable the seagull population problem to be controlled and the appropriate solution will be implemented as resources permit.
- b) The methods for managing the detrimental effects of duck population and feeding will be reviewed to assess their effectiveness and improved where possible.
- c) Any methods used to manage the detrimental effects of ducks and seagulls will have regard to public enjoyment of the Botanic Garden, relevant legal requirements such as the Wildlife Act 1953, and the welfare of other bird life.

C.3.8 Pest Control

The taking of any animal, including dogs, into the Botanic Garden is a prohibited activity under Bylaw 10 (Appendix 4). However, certain animal species may introduce themselves or be liberated into the Garden. In some cases these species may be considered harmless, but in other cases they may be considered pests and their presence in conflict with the aims and objectives of this management plan.

Examples of species that may be considered pests within the Garden include the opossum, rat, stoat, weasel and ferret. These and certain other animal species are declared as unprotected species throughout New Zealand under the Wildlife Act 1953.

Section 50 of the Reserves Act 1977 permits the Council to authorise the take and kill of any kind of fauna within the Garden, and the use of firearms, traps, nets or any other like object to do so. This function is not to be in contravention of the Conservation Act 1987 or the Wildlife Act 1953.

Objective

<i>To control animal pest species occurring within the Garden.</i>
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Policies

- a) The Dunedin City Council may permit the taking and killing of any animal species considered a pest species within the Garden, as long as this is conducted in a humane manner.
- b) Any methods used to manage the detrimental effects of pest species will have regard to public enjoyment of the Botanic Garden, and relevant legal requirements such as the Wildlife Act 1953.

C.4 Use

C.4.1 Public Use

As a recreation reserve, the Botanic Garden is freely open to the general public. Indeed, the public are encouraged to utilise such reserves for their 'physical welfare and enjoyment'. Amongst the many recreation reserves of Dunedin, the Botanic Garden is unique. Its purpose goes beyond the provision of amenity and defines its use. It is a place for display, and the quality and integrity of its display determines the public appeal and utility.

For those who seek greater knowledge of the sciences of horticulture, botany and ecology, the Botanic Garden is a natural, living resource. Similarly, those seeking enjoyment and education in horticultural practice and the art of garden design will expect to find expression of their disciplines in the design of the Garden and treatment of its contents. The degree to which the Garden is fulfilling these purposes defines the extent to which it deserves the title 'Botanic Garden'.

Objective

To ensure that public use is appropriate to preserve the character of the Garden and of benefit to the botanical functions of the Garden.

Policies

- a) Appropriate uses for the Garden shall be determined by the following criteria:
 - i) The activity shall pose no physical threat to the plant collections.
 - ii) The activity shall not hinder the staff in the execution of their normal duties.
 - iii) The activity shall not detrimentally affect the layout of the Garden.
 - iv) The activity shall pose no threat to the safety of other users.
 - v) The activity shall not detract from the enjoyment of other users, including visual changes, changes in noise levels, or smell.
 - vi) The Dunedin City Council shall retain discretion over the total number of attendees that any event seeks to attract.
 - vii) The Dunedin City Council shall retain the discretion to set terms and conditions to any activity that either require provision to be made for public insurance of any activity and/or reparation to be provided in the event of any damage to the Garden.
- b) Cultural events shall be encouraged, but shall be subject to the permission of Dunedin City Council and those criteria listed in Policy C.4.1(a) above.

C.4.2 Recreational Use

The defined purpose of a recreation reserve includes "... *recreation and sporting activities ... physical welfare and enjoyment ... protection of the natural environment ... with emphasis on the retention of open spaces; and on outdoor recreational activities ...*" (section 17, Reserves Act 1977). However, terms such as 'sporting activities' and 'outdoor recreational activities' suggest permitted activities that conflict with management objectives for the Garden.

In line with the trend in recent years to expand the definition of 'recreation' activities, the emphasis within the Garden lies on more passive forms of recreation (eg observation and interpretation of plants and birds, or sitting and reading). Apart from the more active recreation pastime of walking, passive recreational use is more compatible with the character of a botanic garden and is thus emphasised in this management plan.



Bandstand, from above the Rock Garden

This management plan sets parameters to recreation that encourage uses which enhance and draw upon the function of the Botanic Garden and discourage uses which detract from it. Any limitations on recreation activities are made for the benefit of other users of the Garden. Control over recreational and other activities within the Garden is provided by City of Dunedin Bylaw Part 10 (Reserves), which is set out in Appendix 4.

Objective

<i>To encourage recreational use which is compatible with the purpose of the Garden.</i>
--

Policies

- a) The functions and purposes of the Botanic Garden, as set out in this management plan, shall continue to be promoted to increase public understanding and awareness.
- b) Public awareness of those activities which are and are not compatible with the horticultural and botanical emphasis of the Garden shall be increased.
- c) The following recreational activities shall be prohibited in any part of the Botanic Garden (refer Bylaw Part 10 in Appendix 4): camping; the use of barbeques and the lighting of fires; organised sport⁶; use of firearms or fireworks; flying of model aircraft; the playing or practice of golf; use of any recreational vehicle (refer also Policy C.5.2(a,b)); riding of horses; exercising of dogs or any other animal (refer City Bylaw Part 5 Control of Dogs).

⁶ The exception to this is the Opoho Bowling Club, which holds a lease over part of the Botanic Garden adjacent to Lovelock Bush.

- d) Musical performances shall be permitted in the Lower Garden Bandstand, upon approval from the Dunedin City Council. These performances shall be assessed to ensure that they do not cause damage to the area or detrimentally influence the passive enjoyment of the Garden by other users. Musical performances must comply with Bylaw 10.10 (h) (Appendix 4).

C.4.3 Tourism and Promotion

In recent years, Dunedin has enjoyed an increasing number of both domestic and international visitors. Results from the Dunedin Summer Visitor Survey for 1998 showed that 27% of visitors to Dunedin indicated that they intended to visit the Botanic Garden (although it is likely that actual attendances are not as high as this). Visitors from other parts of New Zealand, Australia, United Kingdom and Germany were more likely to be intending to visit the Botanic Garden, with visitors from Japan, Taiwan and North America less likely. These figures are probably related to length of stay, with the latter groups tending to stay fewer nights in Dunedin.

The Botanic Garden should be promoted to both individual visitors and organised tours as a significant regional and national resource. Coordination of promotional efforts should be carried out in close liaison with the Dunedin Visitor Centre, Tourism Dunedin and other tourist organisations to ensure maximum benefit for both the Garden and Dunedin as a whole.

The Information Centre is the primary resource for promoting the Botanic Garden, providing maps and brochures and other resource information materials to visitors. The Information Centre Shop is managed and staffed by volunteers from the Friends of the Botanic Garden. The shop provides a range of souvenirs and local products to visitors, along with advice and direct personal contact.

Objective

To promote the Botanic Garden as one of Dunedin's premier visitor attractions, and to increase the number of visitors to the Garden.

Policies

- a) The Garden shall be actively promoted as a premier destination for visitors to Dunedin, in conjunction with the promotion activities of tourism promotion organisations.
- b) The Garden will endeavour to cater for the needs of all visitors.
- c) Appropriate promotional material such as brochures shall be produced on both botanical and heritage aspects, and information made available to tourism publications and other tourism promotion organisations.
- d) The Rhododendron Festival shall continue to be supported and promoted as an event of national prestige.
- e) Other opportunities to enhance promotion of the Botanic Garden shall be supported, as long as they do not conflict with the character and purpose of the Garden.

C.4.4 Education and Interpretation

Education about plants and their habitats, including the interpretation of their qualities and value, is an important function of a botanic garden. The Dunedin Botanic Garden has a triple educational focus. It supplies educational and interpretive material to the public, provides a school education service (LEOTC), and is host to the Otago Polytechnic Horticultural Trainee Course.

Horticulture Training Course

This partnership with the Otago Polytechnic, in place since 1993, provides both parties with a mutually beneficial arrangement with a positive future for expansion. There are potential benefits to the Garden in having a skilled labour pool from which future staff may be hired.

The current agreement involves student clients of the Otago Polytechnic in a working relationship with the staff of the Botanic Garden whereby the students receive practical training. The students are under direct supervision of staff trained to provide the appropriate instruction. The partnership currently offers a one year horticulture course, a two year course for plant collection management, an arboriculture course and a newly introduced course for nursery production. The Otago Polytechnic operate these courses from leased premises (the Botanic Garden Centre and 36 Opoho Road) in the Botanic Garden where the classrooms and administration facilities are located.

Learning Experience Outside the Classroom Contract (LEOTC)

Since 1998, the Botanic Garden has also provided educational programmes for primary schools throughout Otago as part of a LEOTC contractual relationship with the Ministry of Education. This contract includes employment of an experienced teacher to design and deliver the programmes as part of the school curriculum. This service is extremely well patronised by local schools, to the extent that the Ministry has extended the contract term to January 2001.

Educational and Interpretive Material

This is provided on five levels:

- An Information Centre staffed by volunteers provides long term and seasonal information displays on all aspects of the Garden, maps, brochures and other promotional and informational material
- Notice Boards, providing information for the Garden as a whole
- Information Boards, providing information on particular areas of interest within the Garden
- Individual Plant Labels, providing information on the nomenclature and natural habitat of individual plants
- Brochures providing more specific information on features of interest, trails and layout of the Garden.

Other educational and interpretive mechanisms supplied by the Garden include the information services provided by the Information Services Officer and Botanical Services Officer; answering of general inquiries from the public by Garden staff; articles (such as the 'Botanic Forum' in the Otago Daily Times); seminars (presented to various interest groups and horticultural societies) by Garden staff; displays at horticultural shows and events; regular horticultural demonstrations at the

Information Centre; organised tours of the Botanic Garden; and staff involvement in local radio and television garden programmes. The Friends of the Botanic Garden provide an integral role in the distribution of information to the many and varied interest groups involved with the Garden.

The Garden also provides opportunities for research institutions (such as the University of Otago, Landcare Research, Crop and Food, and AgResearch) in the Dunedin area. The many and varied plant species in the Garden are an important resource for research, and research institutions are encouraged to utilise this resource. In addition, the Garden fulfils an important role in teaching support for the Botany Department of the University of Otago.



Linda Hellyer, Curator of Herbaceous Plant Collection, giving talk

Objective

To maintain a consistently high standard of interpretive and educational material and a strong investment in horticultural training.

Policies

- a) The Horticultural Training Courses of the Otago Polytechnic shall continue to be supported as an educational activity within the Garden. Garden staff will continue to supervise 'practical experience' for its student clients.
- b) Use of the Garden as an educational facility for schools, tertiary institutions and the general public shall be encouraged.
- c) Educational and interpretive material shall continue to be developed and maintained at a standard that is accurate, up to date and accessible.
- d) A close relationship shall continue to be maintained with the Friends of the Botanic Garden and other specialised groups associated with the Garden.
- e) The botanical resources of the Garden shall be freely available for research purposes that do not detract from the aims and objectives of the Garden. Resulting data will be made available to the Botanic Garden and its users.

C.4.5 Commercial Activities

At present the operation of the Café and the Otago Polytechnic Horticultural Course are the only fully commercial activities permitted in the Botanic Garden. These functions are compatible with the type and pattern of public use and enjoyment of the Garden, and with the educational and industry training role that the Garden fulfils. Note that contractual works commissioned by the Botanic Garden Business Unit are excluded from this section, and covered in Section C.2.4.

To not compromise the management aims of the Botanic Garden, the number of commercial activities permitted at any one time must be limited. Any long term commercial activity needs to be assessed as to its likely impact on the integrity, patterns of public use and enjoyment of the Garden before permission is granted. The most important aspect to consider is the mitigation of any adverse effects on the physical and social environment of the Garden.

Commercial activities undertaken by non-profit organisations are often beneficial to the Garden. One example of this is the Information Centre Shop managed by the Friends of the Botanic Garden, which is a non profit venture of direct support to the Botanic Garden. Another is the novelty train run by CREST (Children's Recreation Enterprise Support Trust). Both of these activities are controlled by memoranda of agreement with the Botanic Garden Business Unit. Any such activity remains the organisation's responsibility and must comply with the policies of this plan.



Information Centre and Friends of the Botanic Garden Shop, 1996

Objective

To permit commercial activities that do not conflict with the botanical and recreational functions of the Garden.

Policies

- a) Commercial activities within the Garden shall be considered on the following criteria:
 - i) There are no detrimental effects on the character or functions of the Botanic Garden;
 - ii) There are no detrimental effects on the public use and enjoyment of the Garden;
 - iii) The level of service provided to the public; and
 - iv) The relevant provisions of the Proposed District Plan.
- b) Only those commercial activities that have received the prior approval of the Dunedin City Council shall be permitted.

- c) The following activities will be allowed on the reserve and formalised by way of a lease pursuant to section 54 of the Reserves Act 1977:

<i>Activity</i>	<i>Site</i>
Cafeteria	<ul style="list-style-type: none">• Tea Kiosk, Lower Garden• Botanic Garden Centre• 36 Opoho Road• Lovelock Bush
Educational Training	
Bowling Club	

- d) Any new leases granted for commercial activities within the Garden will require the consent of the Council.
- e) All commercial activities may have fees or rents charged in accordance with Council policy.

C.4.6 Residences

Section 53(1)(k) of the Reserves Act 1977 allows the administering body of a recreation reserve to set aside and use any part of that reserve as sites for residences for officers, or for other buildings considered desirable or necessary for the proper management, protection and maintenance of the reserve.

The Botanic Garden has within its boundaries a staff residence, the historic Tannock's residence in the Upper Garden, which is now rented by a Garden staff member. This is of benefit to the Garden in that it provides much needed security, and augments the management of the Garden by providing an after hours back up and contact person. Another former residence at 36 Opoho Road is leased to the Otago Polytechnic Horticulture Department, as part of their student training facilities.

Objective

To ensure that the residences within the Garden are maintained and occupied to augment management objectives.

Policies

- a) Residences within the Garden may be rented to staff for improving security and for furthering other management objectives of the Botanic Garden.
- b) Where staff rental is not appropriate or desirable, the residence may be occupied and/or utilised for purposes appropriate to the functions of the Botanic Garden, subject to Dunedin City Council approval, and provided that a revenue based on commercial rates of return shall be applied. Refer also to Policy C.4.5(d), (e), and to Reserves Act 1977 compliance.

C.5 Access

C.5.1 Hours of Access

The Garden has assets of considerable value including rare and endangered plants within its collections. Combined with the ever-present problem of vandalism and pilfering of plants, this necessitates security measures such as the restriction of access during the hours of darkness. In accordance with the City Bylaws (see Appendix 4), access to the Lower Garden is restricted during the hours of darkness. This is made possible by the existence of a perimeter fence.

Restricting access during the hours of darkness to the majority of the Upper Garden has not been possible to date. As a result, many important features of the Garden are afforded only the superficial security of alarms for buildings and patrols by contracted security personnel to check the main structures, gates and facilities.

Objective

To provide appropriate security for the Garden by restricting access during the hours of darkness.

Policies

- a) Access to the Lower Garden shall be restricted during the hours of darkness in accordance with the Dunedin City Council Consolidated Bylaw 1991, Part 10.2(b).
- b) The restriction of access to the Upper Garden during hours of darkness will be provided for, as resources allow.

C.5.2 Vehicle Access, Parking and Pedestrian Safety

There is potential conflict between vehicle access and parking and the concept of the Garden as a safe, enjoyable pedestrian precinct. This plan considers that access for vehicles of any type must be kept to a minimum, with appropriate speed restrictions. Bicycles, skateboards and rollerblades are considered to be vehicles, in line with the definition of 'vehicle' under the Land Transport Act 1998. When carefully designed and controlled, limited vehicle access for approved purposes can be achieved without conflict or detracting from the overall character of the Garden.

Vehicle access is limited to the entrance off Cumberland Street (State Highway 1) via the car park area in the Lower Garden and two entrances off Lovelock Avenue. Vehicle access into the Garden is usually limited to goods and services vehicles (scheduled to avoid peak public use times) and maintenance vehicles, plant and machinery essential for the upkeep of the Garden.

People with mobility problems can, with prior approval, gain access by vehicle when visiting the Garden. It is practice to allow a vehicle to transport these people (observing all speed restrictions and giving pedestrians right of way at all times) to enter the Lower Garden and drive around the asphalted driveways to view displays or deliver them to facilities.

Approval has also been given since 1993 for the children's charitable organisation CREST to operate a tractor powered 'train', the *Community Express*, to take passengers along a prescribed route in the Lower Garden at peak times during holidays. This is a formal agreement with specified conditions for the operation and use of this visitor service.

Car parking is adequate for general use but can be inadequate during special events or at peak flowering time of displays such as rhododendrons, particularly in the Upper Garden where street parking is limited.

Objective

To promote the concept of the Garden as a pedestrian only precinct, with any vehicle access and car parking provided being consistent with the character and atmosphere of the Garden.

Policies

- a) Private vehicle access into or through the Garden shall not be permitted, except to access car parks or in the case outlined in Policy C.5.2(d) below.
- b) For the purposes of this management plan, the term 'vehicle' shall include bicycles, skateboards, rollerblades and other wheeled recreational devices.
- c) Where possible, suppliers of goods and services shall be required to schedule deliveries to avoid peak visiting times.
- d) Private vehicle access for the purpose of conveying people with mobility problems shall be permitted, with prior approval from the Dunedin City Council.
- e) Car parks, driveways, and speed restriction and other traffic notices shall be maintained to provide service whilst not detracting from the overall character of the Garden.

- f) Transportation services operated for charitable purposes may be permitted within the Garden with the approval of the Dunedin City Council.

C.5.3 Pedestrian Access

The maintenance and development of a network of paths and tracks that provide access to all areas is essential for visitors to experience fully the Garden and its attributes. It is important that the paths provide for people to access special plants or particular collections or appreciate views across the Garden. It is also important that Garden walks be developed and assessed for all visitors including older people and those with disabilities.

The Garden has a well developed network of paths and tracks, many of which are heritage features, for example the Cherry Walk (1917). Pathways that receive heavy pedestrian traffic, such as those of the Lower Garden, have been asphalted to cope with constant use. Paths elsewhere in the Garden have a variety of surfaces that are both sympathetic to the character of the area they pass through, and practical for the terrain and micro climate (eg wood chips and boardwalks under the bush canopy and gravel on the steeper slopes and less used tracks).

Objective

To ensure that pedestrian access is provided to all areas of the Garden, and to endeavour to clearly identify all paths unsuitable for those with limited mobility.

Policies

- a) A network of paths and tracks shall be provided that allow public access to all areas of the Garden.
- b) Where the need arises, access shall be prohibited to areas needing repair or special care by the closure or part closure of any track.
- c) Where possible, path surfaces shall reflect the character of the area it passes through and shall also reflect the level of usage the track receives.
- d) Tracks and ramps shall be provided that allow access for older persons and people with disabilities, wherever resources and terrain permit.
- e) To the extent that resources permit, clear information shall be made available where tracks are unsuitable for users with limited mobility.

C.5.4 Charges and Fees

As a Council recreation reserve, the Botanic Garden must allow free access to all. Entry charges would contradict the management aims of this document, which encourage public appreciation of and access to the Garden. This is recognised in the Council's Funding Policy, which states that the Botanic Garden provides a citywide public benefit.

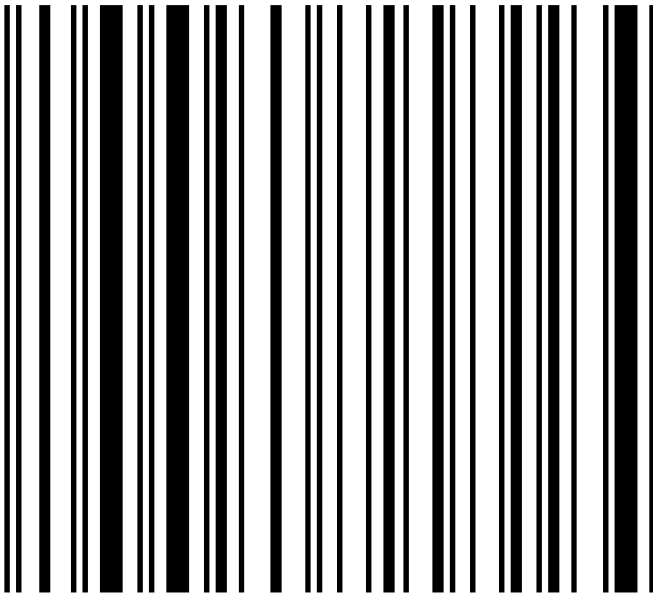
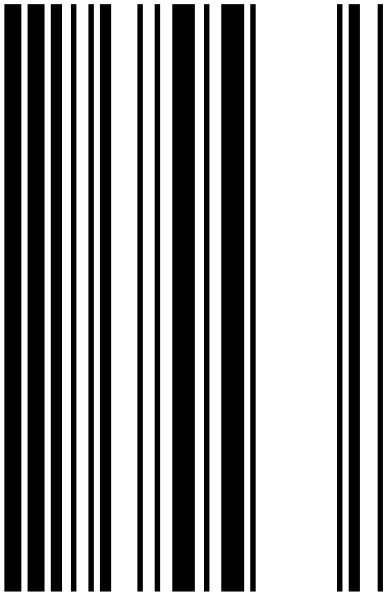
Some facilities within the Garden fall outside of the range of services normally supplied free of charge. The Botanic Garden Centre, while serving an important educational and interpretive role, is also utilised for meetings, seminars and presentations by various interest groups. These groups are to be charged for the use of these facilities.

Objective

To maintain free public access to the Garden as a whole, and set charges for the use of any facilities that are available for hire.

Policies

- a) No public entry fee to the Botanic Garden shall be charged.
- b) User groups will be charged according to the facilities used at the Botanic Garden Centre, or similar exclusive use facility, as set out in the Council's Annual Plan and subject to the framework laid out by the Council's Recreation Fees and Charges Policy 1999.



Appendix 1

Heritage Features Of The Dunedin Botanic Garden

- 1 Built in 1908, the **Winter Garden** was one of the first public conservatories in New Zealand. The Architect was Mr Wales of Mason and Wales (revising a plan originally presented by McKenzie and Moncur of Edinburgh). It was built by G Simpson and Co, and funded by Robert Glendinning and the Dunedin City Council. It was completely renovated and rebuilt along the lines of the original plan in 1990.
- 2 The present **Bandstand**, built in 1914.
- 3 The **Curator's Residence**, Upper Botanic Garden, built for David Tannock in 1904.
- 4 The **Tea Kiosk**, constructed in 1966 to resemble a sun umbrella. The Architect was George Spencer, with input into the concept by Superintendent Maurice Skipworth. It was built by Naylor Love and funded by the Otago Savings Bank.
- 5 **Garden's Corner Gates**, 1925.
- 6 The **Gore Place Gates**, originally a section of the new gates erected at the King Street entrance in 1960 and moved to the current site in 1986. The other section of the King Street Gates provides the entrance to the Rose Garden.
- 7 **Opoho Corner Entrance**. The gateway was constructed from material left over from the 1907 gates (the radial wings), and a surplus portion of the 1925 gates.
- 8 **Iron Railings along Great King Street**. These were removed from the Market Reserve (1929) and the Octagon (1930).
- 9 The **Pond** was a feature developed by the Otago Acclimatisation Society, who occupied the Garden site from 1864, for the breeding of exotic fish and water fowl. The **bronze plaque and trout** commemorate the release of trout into Otago streams.
- 10 The **Royal Oak** is one of the two trees planted on 30 June 1863 to commemorate the marriage of the Prince and Princess of Wales, marking the establishment of the Botanic Garden. The oak was one of the trees transplanted to the present Garden site in 1869.

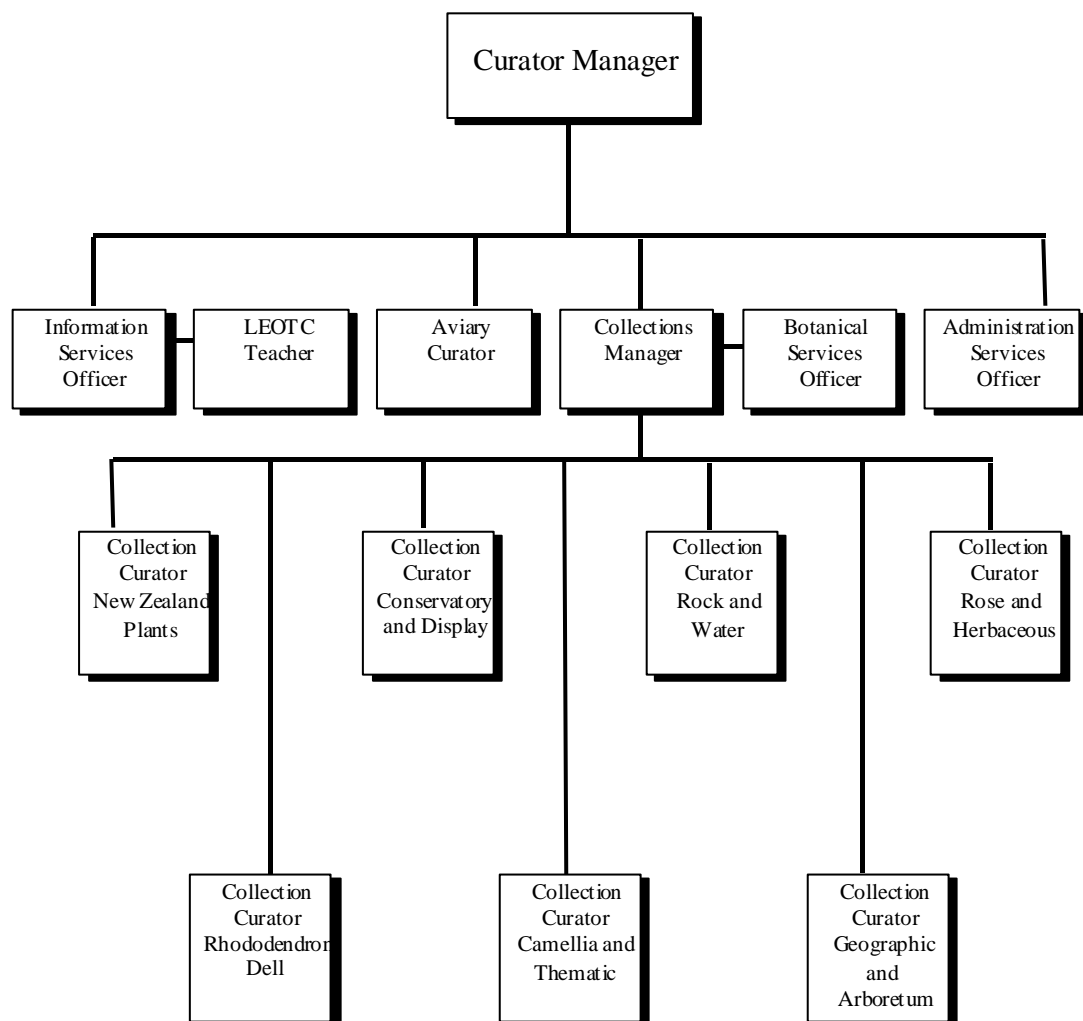


Bandstand, 1928

- 11 The **Wolf Harris Fountain** was donated to Dunedin City by Mr Wolf Harris in 1889 and was originally located in Queens Garden. The fountain arrived in the Botanic Garden in 1926 after having been a feature in the 1925/26 South Seas Exhibition. It has recently undergone a major restoration with the help of the Dunedin Amenities Society.
- 12 The **Knot Garden** was laid out in 1933 as part of a garden displaying plants referred to in Shakespeare's plays.
- 13 The **David Tannock Memorial** in the Rock Garden, 1965.
- 14 The '**Peter Pan**' statue donated by Harold Richmond in 1966, the '**Wendy**' statue also donated by Harold Richmond in 1968, and the '**Chippie Mk IV**' statue donated by Lieutenant PEJJ Jardine in 1999. All of these were sculpted by Cecil Thomas OBE.
- 15 **Friendship Seat** in the Geographic Borders, gifted from Portsmouth, Virginia in 1969.
- 16 The **Sunken Garden** (the paved terraces) now displays the Herb Plant Collection. It was gifted to the Botanic Garden for an iris garden in 1948 by the Dunedin Horticultural Society, to celebrate the centenary of the City.
- 17 The **Aviary** was relocated to its present site in the Upper Garden in 1986. It is the last remaining link to the Otago Acclimatisation Society, which began collecting birds and other fauna on the Lower Garden site in 1864.
- 18 **Botanic Garden Entranceway Sculptures and Artwork**, 1999, Artist Stuart Griffiths, and funded by Alexander McMillan Trust, Creative New Zealand and the Friends of the Botanic Garden.

Appendix 2

Botanic Garden Business Unit Management Structure



Appendix 3

Chronology Of Development

Establishment (1863-1902)

- 1863-66: **Alexander Begg** Gardener of the Recreation Grounds 5 January 1863.
- 1863: 30 June - First official recorded planting on University site (Royal Oaks).
- 1866: Control transferred to Dunedin City Council from Provincial Government.
- 1866-67: **Mr Joseph Hooper** Gardener.
- 1868: Control returned to Provincial Government, as upkeep was too costly for Dunedin City Council.
- 1868: Leith Stream floods University site and Garden relocated to present Town Belt location (Acclimatisation Society site from 1864 to 1868).
- 1868-84: **Alexander McGruer** Provincial Gardener and Curator.
- 1869: George Scott's plan wins competition for design of Lower Garden.
- 1870: First use of prison labour.
First recorded exchange of plants with Melbourne Botanic Garden, Australia.
- 1876: Abolition of Provincial Government leads to the setting up of a Domain Board controlled by the Colonial Government. Report on the Garden by Board leads to fencing of Lower Garden.
- 1884: Dunedin City Council becomes the Domain Board in terms of administration of the Garden.
- 1884: **John Fairbairn** Foreman Gardener.
- 1884-1902: **John McBean** Foreman Gardener.
- 1885: First Horticultural Apprenticeship positions appointed.
- 1886: Colonial Government subsidy removed.
Propagation facility improved.
- 1891: Prison labour ends.

1896: Fernery built.

1899: Otago Acclimatisation Society builds an Aviary in the Lower Garden.

Transformation (1903-1940)

1903-40: *David Tannock* Superintendent of Reserves.

1903: Tannock's first report on the Garden, which deplored the state of much of the Garden and outlined some of the potential for development.

1904: Propagation area moved to Upper Garden.
Rock Garden begun.
Main entrance changed from King Street to North East Valley end of Garden.

1905: Australian Border begun.

1906: Formalised seed exchange begun with overseas botanical institutions.
Rare Plants Border begun.

1907: Iron gates erected at North Road (Lower Garden main gate) entrance.

1908: Original Winter Garden built.

1909: Bamboo and Flax Collection begun.

1905-11: Expansion of Rose Garden, Iris Garden and Native Collection.

1911: Maze planted in Lower Garden.

1912: Orchid House added to Winter Garden.

1914: Rhododendron Dell begun, with the first 500 plantings.
Shakespeare Garden begun.

1916: Cottage garden begun.

1921: Azalea Garden begun.
Native collection organised into systematic borders.
Hebe collection added to Native Borders.

1922: Native Flax collection added to Native Borders.

1923: Maze relocated to Upper Garden following floods.

- 1926: Fernery replaced by a structure from the South Seas Exhibition.
Wolf Harris Fountain relocated from Queens Garden, after being used at 1925/26 South Seas Exhibition.
- 1928: Dwarf Rhododendrons added to the Dell.
- 1930: Cottage Garden removed.
- 1930s: Depression leads to use of relief labour for track development in Upper Garden.
Lindsays Creek widened and deepened, and rock walls built.
- 1940: David Tannock retires.

Decline and Renewal (1940-1970)

- 1940-68: **Maurice Skipworth** Superintendent of Reserves.
- 1939-45: World War 2 leads to labour shortages as energy and money is diverted to the war effort, resulting in the grassing over of many of the bedding plots and closure of Winter Garden.
- 1948: New Aviary established in the Lower Garden, and new Iris Garden begun, to commemorate Otago Centenary.
- 1952: New Headquarters built in Upper Garden using demolition materials from Littlebourne House.
Azalea Garden redesigned.
- 1950s: Upgrading of Aviary, including the addition of monkeys and native birds.
Development of new Rhododendron hybrids.
- 1962: New Fernery built.
- 1963: Sun Terrace added to Winter Garden.
- 1966: Tea Kiosk built.
- 1968-83: **Gavin Henderson** Superintendent of Reserves/Director of Parks.
- 1969: First Index Seminum prepared.

Redevelopment and Expansion (1970-present)

- 1974: Curator appointed - **Norman Richan**.
- 1979: Botanist appointed - **Alison Evans**.

- 1982: Visitor Education Centre completed.
- 1983-Present: **Mick Reece** Curator Manager.
- 1986: Relocation of Aviary to Upper Garden.
New Alpine House built.
Camellia Borders begun.
- 1987: Herb Garden established in former Sunken (Iris) Garden.
- 1988: Rose Garden redesigned and refurbished.
- 1989: Local Government Reform leads to the introduction of the “client/contractor” relationship and a separation of function for the Garden.
Renovation of Bandstand.
- 1990-91: Completion of Stage One of the renovation of the Winter Garden.
Children’s Play area relocated to Bandstand area.
- 1991: Dunedin City Council Parks and Recreation yards removed and replaced with car park.
Client/contractor relationship redefined, leading to new management structure.
- 1992 Native Wetland Garden established.
Thematic Borders begun.
- 1993 Otago Polytechnic Horticultural Training Course started in Botanic Garden Centre, in conjunction with the Botanic Garden.
- 1995 BG-Base plant records system installed.
Aviary - New Zealand Parakeet flight built.
- 1996 Botanic Garden becomes a Business Unit of the Dunedin City Council.
Information Services Officer position established.
Information Centre and Shop opened in Lower Garden from funds raised by the Friends of the Botanic Garden.
Visitor Guide and map updated.
- 1998 Otaru Teien constructed in Lower Garden pond.
Learning Experiences Outside the Classroom contract with Ministry of Education.
Hedge around Herb Garden replaced with hardwood fence.
Rock Garden extended around *Pinus radiata* tree.
Edward Theomin Bridge installed across Lindsay Creek, funded by Perpetual Trust.

- 1999 Entranceway at the Garden's Corner redeveloped with funding from the Alexander McMillan Trust as a 150th project - designed by artist Stuart Griffiths.
Clive Lister Garden opened - a bequest from Professor Clive Lister.
Botanic Garden linked with Dunedin City Council computer network.
Shanghai collection of Chinese Plants begun.



**Botanic Garden Entranceway Sculptures Capitals and Braidwork,
by Stuart Griffiths**

Appendix 4

City Of Dunedin Bylaws, Part 10 (Reserves)

10.1 Meaning of Reserve

The expression 'reserve' in this bylaw means any open space, plantation, park, garden or ground set apart for public recreation or enjoyment and under the management or control of the Council whether or not dedicated as a reserve under the provisions of the Reserves Act 1977.

10.2 Access to Reserves

- a) No person shall enter or leave any enclosed reserve except through the openings, gateways, entrances or exits provided for the purpose, and all gates shall be left open or closed as they are found.
- b) No person shall enter or remain on any reserve if the reserve has been closed by the Council.
- c) Any person using any reserve shall obey all lawful directions given by any person authorised in that regard by the Council and contained in signs caused to be placed in or around the reserve by the Council.

10.3 Vehicles and Horses in Reserves

- a) No person shall drive or ride any vehicle whether motor powered or otherwise or drive, ride or lead any horse or other animal (except a dog being exercised in accordance with Part V of this bylaw) on any part of any reserve except upon parts of which have been clearly set aside for such purposes.
- b) Where any part of a reserve has been set aside for the purposes set out in 10.3(a) the Council may by resolution publicly notified prescribe the speed limit that shall apply to such parts and make other rules for the orderly conduct of traffic and parking. Where no speed limit has been fixed by resolution, no person shall drive or ride any vehicle on that part of the reserve at a speed in excess of 20 kilometres per hour.

10.4 Waste of Water

- a) No person shall cause or permit wastage of any water supply on any reserve or permit any tap or shower on any reserve to run for any longer period than reasonably required.
- b) No person shall in any manner pollute any water on any reserve.

10.5 Fires Prohibited

No person shall light or cause to remain alight any fire within any reserve except within an incinerator or barbecue provided by the Council for that purpose.

10.6 Damage to Reserves

- 1 No person shall do anything that causes any damage to any part of a reserve including the ground surface of the reserve, any plants in the reserve, and any building, structure or fixtures thereon.
- 2 No person shall disturb any soil, uproot any plant, or take any cutting or interfere with, pick or remove any flowers, fruits, seeds, pods, cones, ferns, greenery or other foliage.
- 3 No person shall walk on, drive on, ride on or do any other thing that causes damage to any plantation, flower bed, border or lawn.

10.7 Assembly

No person shall without the prior permission of the Council hold or conduct or take part in or attempt to hold, conduct or take part in any public meeting, assembly, or gathering of any kind within any reserve.

10.8 Organised Sport

Organised sport may take place only on reserves or part of reserves set aside for that purpose or as directed or permitted by the Council and upon payment of any fee fixed by the Council.

10.9 Unseemly Behaviour

No person shall, on any reserve, wilfully obstruct, disturb, annoy or interfere with any other person in the use or enjoyment of the reserve, or use any foul, abusive, indecent or obscene language, or be intoxicated or under the influence of drugs, or noisy or riotous, or in any way misbehave.

10.10 Prohibited Activities

- 1 The activities listed in subclause (2) of this clause are prohibited on all reserves unless either:
 - a) the Council has resolved that the activities shall be permitted on all reserves or on any particular reserves; or
 - b) the person or persons engaging in the activity have written permission of the Council to undertake the activity. Such written permission may be limited by condition including the charging of fees, as to time and as to which reserve it applies.
- 2 The prohibited activities referred to in subclause (1) of this clause are:
 - a) Taking onto any reserve and the use on any reserve of any firearm, airgun, bow and arrow, fireworks, catapult or other weapon or device of a dangerous character.
 - b) The flying of model aircraft.
 - c) The playing or practice of golf.

- d) The erection of stalls, tents, camps, swings, amusement devices or structures of any kind.
- e) Any trading other than in accordance with a Mobile Trading Licence specifically permitting trading in the reserve.
- f) Throwing sticks, stones or other missiles.
- g) The posting or distributing of notices and the erection of signs.
- h) The playing of musical instruments or sound reproduction equipment to the annoyance of others.
- i) Taking any animals (other than dogs in accordance with Part V of this bylaw) on to any reserve or permitting or suffering such animals to be on any reserve.

10.11 Waikouaiti Harbour Bylaw Preserved

Notwithstanding the provisions of 1.14, the Waikouaiti County Council Harbour and Foreshore Bylaw 1975 shall remain in force and effect after the commencement of this bylaw.

Appendix 5

Botanic Garden Management Plan Working Party

Membership of the Botanic Garden Management Plan Review Working Party is as follows:

Cr Peter Chin	<i>Chairperson</i>
Cr Elizabeth Hanan	
Josie Jones	Friends of the Botanic Garden
Eric Dunlop	Friends of the Botanic Garden
Karen Snaddon	Otago Polytechnic
Mick Reece	Botanic Garden Business Unit, Dunedin City Council
Alan Matchett	Botanic Garden Business Unit, Dunedin City Council
Alice Lloyd-Fitt	Botanic Garden Business Unit, Dunedin City Council
Margaret Fitzgerald	Botanic Garden Business Unit, Dunedin City Council
Michael Bathgate	Policy Analyst, Dunedin City Council