

economic importance to the city. The upgrading of adjoining city facilities, such as the Worcester Street Boulevard and the Arts Centre, has made it necessary that the Gardens is developed and maintained to an equivalent standard. Its standing as one of Christchurch's primary visitor attractions depends upon it.

Importance to New Zealand

In spite of some past deficiencies, the Gardens is a significant garden in the Australasian region and a crucial New Zealand botanic garden in terms of the range of its exotic plant collections. Overseas botanic gardens have, however, developed a significant range of new functions and roles over the last forty five years in a search for modern relevance, which has not been undertaken to the same degree in Christchurch, except in recent years. There is a need to assess the merit of these new developments in the Christchurch and New Zealand context.

Future directions

In the past, the approach for the Gardens has tended to avoid a strong botanical and indigenous emphasis, and make amenity and exotic horticultural plants the main features of its displays. The institutional side of the Gardens has not developed as strong a scientific function as some overseas gardens, although, in more recent years, this area has received more attention. There is a need to make use of outside botanical expertise, wherever possible, to bolster existing in-house skills. Strict record keeping, modern technology and information sharing with other botanical gardens are essential to enable the Gardens to keep up to date with new ideas and methods in areas such as plant conservation. The future appears to lie in taking the best elements of the Gardens (that is, its amenity appeal and variety of plant collections) and incorporating new elements that reflect world wide environmental concern, increased emphasis on New Zealand's natural/cultural heritage and cultural links with other areas of the world.

The existing resources (that is, the plants, structures and staff) that make up the Gardens have been, and are, subject to many influences and changes. There are three major, interrelated issues facing the Gardens today:

1. How to best develop the Gardens to further promote the world of plants (with due regard to the botanical imperatives of the late 20th and early 21st Century).
2. How to enhance, and meet, Christchurch resident's expectations and use of the Gardens.
3. How to appropriately enhance the Gardens value as one of Christchurch's primary attractions that is of major economic importance to Christchurch.

Part IV of this management plan serves to indicate how these issues, and others, can be addressed through the implementation of a set of actions.



PART III
MANAGEMENT GOALS, OBJECTIVES AND
POLICIES



Primary Goal: To promote understanding and appreciation of the world's flora, and its botanical and horticultural attributes and uses, including of Southern Hemisphere plants.

Comment: The Gardens is the most significant site in the city for the representation of a diversity of plant species and their uses. It is an important attraction in respect of its amenity and horticultural values. Yet, significant improvements could be made to the Gardens layout and the way in which its plants are organised.

In conjunction with improving the botanical quality of its plant collections, there needs to be a strengthening of the amenity values of the plant collections in key areas in order to maintain the Gardens attractiveness and for it to continue to be a leading Christchurch visitor attraction .

Although the Gardens employs a somewhat different approach to that of many of the traditional and modern botanic gardens of Europe and America, it has the potential to relate modern botanic garden values to the interests and values of Christchurch citizens in addition to allowing a better understanding of different aspects of the plant world.

It is important that the unique character of the Gardens is continued to be developed through, on the one hand, the reflection of Christchurch's garden and botanical heritage and, on the other hand, acknowledgement of its position in the Southern Hemisphere.

Parts of the Gardens will continue to be dedicated to the representation of New Zealand's plant species and, where possible, these areas are to be expanded and improved, including the development of indigenous plant collections in satellite gardens throughout the city.

- Secondary Goals:**
1. To assist visitors in their experience and understanding of the beauty, variety and complexity of the plant world.
 2. To promote the experience and understanding of New Zealand and, in particular, Canterbury flora.
 3. To conserve and promote conservation of rare and endangered plants.
 4. To promote the environmental importance of plants.
 5. To promote a greater understanding of the way plants relate to their environment (that is, plant ecology) and of the origins of ornamental plants through educational displays and interpretations programmes.
 6. To exchange information, plants and other material with botanical institutions worldwide.
 7. To introduce and display new and uncommon plant species and cultivars suitable for cultivation in Canterbury.
 7. To display and promote understanding of different ethnic uses of plants.
 8. To contribute to a greater understanding and use of plants through scientific research.
 9. To provide an open space within the City for relaxation and enjoyment.
 10. To promote and display plants for their horticultural importance and uses, including their use in residential and other amenity gardens.
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To meet the above goals this plan aims to guide and encourage ongoing development and enhancement of the Gardens through implementation of a number of objectives and policies that is expected to achieve excellence on five major fronts:

- A. Amenity/Horticulture:** This involves enhancement of the main visitor circulation corridors and a number of key developments.
- B. Layout/Circulation:** The intention is to improve the Gardens' layout and circulation to make the botanical features of the Gardens more accessible to visitors and ensure that views of significant features are maintained.
- C. Botanics:** The Gardens' botanical qualities will be enhanced with policies that outline the exact purpose for which plant collections are held. There are several main botanical improvements proposed. These include:
- (i) an increase in Southern Hemisphere plants (Canterbury Section, New Zealand Alpine extension, Southern Hemisphere-Gondwana display);
 - (ii) geographic area habitat plantings (wildflowers)¹¹;
 - (iii) ethno-botanical/cultural developments (Asian ethno botanical development and uses of New Zealand plants by Maori)⁹;
 - (iv) initiation of a Sustainable and Healthy Tree Plan¹². Approximately forty percent of tree planting in the Gardens will be organised geographically.
- D. Education:** Education is a primary function of the botanic gardens. In addition to the valuable educational work already done by Gardens staff, this plan aims to make the Gardens a reference centre for local botanical information.

To make this a reality it is proposed that the Gardens' Southern Hemisphere/Canterbury plants emphasis be given a local application through information links to the city's natural areas.

- E. Facilities:** The current facilities for visitors, staff and Garden operations are inadequate. Options for upgraded or new facilities will be investigated and, following elected Council decisions, implemented over the next two to five years leading up to the 150th anniversary in 2013 of the formation of the Gardens.

¹¹ There is no specific policy or proposed garden to display ethno botanical or regional plantings in the Gardens, but in the development of certain new, or re-development of existing, collections or trails, there is the opportunity to include plants from Asia, New Zealand plants used by Maori, and plants, such as wildflowers, from different geographic areas around the world.

¹² The Sustainable and Healthy Tree Plan will achieve sustainable and healthy management of the trees in the Gardens (and Hagley Park) for up to twenty years into the future, and advise on annual costs and rates of tree replacement and the species to be used.

17. Administration

Objective: 1 To administer and manage the Gardens according to the legal instruments under which it is held.

Policy: 1.1 The Gardens shall be administered and managed according to the provisions of the Reserves Act 1977.

Comment: In particular, for the legal area of the Botanic Gardens, which lies within the loop of the Avon River, Section 23 of the Act applies. This section specifies requirements for Local Purpose Reserves (Botanic Gardens).

In addition, areas of Hagley Park are treated for Botanic Gardens purposes. These are the areas of North Hagley Park between Riccarton Avenue and the Avon River, but are part of a Recreation Reserve under the Reserves Act. The development, management and use of these areas are subject to the provisions of Section 17 of the Reserves Act, and all other sections of the Reserve Act relevant to this classification, and the relevant sections of the Christchurch City Reserves Empowering Act 1971. This latter Act ensures that no part of the Park is unduly appropriated for further vehicle parking space or set aside for any public work under the Public Works Act. Guidance is also given by policy of the Hagley Park Management Plan.

Objective: 2 To ensure specialist horticultural, scientific and educational expertise in the management, display and interpretation of the Gardens plant collections.

Policies: 2.1 Specialist horticultural staff shall be employed to develop and maintain the plant collections to the highest possible standard.

2.2 Horticultural apprentices and trainees shall continue to be given training and experience in maintaining specialist plant collections.

2.3 Adequate information systems shall be maintained to assist the best management of existing and new plant collections.

2.4 There shall be ongoing informal liaison, where appropriate and feasible, with groups that have a stake, or interest, in the Gardens, including the Friends of the Botanic Gardens, to assist Gardens staff, and the Council generally, with implementation of the management plan and promotion of the Gardens.

2.5 External botanical expertise and advice shall be sought whenever appropriate, especially when new displays are established and existing displays are upgraded.

Objective: 3 To ensure adequate maintenance and development funding in line with the Gardens status as one of Christchurch's foremost civic attractions.

Policy: 3.1 Funding shall be sought from a variety of sources including direct funding by the Christchurch City Council, sponsorship, bequests and through a trust fund proposed to be established to ensure that the Gardens continues to attract local and international visitors.

Comment: A previous tourism study found that improving attractions was essential to increasing visitor patronage. The Gardens are an important Christchurch tourist attraction and need to be funded appropriately.

18. Functions and operations

Plant acquisition, propagation and dissemination

Objective: 4 To propagate and exchange plants for display or research purposes.

Policy: 4.1 Plans for inclusion in plant collections shall be obtained from a certified source and, where propagated from seed, preferably collected in the wild from a recorded habitat.

Objective: 5 To exchange plants or seed with botanic gardens, botanical institutions and plant specialists internationally.

Policies: 5.1 The Gardens shall seek to exchange certified seed with other botanic gardens, arboretums, universities and private collections.

5.2 Excess plants from the seed exchange shall be exchanged or sold.

5.3 Seeds listed in the Gardens Index Seminum shall consist of New Zealand native plants and shall be checked for correct identification before listing and dispatch.

5.4 Seed from exotic, rare and endangered species shall be collected upon requested.

Comment: Great care is required to ensure that seed exported from and imported into the Gardens is true to type. Incorrect naming of plants and sending out of wrongly identified seed is difficult and often time consuming to remedy.

Plant records

- Objective:** 6 **To identify and record the location and significant details of all plants in the Gardens.**
- Policies:**
- 6.1 An electronic filing system shall be maintained to record plant location and significant details.
- 6.2 The existing filing system shall be updated with regard to:
- correct nomenclature;
 - documentation of all living collections, including those of wild origin;
 - identification of unknown plants.
- 6.3 Computerised plant records shall be copied into a fully relational database that will enable sorting according to, for example, families, origin and cultural requirements.
- 6.4 A systematic check of the gardens shall be carried out on a regular basis to check for flowering, fruiting, health and survival of all plants and their labelling needs. All findings will be recorded.

Herbarium

- Objective:** 7 **To maintain and expand on the herbarium collection to support plant identification, research and teaching.**
- Policies:**
- 7.1 The herbarium collection shall be representative of the:
- (a) Gardens' living plant collections.
- (b) Canterbury's flora and New Zealand cultivars.
- 7.2 Preparation and storage facilities shall be provided for the enlarged herbarium based on accepted herbarium standards.
- Comment: A "working" herbarium is an essential tool in the running of a botanic garden.*
- 7.3 Access to the herbarium shall generally be allowed for approved persons for study and identification purposes.
- 7.4 The historic Armstrong herbarium shall continue to be protectively housed at Landcare Research, Lincoln, until new storage facilities are available in the Gardens.

Science and research

A basic requirement of a botanic garden is that its scientific role is carried out in a professional manner. This is especially important in Christchurch in view of the general lack of scientific contribution to the Gardens' development over the years.

Objective: 8 To assist with research institutions and organisations in botanical research projects and to make greater use of the Gardens' plant resource for research purposes.

Policies: 8.1 The Gardens shall be a member of the Botanic Gardens Conservation International (BGCI).

8.2 The Gardens shall actively participate in the Botanic Gardens of Australia and New Zealand (BGANZ) forum.

8.3 Conservation related projects conducted at the Gardens shall be coordinated with similar projects in operation in other New Zealand institutions.

8.4 The setting up of a horticultural research programme incorporating propagation and cultivation studies, hybridisation studies and work on special purpose plants will be investigated in consultation with other relevant organisations such as Landcare Research New Zealand, Lincoln University and Canterbury University.

8.5 The Gardens shall investigate the setting up of a tissue culture propagation unit for the proposed new potting shed to complement the above research functions.

Comment: Horticultural research should aim to promote New Zealand and especially Canterbury flora of horticultural significance, and exotic plants of special significance that may have economic potential. Assistance may be required from institutions such as Landcare NZ, University of Canterbury and Lincoln University in the setting up and management of Gardens' research projects.

Objective: 9 To seek assistance and co-operation from scientific institutions and organisations in administering the Gardens scientific functions.

Education and public use

Objective: 10 To assist the public in their experience and understanding of the plant world.

Policies: 10.1 All plant collection shall have an interpretation programme with an accompanying information pamphlet.

10.2 All plants, or groups of plants and collection themes, as appropriate, shall be labelled with labels legible from the nearest path. If this is not possible, then some other means of identifying plants shall be used.

Comment: Generally plant labels will list the plant family, genus and species, geographical origin, common name and accession number.

- 10.3 Education opportunities shall be provided in the following areas as appropriate:
- An invitation lecture series (including overseas speakers).
 - Community education programmes (lectures/demonstrations).
 - School education programmes.
 - Teaching aids for schools (Gardens education kit).
 - Slide/video presentations.
 - Guided tours.
 - Night block courses.
 - Weekly/monthly newspaper articles.
 - Botanical field trips.
 - Gardens exhibitions.

10.4 Features and activities occurring in the Gardens shall be promoted via the media and other suitable means.

10.5 The training and education of persons seeking a career in horticulture shall be contributed to.

10.6 The Visitor/Information Centre shall function as the main site for lectures, displays and interpretation.

Objective: 11 To encourage greater local and international use and experience of the Gardens aesthetic, educational, scientific, and cultural qualities.

Policies: 11.1 New ways of advertising the Gardens internationally and nationally as a tourist attraction shall be investigated, including active participation in the Cultural Precinct.

Comment: The Gardens is important as a means of attracting overseas and local visitors to Christchurch. Greater numbers of overseas garden clubs and specialist horticultural clubs can be encouraged to visit the Gardens, especially as they often visit at off peak times during the week.

11.2 The playground shall be maintained as an attraction to draw more people in to experience other Gardens qualities.

Comment: The siting of the playground in the Gardens is to encourage families in.

11.3 The existing children's playground in the Gardens shall be enhanced.

Comment: The Hagley Park/Botanic Gardens Hearings Subcommittee, during its consideration of the public submissions, recommended playground enhancement, and this was adopted by Council on 16 August 2007.

11.4 There shall be no extension of the playground beyond the existing planted perimeter.

11.5 Seating will be reasonably provided through the Gardens.

- 11.6 Visitor numbers and use of the gardens shall be regularly monitored.

Comment: Accurate, up-to-date information on visitor numbers and uses of the Gardens is crucial for planning of development and maintenance programmes.

- 11.7 A plant interpretation programme that relates Gardens displays with areas in the City and throughout Canterbury shall be instigated.

Comment: A major opportunity exists for the Gardens being able to act as an information referral point for other botanical areas in the City. For example, over 200 sites within the City's boundaries display representative examples of pre-European nature. A large number of these sites are situated in parks.. It would be possible to link relevant areas of the Gardens (for example, New Zealand bush, native riparian areas and Canterbury displays) by way of labels, displays, talks and brochures with the real natural example elsewhere in the City or in the wider Canterbury area. For example, the kahikatea plantings in the Gardens could be used to draw attention to the prehistoric Riccarton Bush only a short travelling distance away, and plants of the subalpine garden can be seen at Arthur's Pass. This approach would increase the Gardens value to visitors and enhance the city and region as a whole through ecotourism and Gardens related tours.

Revenue generation

Objective: 12 To generate revenue to support the maintenance and development of the Gardens.

- Policies:
- 12.1 The Gardens Café and the Curator's House Restaurant shall continue to operate under leasehold concessions.
- 12.2 A marketing strategy for obtaining appropriate sponsorship and the raising of funds for Gardens developments shall be prepared.
- 12.3 Promotional material shall be produced for wide distribution.

Criteria for evaluating commercial activities

Any proposed commercial activity shall:

- 12.4 Be compatible with the goals and objectives for the Gardens.
- 12.5 Not physically diminish the aesthetic values of the Gardens.
- 12.6 Not impact on the ability of staff to maintain and develop the Gardens plant collection and displays.
- 12.7 Show that a rate of return that is acceptable to the Council is able to be achieved.

19. Circulation

The Gardens circulation system is crucial for optimum visitor use, yet has never been specifically designed. The path system lacks overall co-ordination and is largely comprised of a patchwork of uncoordinated routes laid out at different times for different purposes. Widths, alignments and surfacing of paths tend to reflect perceived maintenance requirements rather than visitor needs. In addition, there are issues with entrances to the Gardens with respect to location, width and, in one case, pedestrian safety.

Objective: **13 To develop a circulation network that meets both visitor needs and management requirement.**

Policies: 13.1 A new circulation network shall be progressively developed for the Gardens, which builds on the best aspects of the existing system and enhances its pedestrian use qualities.

- 13.2 A system of five clearly delineated major walkways shall be developed to provide visitors with an experience of different aspects of the Gardens character:
- Victoria Walk (amenity and horticultural features).
 - Banks Walk (open space and specimen trees).
 - Avon Walk (river views and habitat areas).
 - Cockayne Walk (New Zealand / Canterbury plant species and natural hybrids)
 - Woodland Walk (woodlands and habitat areas, including naturalistic mass floral displays).

13.3 Path widths shall be set according to the path's intended use and status in the circulation hierarchy.

13.4 A series of landmark features shall be established at important path junctions or at the ends of major paths to act as focal points and to help orientate the path user. (See Policy 13.5 for approval criteria).

Comment: Landmark features can include information facilities, seats, trees and artwork.

Criteria for monuments and statues

- 13.5 Consent to erect plaques, monuments, statues and art works shall only be granted when the following criteria are met:
- Plaques shall be unobtrusive and restricted to commemoration of ceremonial plantings.
 - Memorials shall have specific historical relevance to the Gardens or to botany or horticulture.
 - Art works shall have relevance to the Gardens or to botany or horticulture generally.
 - The siting shall be such so as to enhance the immediate environment and not obstruct Gardens functions.
 - The design, character and form shall be of a high standard and add to the Gardens amenity value.

20. Layout and character

Trees

The Gardens contain a magnificent collection of mature trees. They are one of its major public attractions. There has been, though, considerable duplication of species. This has reduced the range of individual specimens that can be grown. The following policies aim to rectify this situation by introducing a comprehensive planned approach to future tree planting.

Objective: 14 To display representative tree species from the temperate world for the purpose of:

- (a) Education about the plant world;
- (b) Horticultural information;
- (c) Amenity and visual appeal;
- (d) Research and scientific advancement.

Policies: 14.1 Trees planted in the areas designated as geographic areas on the Existing Site Features map (Figure 8.1, Page 10) shall be native to the global geographic region that these areas represent:

Comment: The regions represented are North America, Asia, Europe and the Southern Hemisphere.

14.2 All trees shall be identified and their general condition and probable life expectancy noted.

14.3 A Sustainable and Healthy Tree Plan shall be prepared for the entire Gardens listing potential replacement species and planting sites.

Comment: Council, with its adoption of the Hagley Park/Botanic Gardens Master Plan on 16 August 2007, included in that operative plan Project 9 (Sustainable and Healthy Tree Plan) to ensure the maintenance of sustainable and healthy trees for up to twenty years for Hagley Park and the Gardens, which links with city-wide tree policies and tree renewable programmes that are underway or being developed.

14.4 Species or cultivars already present in the Gardens shall not be duplicated, except where required for specific plant.

14.5 Immature duplicate specimens (where there are several examples) that can be shifted will be removed from the Gardens.

Objective: 15 To ensure that all commemorative planting in the Gardens is planned and conforms to Gardens objectives and policies.

Policies: 15.1 All commemorative planting shall be in accordance with the goals, objectives and policies outlined for specific vegetation areas and in the Sustainable and Healthy Tree Plan.

15.2 Commemorative planting in the Gardens shall be restricted to that undertaken by Heads of State.

Objective: 16 To ensure that all trees are in safe condition, well maintained and are not causing damage to significant structures or services or inhibiting the growth of more desirable specimens.

Policies: 16.1 Trees shall be grown and maintained to represent as near as possible their normal character and form, unless they need to be grown in a highly stressed situation or manicured for specific scientific, amenity or educational reasons or retained for conservation objectives.

16.2 Trees may be removed from the Gardens in the following situations in conformity with the goals, objectives and policies of this plan. The Gardens management has delegated authority for the removal of trees. (Note: The Council will publicise decisions to remove exceptional specimens before doing so. When rare or unusual plan material is to be removed it will be propagated and new specimens grown on prior to removal).

Situations where trees may be removed, subject to this plan's goals, objectives and policies:

- The tree is dead, dying or diseased.
- The tree is a danger to public safety.
- The tree is suppressing or inhibiting growth of more desirable specimen trees or other vegetation of greater interest to the public.
- The tree is a poor specimen or unsuited to the site and needs to be removed in order that the area is replanted with trees that will make better specimens.
- The species is unnecessarily duplicated elsewhere in the Gardens.
- The tree interferes with essential public utilities.
- The tree is obstructing the water flow in any drainage system, watercourse, stream or river.
- The tree has outgrown its location or site and is causing serious damage to buildings or property, public or privately owned.

Open space areas

Open space¹³ areas are those where it is desirable to retain open lawn or low level planting. Isolated specimen trees may be planted in these areas but should be kept to a minimum and sited so as not to obstruct visibility. Parts of the Gardens have now reached the stage where it is no longer possible to clearly view individual trees.

Objective: 17 To conserve open space in the Gardens in order to aid visitor orientation, allow clear views of significant trees, the Avon River and other garden features, and to allow sunlight to reach the ground floor.

Lawns

The Gardens feature a number of named lawns and open grassed areas. These allow views of Gardens features and specimen trees and enable visitors to orientate themselves in relating to their surroundings. The orderly sequence of these spaces in an overall pattern is essential for an interesting and logical circulation network in the Gardens. However, over the years these areas have gradually been filled with new trees to the extent that some areas can no longer be truly described as open space.

¹³ Open space is taken in this context to be those areas in the Gardens that are largely free of tall, dense vegetation, thereby permitting views across the areas in question to adjoining areas.

See the Existing Site Features map (Figure 8.1, Page 10) for the location of lawns in the Gardens.

Armstrong Lawn

Objective: 18 To maintain and enhance the Rolleston Avenue entrances to the Gardens, and views in and out, as an open lawn planted with specimen trees.

Notes:

1. As trees now fill most of the Armstrong Lawn open space, it is necessary that further tree planting there is controlled.
2. The native planting is intended to complement the existing native plants alongside the Museum and give overseas visitors a taste of New Zealand.
3. The part of the Armstrong Lawn alongside the Rolleston Avenue boundary may be the only part of the Gardens that some tourists visit on their way to the Museum.
4. It is important that views of the side of the Museum and access to it for maintenance and entrance into the building are retained.

- Policies:**
- 18.1 The heritage features of the Armstrong Lawn shall be retained; in particular:
- The view from the museum to the Curators House.
 - The vista from the Archery Lawn to the Arts Centre through the Evelyn Cousins gateway.
 - Existing carpet bedding schemes.
 - Large specimen trees.
- 18.2 Required replacement planting for inside the Rolleston Avenue frontage shall comprise predominantly large growth deciduous trees and an open under-story in order to retain views of the Arts Centre from the Gardens.
- 18.3 An open space corridor shall be maintained between the Armstrong Lawn and the Daffodil Woodland across the Avon River in Hagley Park to allow views of the river.

Archery Lawn

Objective: 19 To maintain an avenue effect on both sides of the open Archery Lawn with attractive large trees and a clear view through the centre of the Lawn.

- Policy:** 19.1 The integrity of the row of *Sequoiadendron* trees shall be maintained.

Potts Lawn

Objective: 20 To display lawn specimens of hardy palms suitable for a temperate climate.

Other Lawns

Objective: 21 All Gardens lawns shall be conserved as open space for aesthetic and user orientation reasons.

Lawns, in addition to the Armstrong and Archery Lawns, are:

- Central Lawn
- Playground Lawn
- Western Lawn
- Harper Lawn
- Murray Aynsley Lawn
- Stafford Lawn
- Observatory Lawn
- Hall Lawn
- Pinetum Lawn

Lakes

The lakes include some of the most picturesque areas of open space in the Gardens. Most are enclosed by surrounding belts of thick vegetation. In many cases this contributes to their charm and environmental quality – for example, the Water Garden on the western side of the Gardens and, to a lesser degree, the adjacent Western Pond. However, the unique contribution that water bodies can make to improving the character of associated open spaces is diminished in other parts of the Gardens because of an over abundance of screening vegetation, such as by the Information Centre Lake.

The lakes and their margins also offer a unique opportunity for the creation of specialised habitats for the growing of aquatic and marsh plants. Enclosed lake areas can also allow creation of areas with greater potential humidity. Generally, the botanical potential of the Gardens lake areas can be further enhanced with more plantings of species that prefer these habitats.

New Zealand Section Lake

Objective 22 To preserve the open character of the New Zealand Section Lake and the views of it as an amenity feature and to enhance views of the surrounding native vegetation.

- Policies:**
- 22.1 A collection of native swamp vegetation shall be maintained on the lake.
 - 22.2 The grassed area on the eastern side of the lake shall be kept clear of shrubs to maintain a clear view of the lake and the surrounding vegetation and to retain the attractive grass bank / lake interface.
 - 22.3 Exotic plants on the margins of, and in, the lake shall be removed where practicable.

Water Garden – Main Pond

Objective: 23 To display aquatic and marsh plants to maintain the enclosure of existing vegetation on the pond's surrounds.

- Policies:**
- 23.1 A greater variety of water lily cultivars shall be introduced to the pond.
 - 23.2 Surrounding plantings shall an emphasis on distinctive bark.

Western Pond

Objective: 24 To display a collection of North American tree, shrub and herbaceous species.

Policy 24.1 The existing *hardy monocot* collections shall be retained and expanded.

Information Centre Lake

Objective: 25 To display North American species to create a woodland setting.

Policy 25.1 The plantings will tie in closely with the objectives for the Western Pond.

Avon River Corridor

The Avon River corridor is an area of continuous open space that encloses the Gardens. It is generally high visual landscape quality is unfortunately hidden, in many places, from the Gardens by high banks and extensive screens of riverside vegetation.

As with the lakes and their margins the river corridor offers a unique opportunity for the creation of specialised habitats for the growing of waterside plants. The dry sunny banks and damper shaded banks offer specific habitat opportunities. In particular, there is great potential for the establishment of riparian native plant communities as many of these types of plants are already colonising the river banks and margins naturally.

Surveys of the city's natural areas and remnant native plants have indicated a surprisingly wide variety of native wetland species still present in the city. However, some of the areas where these plants occur are unprotected and vulnerable to modification or destruction. The Gardens' Avon River and tributary stream (Addington Brook and Riccarton Stream) margins are ideal locations for the conservation of some of these species.

Erosion of the river banks due to the natural dynamics of the river flow is a significant problem in the Gardens. In this artificial situation there is no room for the river to be able to freely alter its course; therefore, bank stabilisation is necessary.

Objective: 26 To enhance the landscape character of the Avon River corridor and provide open space links between the river, where it adjoins the Gardens, and the Gardens.

Policy: 26.1 The visual landscape character of the Avon River corridor that is maintained shall vary along its length where it adjoins the Gardens. Some regrading of the river banks shall be undertaken in places and, eventually, thinning or planting of vegetation in strategic areas.

Objective: 27 To protect the native plant communities established along sections of the Avon River corridor.

Policy: 27.1 All native waterside plants on the lower banks of the Avon River shall be protected where they do not seriously impede the natural flow of the river.

Comment: Ferns and various sedges readily colonise the river banks just above the water line. These plants are descendants of vegetation types that were once common in Christchurch but are now uncommon.

Objective: 28 To further develop the spring flowering nature of the Hagley Park side of the Avon river loop, with continued plantings of *Prunus yeodoensis*, and *Magnolia*.

Comment: The possible relocation of the existing South Hagley Park deciduous Azalea's to a more suitable site within this area.

Objective: 29 To protect the Avon River banks from erosion with aesthetically appropriate natural methods.

Policies: 29.1 Local native riparian plants and non-invasive exotic plants shall be used for future bank retention works.

29.2 Exotic plants, or non native plants not of local provenance, that are likely to colonise the down stream river environment shall not be planted in the river corridor.

Canterbury native river margin and dry land plants

Objective: 30 To display representative examples of Canterbury native river margin plants on the Hagley Park side of the south west bend of the Avon River, and Canterbury dryland plants on the drier slope above the river bank.

Comment: The Hagley Park side of the south west bend of the Avon River is exactly opposite the New Zealand Section in the Gardens proper and has been naturally colonised by native sedge species. Kowhais have also been planted on the southern river bank. It is considered appropriate to extend the New Zealand planting to the Riccarton Avenue side of the river. However, as this is one of the few places from where views of the interior of the Gardens can be gained from Riccarton Avenue it is important that planting does not block key sightlines.

Policy: 30.1 A display of native Canterbury Plains' vegetation shall be established and maintained on a suitable river bank site between the Avon River and Riccarton Avenue.

Comment: This collection could display plants of the Canterbury grasslands, the Rakaia Island shrub forest or the original riverbank shrubland of Hagley Park.

Gondwana Garden

Objective: 31 To display families and genera which have a typically Gondwanan pattern of geographic distribution.

Policy: 31.1 The southern podocarps and beeches shall be displayed.

South American Collection

Objective: 32 To display South American plant species of Argentina and Chile.

Policy: 32.1 The extension of the sand mound to enhance the site and create different planting conditions shall be explored.

Australian Collection

Objective: 33 To display Australian plant species with an emphasis on Victorian and New South Wales highland, and Tasmanian plants.

Comment: It is proposed that this collection should be placed on the Playground Lawn, west of the playground. The Playground Lawn was destined to hold The North American Arboretum, but there is insufficient space for this collection. This collection could not commence until some trees have finished their lifespan.

Southern Hemisphere Contribution to Horticulture

Objective: 34 To display a representative collection of species and cultivars derived from the southern hemisphere.

Policies: 34.1 Criteria for plant choice in a representative collection of species and cultivars derived from the southern hemisphere shall include amenity value and southern oddities in form and function.

34.2 Native plants shall be planted in the Avon River corridor and in wetter marshy areas adjoining the river.

Rock Garden Area

The Rock Garden utilises a south facing terrace in the south east corner of the Gardens. A range of growing conditions have been created in this Rock Garden, ranging from cool shady moist sites to open fast draining screes. These areas of different growing conditions have been created to suit the specialised environmental needs of the alpine, subalpine and woodland plants that are grown. The Rock Garden also contains a number of dwarf herbaceous perennials and shrubs. It is currently divided into two separate parts. The larger eastern part contains a mixed collection of plants from many world regions, generally planted according to habitat requirements. The western part is restricted to New Zealand plants of mostly subalpine or lowland origin. Heavy shade in this area has made the cultivation of alpine plants more difficult.

Exotic Rock Garden

Objective: 35 To grow a wide range of alpine garden plants from mountain regions around the world, including species, cultivars and hybrids, and to display physical geographic associations of these.

Policies: 35.1 The Rock Garden shall continue to feature as wide a range of exotic alpine plants as practicable.

35.2 Conservation planting of exotic alpine plants shall be undertaken, as required.

35.3 No further trees shall be planted where they will shade the rock gardens.

Comment: The Rock Garden has a good selection of plants from the Northern Hemisphere.

Erica and Calluna Border

Objective: 36 To grow temperate Erica species and cultivars and range of Calluna varieties with emphasis on cultivars of horticultural merit.

New Zealand Subalpine Garden

Objective: 37 To grow a wide range of New Zealand subalpine and montane plants, including those that are rare and endangered, with an emphasis on plants of the Canterbury Region.

Policies: 37.1 The existing garden area to the south of the New Zealand Section Lake shall be maintained for the growing of New Zealand subalpine and montane plants.

37.2 The New Zealand alpine garden shall have an emphasis on plants from the Canterbury region with planting to illustrate the transition from the montane zone through to the subalpine zone.

37.3 A New Zealand limestone garden shall be developed in the New Zealand section of the rock garden area.

Comment: New Zealand limestone plants contain a number of rare and attractive species, many of which are at threat in the wild.

Cockayne Memorial Garden

Objective 38 To display a range of New Zealand small trees and shrubs to commemorate the contribution of Dr Leonard Cockayne to New Zealand botany.

Policy: 38.1 The Cockayne Memorial Garden shall display species and natural varieties of genera such as *Hebe*, *Leptospermum*, *Sophora* and *Carmichaelia*, with special emphasis on Canterbury species.

Amenity / Cultural Areas

Curator's House Restaurant Garden

Objective: 39 To develop the garden to demonstrate vegetables, fruit trees, berry fruits and amenity plants that can be used in a small home garden.

Policies: 39.1 Fruit trees and berry fruits with dwarf root stock shall be used.

39.2 Crop rotation as well as companion planting shall be demonstrated.

39.3 A variety of composting systems shall be displayed.

39.4 Both new and heritage cultivars suitable to Canterbury shall be displayed.

39.5 The Curator's House Restaurant Garden plantings shall be linked to heritage plant collections.

Herbaceous Border

Objective: 40 To display a range of herbaceous plants in a formal border situation. To conserve significant rare or endangered cultivars and hybrids from extinction.

Modern Cultivar Rose Garden

Objective: 41 To display a variety of modern rose cultivars in the inner Rose Garden, and a representation of the *Rosaceae* family in a border outside the yew hedge.

- Policies:**
- 41.1 The Rose Garden shall be maintained to a high visual standard.
 - 41.2 The character of the existing historic circular garden design shall be maintained.
 - 41.3 Climbing roses shall continue to be provided for within the inner rose garden.
 - 41.4 'High Health' cultivars with high levels of disease tolerance shall be trialled and added to the Rose Garden.
 - 41.5 Research and development of an Integrated Pest Management (IPM) programme shall be carried out in the Rose Garden.
 - 41.6 Due to shading, the height of trees and shrubs around outside borders shall be limited to under five metres.
 - 41.7 A collection of ornamental species and modern cultivars from the *Roseaceae* family that may include trees, shrubs and perennials shall be displayed in the Rose Garden.

Comment: The area surrounding the Rose Garden is the logical place to feature members of the family Rosaceae. Many of the plants grown in private gardens are from this family.

Herb Garden

Objective: 42 To display a variety of herbs that are used for their culinary, medicinal, cosmetic or fragrance qualities.

- Policy:**
- 42.1 Appropriate climbers shall be used to cover the Herb Garden pergola.

Heritage Roses

Objective: 43 To display a range of heritage roses in association with appropriate plants.

Comment: This display is intended to show the wide range of nineteenth to early-twentieth century, and older, roses in settings with other plants that portray the character of that time.

Open woodland areas

Open woodland consists of those areas where it is desirable to retain a significant degree of openness between the trunks of groups of trees for visual or environmental reasons, such as provision of shade for ground level plants.

Objective: 44 To display groups of trees with a relatively open understory for botanical, amenity and/or environmental reasons.

Daffodil Woodland

Objective: 45 To display flowering bulbous plants in an open woodland setting.

Policies: 45.1 The daffodil display shall be maintained as an amenity feature, with other bulbous plants added to lengthen the flowering season.

45.2 Deciduous *Prunus* cultivars shall be planted in the woodland to provide sub-canopy interest and be an extension of the *Prunus* collections.

45.3 Future planting shall be of low growing plants to ensure the open woodland character is maintained.

45.4 Improvement shall be made to the turf area between the Avon River and the pedestrian pathway from the Woodlands Bridge to the hospital boundary.

Comment: The woodlands and daffodil are one of the Garden/Park highlights in spring. The open understory, highlighted by the occasional flowering tree, allows the expanse of flowers to be fully appreciated.

Woodland Garden

Objective: 46 To display a range of woodland plants that prefer moist soil conditions.

Policies: 46.1 Plantings of *Primula* species and cultivars shall be continued.

46.2 A collection of *Viburnum* cultivars and species will continue to be developed in this area.

46.3 Collections of heritage, New Zealand bred cultivars and Chinese *Reticulata* camellias shall continue to be developed.

Objective: 47 To maintain the stream side garden along Addington Brook between the Avon River and Riccarton Avenue for the growing of a wide range of woodland plants.

Pinetum

Objective: 48 To display a representative range of the world's conifers, maintaining a balance between species and cultivars.

Policies: 48.1 Portions of open lawn in the centre and at the southern end of the Pinetum shall be retained.

- 48.2 A low screen of prostrate, dwarf and small size conifers shall be maintained beside the United Car Park.

Dense woodland / shrubland areas

Temperate Asian Collection

Objective: 49 To maintain a representative collection of plants originating from the temperate climate zone of Asia.

Policies: 49.1 The Gardens shall be a repository for temperate Asiatic plants in New Zealand.

49.2 The Temperate Asian Collection shall be located in the south/south-east margin of the Gardens, to take advantage of the significant microclimates and topographical features found there.

49.3 The Temperate Asian Collection shall incorporate or be linked to the following existing gardens:

- Scarlet Oak border
- Ilex border
- Gingko triangle
- Bamboo border
- River walk borders
- Rhododendron border
- Cherry mound
- Maple border

Ilex Border

Objective: 50 To display a collection of *Ilex* species and cultivars.

Policies: 50.1 An overhead canopy of trees shall be maintained to provide shelter for the Ilex border.

50.2 The Ilex border plantings shall have a link with the Temperate Asian Collection.

Scarlet Oak Border

Objective: 51 To display a mixed group of evergreen and deciduous plants with a ground cover of spring flowering bulbs.

Policy: 51.1 The Scarlet Oak border plantings shall have a link with the Temperate Asian Collection.

Rhododendron Border

Objective: 52 To display New Zealand bred *Rhododendron* cultivars along with appropriate companion plants.

Policy: 52.1 The Rhododendron border plantings shall have a link with the Temperate Asian Collection.

Cherry Mound

Objective: 53 To display a representative range of Japanese cherry cultivars.

- Policies:
- 53.1 The Japanese cherries on the Cherry Mound shall be managed as an amenity feature.
 - 53.2 Older Japanese cherry cultivars of horticultural merit shall be conserved and other material sourced from within New Zealand.
 - 53.3 Bio-inoculant shall be used for disease management, such as for silver leaf.

Comment: This collection will be extended as part of the Peace Bell development.

Pine Mound / Plants of Southern Africa

Objective: 54 To display plants of Southern Africa.

- Policies:
- 54.1 The collection of *Proteaceae* and *Ericaceae* shall be maintained.
 - 54.2 Other South African flowering plants shall be planted to provide added visual interest.

Objective: 55 To retain the character of the pine mound as an amenity feature and focal point.

- Policy:
- 55.1 The *Pinus pinaster* trees shall be retained as a focal point.

Comment: The Pinus pinaster group forms a significant focal point at the eastern end of the Archery lawn and also contributes to the microclimate effect on the mound.

The New Zealand Section

Objective: 56 To display a range of native tree and shrub species, with an emphasis on plants indigenous to Canterbury.

- Policies:
- 56.1 A rare and endangered plant section shall be maintained with its main emphasis on conserving Canterbury, Chatham Island and Marlborough species.
 - 56.2 A Chatham Islands plant collection shall be developed in the New Zealand Section.
 - 56.3 Exotic trees along the Avon River bank, in front of the New Zealand Section, shall be replaced with native plants.
 - 56.4 The New Zealand Section shall be extended to include borders on the southern side of the Western Pond.
-

Australasian Display Garden

Objective: 57 To display ornamental varieties, cultivars and hybrids of New Zealand and Australia suitable for Canterbury growing conditions.

Policies: 57.1 Selected New Zealand bred cultivars shall be used to raise the profile of New Zealand plants.

57.2 Plants that can be grown in a home garden situation shall be demonstrated.

57.3 Plants with relatives on both sides off the Tasman Sea shall be the focus of the Australian border.

Azalea Garden

Objective: 58 To display the horticultural development of deciduous azaleas. To enlarge the Gardens collection of magnolias and *Michelia*, with emphasis on cultivars.

Policies: 58.1 The Azalea Garden shall provide an informal setting with a range of appropriate canopy trees to provide filtered light for the azaleas and associated plants.

58.2 The azalea beds shall be under-planted with appropriate evergreen plants and summer flowering bulbs to provide off-season interest.

Museum Border

Objective: 59 To display a mixed shrub border alongside the Museum/Robert McDougall buildings.

College Border

Objective: 60 To display half-hardy and winter interest plants.

Policies: 60.1 Pergolas and courtyards shall be developed along the length of the Christ's College wall to enable the growing of climbing half-hardy plant material.

60.2 Winter flowering plants shall be included for seasonal interest.

Comment: The College border has a unique micro-climate due to southerly shelter from the line of Sequoiadendrons along the Archery Lawn. This collection can be extended to include the borders next to the toilet block and the Robert McDougall building.

Dahlia Collection

Objective: 61 To display a collection of New Zealand bred cultivars and *Dahlia* species.

Herbert Memorial/Arbour Border

Objective: 62 To display *Cornus florida* and *Kalmia* cultivars.

Children's Educational Playground

Objective: 63 **To create an evolving display within the current playground area for educational play that relates to the plant kingdom.**

Policies: 63.1 Play equipment shall be replaced with apparatus that is designed around plant themes.

63.2 Playground redevelopment shall include links to surrounding collections.

Comment: The existing playground is outdated and does not fit in with the rest of the Gardens. The opportunity exists to create a more interactive experience between parents and their children, which will awaken some curiosity about the plant kingdom.

Weather Station

Objective: 64 **To capture weather data to correlate information for the National Institute of Water and Atmospheric Research (NIWA) as well as the Gardens' own historical records.**

Policy: 64.1 The weather compound shall be retained at its existing size and location.

Kate Sheppard Memorial Walk

Objective: 65 **To commemorate over one hundred years of women's suffrage in New Zealand – from 1893 to 1993.**

Policy: 65.1 White flowering *Camellia* cultivars and species shall be displayed along the Kate Sheppard Walk.

Conservatories

Cunningham House

Objective: 66 **To display tropical and subtropical plants in a semi-natural environment, with lower light level plants situated on the ground floor of the Cunningham House and higher light level plants on the upper storey.**

Policies: 66.1 Interpretation will be provided to enhance the visitor experience.

66.2 Plants within the jungle area, once they reach a height that conflicts with the building, shall be removed and replaced with like material.

Townend House

Objective: 67 **To display as extensive range as possible of cool greenhouse flowering and foliage plants.**

Policies: 67.1 Iconic collections, such as the tuberous begonias, shall be retained and developed further, and new cultivars added from local and overseas sources.

67.2 Interpretation will be provided to identify flowering crops and their growing requirements.

67.3 Growing conditions will be altered to improve the need of each crop to maximise flowering longevity. This included installing louvers for better ventilation.

Garrick House

Objective: 68 To display a range of cacti to illustrate their diversity, modes of growth and environmental conditions.

Gilpin House

Objective: 69 To display the most extensive range of the *Orchidaceae* family and associated plants in a natural environmental setting.

Fern House

Objective: 70 To display a range of indigenous temperate ferns in a natural setting otherwise unable to be grown in Canterbury conditions.

Policy: 70.1 The indigenous temperate fern collection shall be linked to the Native Section Fern collections and Mona Vale fernery.

Foweraker Alpine Plant House

Objective: 71 To display a selection of indigenous and exotic alpine plants that are difficult to grow outside for the enjoyment and education of the public.

Policy: 71.1 A raised bed of alpines shall be maintained, with displays changed regularly to provide continuity of display.

Objective: 72 To display a selection of rare and endangered alpine plants in the garden around the Alpine House.

Policy: 72.1 An alpine rock garden shall be maintained to the north and west of the Alpine House to form an appropriate surround to the indoor alpine connection.

Comment: The existing Alpine House is too small to easily provide a more natural display of alpine plants. It also lacks space for a larger display of New Zealand alpine plants. As many New Zealand alpine plants require overhead protection in winter, and are generally not accessible to the public in their natural environment, a new or enlarged house is a desirable long term objective.

Conservatory Complex Surrounds

Objective: 73 **To display, externally, a reflection of the plant collections held within the complex, and to create a pseudo-tropical garden, with emphasis on interesting and bold foliage and flowers.**

Policies: 73.1 A hardy collection of cacti and succulents shall be displayed in the conservatory complex surrounds.

73.2 Hardy native ferns shall be displayed in the conservatory complex surrounds.

73.3 The north wall of the Fernery shall be planted with North American ferns.

73.4 A selection of indigenous and exotic alpine plants shall be displayed to supplement the limited space of the Alpine House.

Comment: The Fragrant Garden has been in place for some years and has never lived up to its name. Even with better selection and sighting of plants, the situation has not improved. This is backed up by staff of the Hamilton Botanical Gardens where there has been a similar outcome.

Bonsai Collection

Objective: 74 **To display a representative range of bonsai plants in an appropriate Japanese style setting that is readily accessible to the public.**

Policy: 74.1 An appropriate site shall be located for a bonsai display in the Gardens.

Comment: The existing bonsai collection is currently situated in an out of the way secluded site, easily missed by many visitors. This collection can only be continued and developed with the appropriate resources and specially trained staff.

Carnivorous Plants

Objective: 75 **To display a range of insectivorous plants and provide environments suited for their individual requirements.**

Policy: 75.1 New species of carnivorous plants shall be imported to improve and extent the current collection.

Quarantine Facility

Objective: 76 **To investigate, or make suitable arrangements with an external provider, to develop and maintain a facility for the sole purpose of importing new plant material for botanic garden collections, research and plant breeding.**

21. Wildlife

Objective: 77 **To encourage desirable wildlife and eliminate undesirable wildlife pursuant to the Wildlife Act 1953.**

Policies: 77.1 Native bush birds shall be encouraged to visit and/or live in the Gardens.

Comment: Native birds should be encouraged in the Gardens where their presence does not unduly conflict with plant collection aims.

77.2 Riverside vegetation important for the spawning of native fish shall, as far as possible, be retained at the appropriate times of the year.

22. Buildings

Objective: 78 **To maintain existing buildings and ensure the design and placement of building extensions and new buildings is appropriate and co-ordinated with existing structures.**

Policies: 78.1 New buildings, extensions and replacements shall meet the following criteria:

- Their placement shall reflect the layout displayed in the Existing Site Features map (see Figure 8.1, Page 10).
- Their intended use shall be appropriate to this plan's goals, objectives, and policies.
- They shall be compatible in colour and design with their surroundings and with existing buildings.

78.2 All buildings in the Gardens shall be maintained to a high standard.

Comment: The Cunningham House is the most valuable and visually significant building in the Gardens with an estimated replacement value of over \$1.1 million. It is important that the existing building be kept in good repair.