



Master Plan

Adopted February 2010 Volume 1 of 2

Vision and Design





This Master Plan looks to the future. It will lead the way in conserving and educating on the Bendigo district's rare and threatened plants; it will involve children of all ages through education programmes that will be developed as the Gardens' grows; home gardeners will be able to visit to learn about plants that can be grown in sustainable ways in Bendigo's climate and soils; and the Bendigo Creek will once again ring with the sound of frogs and native birds.









Mayor Cr. Rod Campbell

Established approximately 150 years ago, the Bendigo Botanic Gardens, White Hills is Bendigo's oldest park and is one of the City's jewels, preceding noted buildings such as the Town Hall, Shamrock Hotel and historic Post Office.

We acknowledge the vision of the early founders when they set aside the gardens for community enjoyment; a truly magnificent vision which created a grand park, exhibiting rare and interesting plant species from across the globe.

This Master Plan maintains that vision and incorporates a fresh approach, reflective of the expectations of future generations whilst simultaneously recognising the significant elements of the former gardens including attention to beauty.

The historic gardens will be restored to their former glory as part of the proposal. Seams of golden gardens will identify with the gold bearing reefs that underlie the area will be replicated on the surface and reflecting Bendigo's golden past. The story of the district's indigenous inhabitants and their relationship with the land will be evident in areas of the garden. It is intended that the creek will once again ring to the sound of native frogs and birds.

Forward looking, the Plan showcases conservation of and education about Bendigo's rare and threatened plants. In addition, the Plan will enable education programmes to be implemented for children of all ages and home gardeners will have the opportunity to learn about sustainable plant growth relevant to Bendigo's soils and climate.

Above all, the Bendigo Botanic Gardens, White Hills, will be a place for everyone. In addition to the traditional botanic aspects of the gardens, there will be picnic and BBQ facilities; an events lawn which will be used for a range of activities including an outdoor cinema; areas for passive relaxation; spaces to celebrate life's milestones such as garden weddings and there will be a children's garden and play space where youngsters can experience plants and nature in a safe and engaging manner.

It is envisaged that future generations will derive enormous pleasure from the gardens, similar to the pioneers of 150 years ago and I encourage all citizens and visitors of the greater Bendigo region to visit the Bendigo Botanic Gardens, White Hills and watch the development of the gardens as the Master Plan comes to fruition.

Cr. Rod Campbell

City of Greater Bendigo



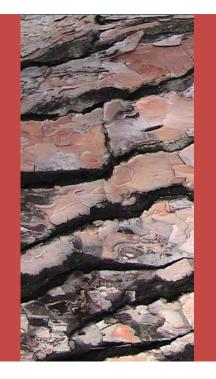


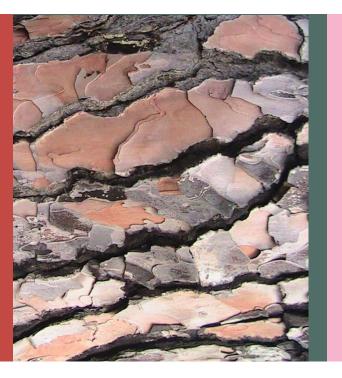
Background

The City of Greater Bendigo (CoGB) has undertaken a Master Plan for the rejuvenation and extension of the Bendigo Botanic Gardens, White Hills (BBG). This will guide the restoration of the existing culturally significant Gardens and plan for an extension, creating a significant, new, engaging and contemporary facility.

PURPOSE OF THIS DOCUMENT







THE PURPOSE OF THIS DOCUMENT

Background contd...

This document outlines the intended design of the Bendigo Botanic Gardens, White Hills and identifies the key recommendations and tasks required to achieve the vision.

This is Volume One of Two. This volume contains the forward looking and visionary elements of the development. Volume 2 contains much of the background and the history both of the development planning and of the Gardens and a significant number of appendices including the Living Plant Collections Policy. These two volumes should be considered in association with a number of other documents including; The Heritage Significance Assessment and Strategy 2005 - Lee Andrews and Associates

Interpretation Strategy Bendigo Botanic Gardens White Hills 2009 -Creative Hat Interpretation

Bendigo Botanic Gardens Signage Manual - Arterial 2009

Process for Master Plan development

The development of the Master Plan has followed a rigorous and thorough process, including significant public consultation and stakeholder involvement. The Master Plan is the final stage of this lengthy process, which is broadly outlined as follows:

Formation of a steering committee made up of representatives of various stakeholder groups

Discussions with various stakeholders to build an understanding of issues, wants and needs

Release of an Options Paper and undertaking of broad community engagement to seek input on issues such as the future of animal collections, type of aquatic facility and the arrangement of the various elements

Design of the Draft Landscape Concept Plan and preparation of Master Plan documents for the site based on the feedback from the community

Review of the draft concept plan by the steering committee and by stakeholder groups

Public consultation on the Draft Master Plan (including Draft Landscape Concept Plan)

Finalise the Master Plan, including the Final Landscape Concept Plan based on community feedback to the Draft Master Plan

Prepare detailed drawings, costings and potential staging

Budget and programme the works

It is acknowledged that this is a long term project and that the restoration and extension of the Botanic Gardens will happen progressively over many, many years.







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Project Team

Tim Buykx – Coordinator Landscape and Open Space Planning, CoGB

Kevin Walsh – Landscape Planner, CoGB Justine Image – Landscape Architect, CoGB Karoline Klein – Landscape Architect, CoGB

Steering Committee

Lisa Ruffell – Councillor, CoGB (Chair from December 2008)

Trudi McClure – Former Councillor, CoGB (Chair until November 2008)

Jos Duivenvoorden – Director Presentation and Assets, CoGB

Richard Barley – Director, Melbourne Gardens, Royal Botanic Gardens

Jan Orr – Friends of Bendigo Botanic Gardens

Jane Cleary – Friends of Bendigo Botanic Gardens

Bob Sawyer – Epsom-Huntly Community Liaison Committee

Ross Brittain – White Hills Football, Netball Club

John Geary - White Hills Cricket Club

Russell Wakefield – White Hills Primary School

Justin Lloyd - Holy Rosary Primary School

Marg Gaskell

Ben Goonan - Bendigo Field Naturalists Club

Mark Scott – White Hills Swimming Pool Committee

Bill Dundas – Department of Sustainability and Environment

Jon Leevers – North Central Catchment Management Authority

Tim Buykx – Coordinator Landscape and Open Space Planning CoGB

Mitch Kemp – Coordinator Parks and Natural Environment CoGB

Kevin Walsh – Landscape Planner CoGB

Consultants

Professor Catherin Bull AM, Elizabeth Murdoch Chair of Landscape Architecture, University of Melbourne, Peer review **Paul Hadden**, Hadden Farren Land Surveyors

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Dr Peter May, May Horticulture Services

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Version

February 2010



Bendigo Botanic Gardens, White Hills – A garden that will celebrate the past, appreciate the present and embrace the future.







Botanic gardens are institutions holding documented collections of living plants for the purposes of scientific research, conservation, display and education. (Wyse Jackson 2000: 19)



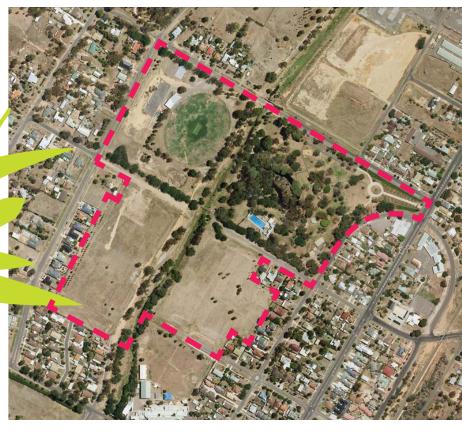
EXECUTIVE SUMMARY





EXECUTIVE SUMMARY





Site for Master Plan



Master Plan

Bendigo Botanic Gardens, White Hills Master Plan February 2010



EXECUTIVE SUMMARY

Project Overview

The Bendigo Botanic Gardens is a historic gardens site at White Hills where the original gardens were gazetted in 1858. After some decline over the last decades the City of Greater Bendigo decided to prepare a comprehensive and integrated master plan for the existing heritage site (approx. 6.4 Ha), the adjacent greenfields site (additional 9 Ha) and the White Hills Recreation Reserve. The master plan is intended to provide a long-term vision to secure the site well into the future and to create a place of pride and enjoyment for the community.

This document is the result of a very thorough planning process which started in late 2008 with the development of the Options Paper and in depth community consultation. The result of these early planning stages formed the brief for this master plan and delivered the basis for some key decisions by Council in regards to the future relocation of the pool and phasing out of the existing animal display.

Vision Statement

The Bendigo Botanic Gardens - A garden that will celebrate the past, appreciate the present and embrace the future.

Mission Statement

The Bendigo Botanic Gardens will be an inspiring and sustainable iconic landscape that provides diverse opportunities for learning about plants, horticulture, landscapes, botany, ecology, conservation and heritage; it will be a place for the enjoyment of the whole community.

Living Plant Collections Vision Statement

The Living Plant Collections of the Bendigo Botanic Gardens will tell the story of plants relevant to the Bendigo region, both indigenous and cultivated, and those suited to its current and projected climate.

Design philosophy and intent

The overall design for the future
Bendigo Botanic Gardens site has been
steered by the following principles.
Realising the core botanic garden roles for
display, education and conservation

Relevance to local context of Bendigo and central Victoria

Respecting the past – conforming with Burra Charter and Heritage Significance Assessment and Strategy

Leading into the future – contemporary design adaptable to future climate

Attractiveness to a wide range of user groups

Multi-functionality where possible

High quality design with the vision for a leading cultural institution

Equitable access and Environmental sustainability

Proposed Key Design Elements

Creating a Legacy for the Future

The development of the Bendigo Botanic Gardens is a legacy. Our forebears developed Bendigo's park system including the Botanic Gardens as a legacy to the current generation. It is now our opportunity to leave a legacy for our children and grandchildren. The Bendigo Botanic Gardens, once fully developed, will be a fundamental part of the psyche of the community. It will be held in the collective memory of residents and visitors and will provide an inspiring place for the future. The Gardens will be teaming with school children, learning and appreciating the environment in which they live, it will be busy with families and groups of friends enjoying picnics and social gatherings, it will be full of garden and plant enthusiasts seeking information to improve home gardens and it will be a significant tourist attraction attracting buses and many visitors to spend longer in the region and enjoy the Gardens. It is a project that will change the way in which Bendigo is seen regionally, and nationally. It will be a jewel in the crown of the Goldfields.







The design responded to the existing physical nature of the site by defining four quadrants along a 'Water Axis' (formed by the Bendigo Creek) and an 'Activity Axis' (along the Hamelin St road alignment).

The main proposals for each of the quadrants include the following:

Heritage Gardens (current extent of the Bendigo Botanic Gardens)

The Heritage Gardens will have a strong historic focus displaying gardening styles of the past. Proposed treatments include Reinstatement of the historic path network based on a 1934 aerial photo

Creation of heritage garden beds

Long-term reinstatement of the historic pine avenue on the current car park site

Reconstruction of the grape walk

Rebuilding of the historic shelter to modern standards

Phasing out of the animal collection as per Council resolution

Introduction of 'Golden Gardens'

Display of the Canna collections as a historically significant gardening element

Upgrading the Billabong area

Recreating the island location of the historic shelter by reconstructing a stretch of the former natural creek alignments

Long-term relocation of the pool to a new site

Reconstruction of the cast iron conservatory held by the City of Greater Bendigo

Garden for the Future (greenfields site east of the Bendigo Creek) This garden will hold the main new collections. It will be of a strong contemporary feel and draws on design inspirations of underlying geology, and rain fall/water theme overlayed by a cultural landscape grid.

The followings lists the key features: Sheared, gridded path network

Intensive botanic collections

Circular garden rooms for contemplation, gathering and outreach

'Geological Striation' plantings

Golden Gardens

Tree bosque

Experimental garden beds and home demonstration gardens

Shelters for outreach activities

'Home for Horticulture' and service yard

Botanic Park (greenfields site west of the Bendigo Creek) As a result of the options paper and in order to minimise development costs the Botanic Park was developed as an activity focussed, less intensively planted area with the gardens. The Botanic Park will include: The Arboretum (tree collection) featuring the local Eucalyptus collection

The River Paths

The Children's Garden - a play space for older children

Extensive BBQ areas for socialising, family get-togethers and the like

An irrigated, multi-purpose events and training space

White Hills Recreation Reserve

While largely remaining unchanged some additional features have been proposed for the reserve site Substantial car parking

Spectator mounds

Continuation of striated plantings through the site for shade and improved amenity

Upgrades to the path network

Activity Axis and Water Axis

The four quadrants will be defined and accessed by two major axes:The 'Activity Axis' and the 'Water Axis'.

The Activity Axis runs along the Hamelin St road alignment (proposed to be fully included into the gardens). This axis will feature: The ceremonial main entrance leading

towards the Plaza and pergola structure Central iconic building with café, meeting

rooms, office facilities and bridal rooms Steps and promenade overlooking the ponds Circular, vehicle rated bridge over the ponds

Central planting feature

Palm avenue and mirrored entrance sequence on the western side

The Water Axis utilises the Bendigo Creek as the key natural feature of the site. Along this axis the following elements are proposed: Central ponds with bridges, pontoons and belvederes to create

Reshaping of the now straight creek bed and establishment of riparian vegetation for education, conservation and WSUD purposes

Smaller southern pond/wetland

access to the water

Anticipated Visitation and Economic benefits

The vision for the rejuvenated and extended Bendigo Botanic Gardens is that of an outstanding cultural institution of regional importance.

Along with the physical implementation the gardens will increasingly create economic benefits for the city and the region. Some modeling in regards to anticipated visitation has been undertaken. A medium case scenario canvases a visitation of 150,000 people per year.

This could result in direct increased tourism spending of around \$0.75 - 1.5million annually for the Bendigo economy.

Additional benefits accrue from having a quality Botanic Gardens. These include: enhancing Bendigo's life style qualities and attracting new residents to the city, offering a free, family friendly open space; providing a beautiful space for community gatherings and events such as weddings and family reunions; offering opportunities to learn about plants and gardening and about our natural environment and cultural heritage; having a place for quiet respite; and providing a unique space for children to become involved with nature and plants in a safe and engaging way.

Staging and Funding the Project

The Bendigo Botanic Gardens is a visionary project that will leave a lasting legacy for future generations in Bendigo and the region. The costs should not be seen as purely a dollar figure, but as an equation about 'return on investment'. The return will be lasting and continuous.

The Bendigo Botanic Gardens development is a long term project over the next 10 - 15years. It is anticipated that the cost of the project (excluding a new aquatic facility) will be in the order of \$21.0 - \$27.3 million.

Staging will be required in order to deliver quality outcomes as well as securing appropriate funding. A project of this size cannot be financed by the City of Greater Bendigo alone. Additional funding will be sought from state, federal and philanthropic sources. Organisations that have funded

botanic gardens projects in the past include the Ian Potter Foundation, the Myer Foundation and the Colonial foundation.

Recommendations

A number of key recommendations are made in relation to this Master Plan. These are: Adopt the Master Plan

Adopt the Living Plant Collections Plan

Appoint Curator

Appoint Education Officer

Review Management and staffing

Investigate Land reservations and zonings

Investigate Land acquisitions and sales Investigate traffic issues

Investigate hydrological issues

Develop a Management Plan

Develop a Marketing Plan

Develop an Education Plan

Develop an Events Programme

Further develop a cycle path plan

Commission a Cultural Heritage Management Plan

Establish the Bendigo Botanic Gardens Foundation

Create a 'Home for Horticulture'





THE VISION

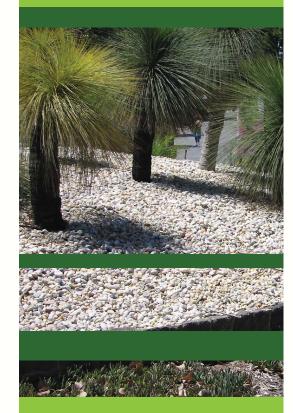
Bendigo Botanic Gardens, White Hills – A garden that will celebrate the past, appreciate the present and embrace the future.











A botanic garden should be developed to provide opportunities for learning about plants, horticulture and ecology



A well designed botanic gardens will produce a valued and well utilised public place for the whole community

THE VISION

Living Plant Collections Vision Statement

The Living Plant Collections of the Bendigo Botanic Gardens will tell the story of plants relevant to the Bendigo region, both indigenous and cultivated, and those suited to its current and projected climate.





KEY MESSAGE

Together we can create a better future by immersing ourselves in nature's diversity and beauty and learning how to live sustainably and care for our environment.

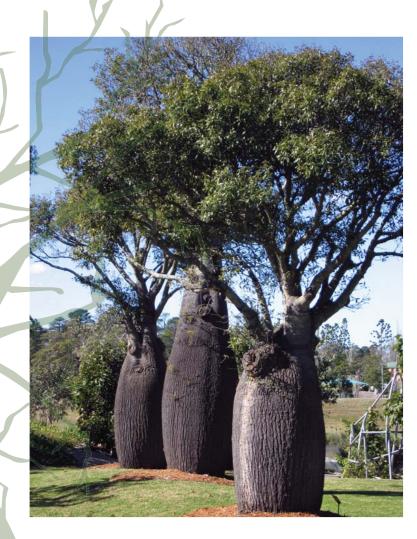


KEY DIRECTIONS

The stated strategic objectives of the City of Greater Bendigo Council Plan 2009-2013 that are relevant to the rejuvenation and extension of the Bendigo Botanic Gardens. Under 'Community Assets' a stated strategy is to 'develop and enhance public places, open spaces and active and passive recreation facilities to meet community needs'. (CoGB Council Plan 2009:12)

There are number of other stated strategies that are particularly relevant and these include: 'Be responsible stewards of community resources and assets'; (CoGB Council Plan 2009:12) and 'Promote Greater Bendigo as a place to invest and visit' (CoGB Council Plan 2009:18)

The following Key Directions Statements have been developed to provide a framework around the planning, design and subsequent operation of the Bendigo Botanic Gardens. Key Directions Statements enable proposals to be 'measured' against the identified development and operational philosophies to determine whether appropriate. They help to guide the design and uses of the Gardens.



The strong architectural form of some plant species helps to build iconic and memorable images for visitors





The Botanic Gardens at White Hills, Bendigo has a long history worthy of conservation (Elaine Harrington, private collection)



The Whirrakee Wattle (Acacia williamsonii) is a rare species indigenous to the greater Bendigo area



I.0 THE VISION

Table 1.1: Key Direction Statements



Criteria	No.	Key Direction	Basis
Educational	2	The Bendigo Botanic Gardens will be developed to provide educational opportunities and experiences related to plants, horticulture, botany, landscape, ecology, conservation, sustainability and landscape heritage. The Gardens will be developed to	A core role of a botanic gardens is that of education in these areas. Providing strong support to the education sector is a key action of the strategy to help maintain and grow jobs in the community in the Council Plan 2009-2013. Providing education and awareness on environmental issues is a key commitment in the Council's Open Space Strategy, 2005.
		provide educational opportunities and experiences for people of all levels and abilities. These educational opportunities can be formal, informal, active or passive.	
Heritage	3	The BBG will value our landscape heritage and heritage plants.	Council acknowledges its obligation to restore, conserve and promote the culturally significant Bendigo Botanic Gardens, White Hills. Being responsible stewards of community resources and assets is a strategy in the Council Plan 2009-2013.
Living Plant Collections	4	The BBG will develop a Living Plant Collections Plan which will guide planting within the Gardens	A clearly stated policy ensures consistency of vision and purpose and, in turn, the plantings provide opportunities for education on a range of topics. Protecting, maintaining and restoring the natural landscape is a strategy in the Council Plan 2009-2013. Key actions include enhancing the biodiversity of land managed by the City of Greater Bendigo and to re-establish native plantings where appropriate. Providing education and awareness on environmental issues is a key commitment in the Council's Open Space Strategy, 2005.
	5	The BBG will be a key site in Bendigo for the interpretation of landscapes and plant communities.	A core role of botanic gardens is education on ecology and plant communities as well as conservation of rare, threatened or endangered species and education about same. Providing education and awareness on environmental issues is a key commitment in the Council's Open Space Strategy, 2005.
	6	The Gardens will feature a range of plant and landscape environments.	This broadens the appeal and offers a range of experiences and educational opportunities. To develop and enhance public places, open spaces and active and passive recreation facilities to meet community needs is a strategy in the Council Plan 2009-2013. Providing a diversity of opportunities for quality experiences, enjoyment and beneficial outcomes is a key strategy of the Open Space Strategy 2005.

I.0 THE VISION

Table 1.1 Cont.: Key Direction Statements

Criteria	No.	Key Direction	Basis
Environmental sustainability	7	Landscapes, plantings, buildings and infrastructure will be created and maintained with sustainability best practice.	The BBG will lead by example in the area of environmental sustainability. Through interpretation of the sustainability aspects of the site the Gardens will take a leading role in public and school-based education. Four strategies of the Council Plan 2009-2013 directly relate to the development of the BBG. These are: Adopt and promote environmentally sustainable practices; Be a leader in water management practices; Adopt and promote practices that are environmentally sustainable by protecting, maintaining and restoring the natural environment; and Address the impacts of climate change and reduce greenhouse gas emissions.
Accessibility	8	The BBG will be developed as an accessible space for all.	Council has a continued commitment to the principles of universal access and social inclusion. Universal access is the key strategy of the Community Access and Inclusion Plan 2006-2009.
Recreation	9	The BBG will provide a space for passive recreation, as well as appropriate outdoor events.	The Gardens is a place for rest and renewal and a place for social and community connectedness. To develop and enhance public places, open spaces and active and passive recreation facilities to meet community needs is a strategy in the Council Plan 2009-2013. Providing a diversity of opportunities for quality experiences, enjoyment and beneficial outcomes is a key strategy of the Open Space Strategy 2005.
	10	The adjoining White Hills Recreation Reserve will provide a range of opportunities for active recreation.	The tradition of active recreation on the former acclimatisation paddock should continue. To develop and enhance public places, open spaces and active and passive recreation facilities to meet community needs is a strategy in the Council Plan 2009-2013.
Economic	11	The BBG will be a destination place for visitors to the city.	The Council understands the value of tourism to the local economy and that a range of attractions enhances the city's appeal to external visitors. The rejuvenation and extension will add to the suite of heritage and contemporary attractions and cultural institutions that make Bendigo a desirable visitor destination. To promote Bendigo as a place to invest and visit is a strategy stated in the Council Plan 2009-2013.



A botanic gardens can provide a variety of educational, experiential and recreational opportunities for visitors





The new Australian Garden at the Royal Botanic Gardens Cranbourne has become a national and international tourist attraction, and has encouraged whole new segments of the community to experience Botanic Gardens.





Artist's Impression of the developed Bendigo Botanic Gardens White Hills from the western entrance path looking over the events/training space to the BBQ area and Childrens' Garden







Artists Impression of the developed Bendigo Botanic Gardens White Hills from the western side of an improved Bendigo Creek showing deepened creek, wetlands and a central building

Element

2.1 Opportunities and Constraints

The following tables show a list of the various opportunities and constraints for various areas covered in the Bendigo Botanic Gardens Master Plan. These identify issues to be addressed and potential opportunities that arise from these.

2.2 Heritage Precinct

Constraints

Living Plant Collect	tions	
Living Plant Collections	No formally identified or managed collections	Open book as to the number, types and sizes of collections that can be held
Existing Trees and Shrubs	Some are reaching end of useful life.	Replacement with like propagated from existing plants Reintroduction of previously
		grown species
		Introduction of new and broader range of 'botanic' species
		Phasing of new planting to allow for renewal and succession while maintaining canopy cover
Other Landscape E	lements	
Shrubberies	Loss of shrubberies over the years has altered the landscape	Reintroduction of shrubberies will bring back some of the 19th Century character
	character and reduced	Allows for greater plant diversity
	plant diversity.	Opportunity to frame views, create mystery, ameliorate sun and wind effects
Annual Beds		Available recycled water allows annual displays not possible elsewhere.
Lawns	Lack of water has created poor quality lawns.	Use of recycled water available to site will mean good quality lawns for passive recreation
Billabong	Lack of water means billabong not a constant water body.	Signage to interpret the billabong, its history, vegetation and fauna
	Lack of public understanding about the billabong	Reinstatement of island as per Heritage Significance Assessment and Strategy (HSAS)
Asphalt Paths	Some are incomplete. Most not aligned with	Positioning of paths to reflect original layout as per heritage best
	original path networks	practice and Burra Charter
Gravel Paths		Positioning of paths to reflect original layout

Opportunities



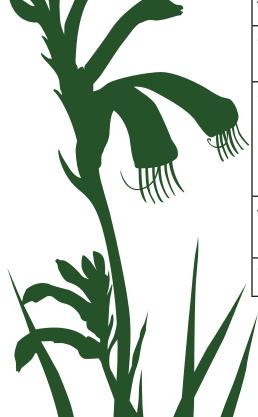


Displays of flowering annuals will be possible because of the availability of recycled water



There is an opportunity at the Botanic Gardens to reinstate the original border planting, improving the heritage values of the site









Element	Constraints	Opportunities
'French Renaissance' Garden	Inappropriate introduction of new element to heritage site	Reinstatement of earlier layout to highlight Gardens' history
Animal Collection		
Animal Collection	Public expectations of animal and bird collections has changed Occupational Health & Safety (OH&S) concerns with current collection	Phase out the animal and bird collections over time as per Council resolution 6 May 2009 based on community consultation on the Options Paper in Feb/March 2009
Napoleon Crescent Wallabies	Too many for the space to allow landscape renewal Proximity to boundary makes animals susceptible to attack	Phase out animal collection over time as per Council resolution 6 May 2009 based on community consultation on the Options Paper in Feb/March 2009 Reduce numbers to more manageable levels in the interim
Hamelin Street Kangaroos	Large animals that are difficult to manage and pose OH&S concerns Too many for the space Prevents re-instatement of original major path in this area	Remove kangaroos as soon as possible over time as per Council resolution 6 May 2009 based on community consultation on the Options Paper in Feb/March 2009 Reinstate path(s) here as per HSAS

Table 2.1 Cont.: Opportunities & Constraints - Heritage Precinct



Gardens can provide good venues for activities such as Tai Chi, contributing to community health and social connectedness



Artwork installations within gardens provide cultural richness to the landscape and assist in the development of a sense of place

Element	Constraints	Opportunities
Cockatoos in Cockatoo Cage	Insufficient space for birds of this size Vermin problems.	Phase out over time as per Council resolution 6 May 2009 based on community consultation on the Options Paper in Feb/March 2009
		Remove structure
Walk-through Aviary	Birds open to attack by visitors Vermin	Phase out over time as per Council resolution 6 May 2009 based on community consultation on the Options Paper in Feb/March 2009
Public Facilities		
Swimming Pool	Destruction of part of the original Gardens layout and water feature Active recreation within passive recreation zone Outdated facility in poor condition	Construction of new aquatic facility in the vicinity, as per community input and council resolution of 6 May 2009 over time as per Council resolution 6 May 2009 based on community consultation on the Options Paper in Feb/March 2009 Removal allows reinstatement of earlier Gardens features Removal allows continuity of movement between old and new sections of Gardens
Public Toilets	Difficult access for people with disabilities Lack of appropriate baby change facilities Inappropriate location Unattractive Poor condition	New toilet facilities meeting modern standards New buildings to meet ESD standards
Barbecues	Inappropriate in heritage site	Create new dedicated barbecue area(s) in other part(s) of the site
Play Equipment	Provides limited play opportunities	Create dedicated Children's Garden as plant based alternative Assess equipment and placement in the broader context of site Master Plan
Picnic Shelter	Maintenance required Floor is unfinished. No interpretation	Carry out maintenance and create level flooring Add interpretation of shelter's history

Table 2.1 Cont.: Opportunities & Constraints - Heritage Precinct

Bendigo Botanic Gardens, White Hills Master Plan February 2010



Element	Construciones	0
Element	Constraints	Opportunities
Park Furniture	Generic settings give no indication of cultural significance of site	Design and install consistent suite of sympathetic furniture to reinforce sense of place
Car Parking	Current car park precludes reinstatement of avenue of conifers as recommended in HSAS	Provide additional car parking in Scott St Remove internal car park and reinstate conifer avenue
Samuel Gadd Centre (SGC)	Unattractive building, inadequate staff facilities, inadequate space for meetings, public education programme, etc	Create new multi-use facilities building at end of life of SGC
Works Facilities & In		
Depot, Sheds	Inadequate for	Assess needs and position of
and Yard	rejuvenated and expanded site	facilities in design process
Taps, etc	Inadequate for current site	Assess needs and position in design process
External Power Points	Adequate for current staffing and use patterns	Assess needs and position in design process depending on facilities
Stormwater	Currently adequate	Assess in design process
Boundary Fences and Gates	Adequate	Additional fences and gates required for greenfield site
Security	Adequate	New security regime required for greenfield site, particularly at lock up
Structures		<u> </u>
Arch of Triumph	Original layout setting removed.	Reinstate picket fence with hedge behind as per HSA&S
Interpretation		
Wayfinding Signs	Insufficient to direct visitors to site	Increase number and prominence of wayfinding signage.
Thematic Signs	Lack of continuity. Signage fades in daylight. Perspex liable to crack and craze and susceptible to vandal damage.	Create site specific graphics, with new logo/icon to establish branding and reinforce sense of place. Materials choice to address vandalism, longevity, etc
Plant Labelling	Inconsistent and too few	Create consistent and accurate plant labelling styles and system. Aim for high percentage of plants to be labelled (eg 90%)

Table 2.1 Cont.: Opportunities & Constraints - Heritage Precinct

2.3 White Hills Recreation Reserve (WHRR)

Element	Constraints	Opportunities
Facilities		
Oval	N/A	Further develop as a high quality playing surface
Netball Courts	N/A	New courts recently finished
Old Netball Courts		Can be removed and the area used for other purposes.
Cricket Nets	N/A	Continue to provide for training
Pavilion	Poor condition	New pavilion recently completed
Fences	Poor Condition	New fences recently finished
Taps, Irrigation, Etc	Not yet assessed	Assess and install as required
Power	Not yet assessed	Assess and install as required
External Power Points	Inadequate	Assess and install as required
Stormwater	Not yet assessed	Assess and install as required
Security	Not yet assessed	Assess and install as required
Seating	Not yet assessed	Create new seating between pavilion and western edge of oval
		Further assessment required.
Carparking	Informal	Formalise to minimise site impact and maximise use of remaining space
Rubbish Bins	Not yet assessed	Assess and install as required
Scoreboard	Not yet assessed	Assess and make recommendations as required
Scott Street Entry	Considered dangerous	Assess traffic movements and create alternative and/or safer site access

Table 2.2: Opportunities & Constraints - WHRR



Existing vegetation at the Bendigo Creek is largely weed species



Existing facilities at the White Hills Recreation Reserve



2.4 Creek Precinct

Element	Constraints	Opportunities
Vegetation		
Existing Vegetation	Mostly weed species or planted natives	Chance to remove weeds and reinstate original vegetation and/or exemplars of riparian vegetation from elsewhere. Re-shaping of creek to form wetlands, ornamental water body, etc.
Bicycle/walking Tracl	<	
Evicting Track	Daga not link to	Crooks additional links

Botanic gardens can interpret naturally occuring
andscapes, presenting landscape 'tableaus' of
particular onvironments

7		
	LOWWATER	18/18
	USAGERIANTS	420.0
973	Xerophytic is the name given to plants that can	
		44400
*217	When grouped together in a planting, these plants	Sec.
	can be used to create a garden of interest within the landscape such as in this situation. The individual	
	little additional watering.	
		The state of
		1800
1		10 March 1997
100		

Botanic gardens can address cultural issues such as water use, educating visitors and encouraging behaviour change in the community

Liement	Constraints	Opportunities
Vegetation		
Existing Vegetation	Mostly weed species or planted natives	Chance to remove weeds and reinstate original vegetation and/or exemplars of riparian vegetation from elsewhere.
		Re-shaping of creek to form wetlands, ornamental water body, etc.
Bicycle/walking Trac	k	
Existing Track	Does not link to	Create additional links
	recreation reserve, north-west, school, etc.	
Facilities		
Sewerage Pump	Ugly, inappropriate	Consider relocation
Station	location in landscape	Screen with structure and/or vegetation if not relocated
Bridge		Additional bridges to allow for other crossing points, service vehicles, etc.
		New bridge(s) link to school, recreation reserve, etc.
		Bridges can be focal points in their own right and also viewing platforms
Creek Bed		
Straight alignment	Uninspiring, unattractive technical solution	re-align creek bed introducing natural, meandering forms
	Open water and riparian vegetation is inaccessible	create safe access to wetlands, vegetation and water
Flood storage	Flood storage volume needs to be maintained	Construction of deep ponds may increase storage volume
Environmental quality	Potential for contamination from former Gas Works site	Opportunity for remediation of creek bed and improved water quality down-stream

Table 2.3: Opportunities & Constraints - Creek Precinct

2.5 Greenfield Precinct

Element	Constraints	Opportunities
Vegetation		
Existing Vegetation	Mostly plantings of little significance	Chance to start afresh with new plantings in line with new design and plant collections policies
Facilities/ & Infrastr	ucture	
Stormwater	Existing easement	Create stormwater regime that demonstrates 'best practice' in water sensitive urban design
Overland Flooding	Flat, uninteresting ground Flood regime needs to be allowed for	Create interesting contours and landforms while maintaining one-in-one-hundred-year flooding requirements
Sewerage	Existing sewerage line dissects site in south-west	Relocate to allow other earthworks opportunities. Leave and tap in new facilities such as toilets, etc.
Fencing	Various styles, colours, heights and qualities of domestic fencing provide lack of security and continuity	Modify site layout/urban design to provide frontage to Botanic Gardens where possible Border plantings to disguise fencing will also give opportunity for additional plantings
		Border plantings give sense of enclosure to the space and feeling of removal from surrounding busy roads, etc.
Security	Open access means rare plants could be stolen and/or damaged and facilities vandalised	Site fenced with security fencing to reduce theft, vandalism, etc.
Roads	Incomplete roads (such as Hamelin, Sharyn, Bosquet Streets and Louey Drive) reduce access, parking etc.	New major entrance to the Gardens can be created in a road such as Hamelin Street Additional parking, pick up and drop off, etc can be created Connected road network with no dead ends will allow for effective traffic circulation, servicing etc.

Table 2.4: Opportunities & Constraints - Greenfield Precinct

ECONOMIC BENEFITS



2.6 Economic Benefits

2.6.1 Potential Visitor Numbers and Economic Benefits

The core objective of the Bendigo Botanic Gardens is to provide learning and passive recreation opportunities for the wider community. In an attempt to quantify potential visitor numbers the following figures based on a range of potential user groups have been compiled. It should be noted that as with any estimation some assumptions had to be made. This is also reflected in the range given through providing worst-case to best-case scenarios. Nevertheless, the following figures provide an overview over potential visitor numbers. It is expected that visitation will grow commensurate with the physical implementation of the gardens.

2.6.2 Potential User Groups

Primary and Secondary School Children from Bendigo

The population data provided to the City states a figure of $\sim 17,400$ children at the age of 5-17 years living in Bendigo. With the high number of educational opportunities within the BBG the following scenarios have been developed:

Visitor Type	Worst	Medium	Best
	Case:	Case:	Case:
	30 %	60 %	90 %
Bendigo		·	_
children			
aged 5 - 17,			
visiting			
as part			
of their			
curriculum;			
Total of	5,200	10,400	15,660
17,400	•		-

Primary School Children + Secondary School Children from other areas: Campaspe Shire and Mt. Alexander Shire

It is anticipated the future Bendigo Botanic Gardens will also be used for educational purposes by schools in regional Victoria for a "day out" to the gardens. Approx. 3,000 children (age 5 – 17) live in Mt.Alexander Shire and approx. 7,000 children live in Campaspe Shire .

Visitor Type	Worst Case: 30 %	Medium Case: 60 %	Best Case: 90 %
Mt. Alexander Shire children aged 5 – 17 visiting as part of their curriculum;			
Total of 3,000	900	1,800	2,700
Campaspe Shire,			
7,000	2,100	4,200	6,300
Total:	3,000	6,000	9,000

area for White Hills and Jackass Flat.
Recreational walking is the most popular sporting activity in Victoria with a participation rate of approx. 38.8 % across the whole population (Australian Sports

Approx. 2,900 residents live in the statistical

Local Residents & Regular Visitors

Commission 2009). This results in a potential number of walkers of around 1,125 people in the area. Obviously many of these walk within their local neighbourhood, but even assuming a weekly visit of only 10 % of the walking community could generate 5,900 visits to the gardens.

Visitor	Worst	Medium	Best
Туре	case:	Case:	case:
	10 %	20 %	30 %
White Hills Walking population: 1,125	113	225	340
Visits I x week: =	10,000	20,000	30,000
factor of 52	5,900 visits	11,700 visits	17,700 visits

Bendigo Residents

The current estimated population for Bendigo in 2009 is close to 100,000. The parks will offer a great range of opportunities for learning, play and family activities like family-reunions or socialising with friends in the park. A conservative estimation of one visit per year to the park would result in the following visitation estimates:

Visitor	Worst	Medium	Best
Туре	Case:	Case:	Case:
	10 %	20 %	30 %
Bendigo Population, I visit per year:	10,000	20,000	30,000

Day Visitors
to Bendigo: I.72 million
Due to its high number this visitor
group offers a large potential.
Given that a visit would require I – 2
hours, it is assumed that only a very low
percentage of people visiting Bendigo
for a day trip would visit the gardens.



The new extension to the Geelong Botanic Gardens has resulted in an increase in visitation from 70,000 to 210,000 per year



The Albury Botanic Gardens shows a range of plant types and spatial experiences for visitors.

Albury/Wodonga is comparable in population to Bendigo and the Albury Gardens attracts over 200,000 visitors per year



Visitor Type	Worst Case: I %	Medium Case: 2 %	Best Case: 3 %
Bendigo Day Visitors:			
1,720,000	17,200	34,400	51,600

Domestic Overnight Visitors
to the Bendigo-Loddon Region:
746,000 visitors
Of this large number of visitors
the statistics nominate that
50 % are visiting friends + family
and 26 % do sightseeing.
This relates to a figure of 193,960 visitors
undertaking sightseeing activities.

Visitor Type	Worst Case: 10 %	Medium Case: 20 %	Best Case: 30 %
Bendigo Domestic Overnight Visitors sightseeing:			
193,960	19,400	38,800	58,200

International Tourists

16

Bendigo-Loddon Region: 12,800 visitors A visit to a botanic garden is a popular activity with international tourists. Up to 30 % of international tourists nominated this activity as one of their holiday pursuits.

Visitor	Worst	Medium	Best
Туре	Case: 35	Case: 50	Case: 65
	trips	trips	trips
Coach			
trips,			
40	1,400	2,000	3,400
visitors			
to a			
coach			

Visitors to Events Space

The Botanic Park will offer a purpose built smaller events space for cultural events like open air cinema, music performances or food festivals. This venue could also accommodate private groups and public gatherings like Australia Day celebrations, Family Fun Day or similar. It is expected that visitors will take the opportunity to explore the botanic garden proper out of curiosity or may be enticed to revisit at a later date. An estimation of potential visitor numbers is very difficult to undertake. A food festival over a whole weekend could easily attract 2,000 people, whereas a small concert may only have an audience of 200.

_ 			
Visitor	Worst	Medium	Best
Туре	Case:	Case:	Case:
Visitors	Average	Average	Average
to the	of 300	of 500	of 700
event	people	people	people
space:	per	per	per
	event:	event:	event:
15 Events	4,500	7,500	10,500
per year			
(assumed			
number)			

The Children's Garden in combination with the play space for older children and an extended ball games area (on the events space) is intended to become the major high quality play precinct of regional importance. The precinct will provide opportunities for a wide range of age groups. Additional infrastructure like the BBQ shelters and nearby café of the central building will enhance the experience for whole families.

Visitors to Children's Garden / Play Space

enhance the experience for whole fa
The following figures have been
assumed, based on anecdotal
observation in various play spaces.

Visitor Type	Worst Case:	Medium Case:	Best Case:
Visitors to the Children's Garden and play precinct	Average of 300 people per week:	Average of 500 people per week:	Average of 700 people per week:
40 weeks (low use in winter has been omitted)	12,000	20,000	28,000

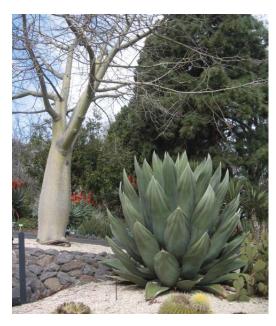
Other

The Bendigo Botanic Gardens may attract other groups like tertiary students in the horticultural industry. The co-location with the White Hill Recreation Reserve and the Swimming Lagoon will advertise the gardens to sports orientated groups of the community. Visitation from these user groups is difficult to estimate and has therefore been omitted.



2.6.3 Potential Annual Visitation To Bendigo Botanic Gardens

TOTAL (rounded)	80,000	153,000	239,000
Lagoon and tertiary students			
Reserve, Swimming	no ngui es avanable	no ngui es avanable	no figures available
Users of Sports	no figures available	no figures available	no figures available
Children's Garden	12,000	20,000	28,000
Events Space	4,500	7,500	10,500
Coach Trips	1,400	2,000	3,400
International Visitors	1,300	2,600	3,840
Bendigo Domestic Overnight Visitors:	19,400	38,800	58,200
Bendigo Day Visitors:	16,900	33,800	63,000
Bendigo Population, I visit per year:	10,000	20,000	30,000
Local community	5,900	11,700	17,600
Neighbouring municipalities' children aged 5 – 17 as part of their curriculum;	3,000	6,000	9,000
Bendigo children aged 5 – 17 as part of their curriculum;	5,200	10,400	15,660
Visitor Type	Worst Case:	Medium Case:	Best Case:



Geelong Botanic Gardens experienced an increase from 70,000 to 210,000 visitors per year following the expansion and redevelopment. They are soon to begin another extension.



2.6.4 Factors Influencing Visitation

The success of the Bendigo Botanic Gardens will be measured by visitor numbers. It is important to note that the development of Bendigo Botanic Gardens as a major cultural place requires active promotion and cannot rely solely on infrastructure investment. The following factors influencing visitation have been identified:

Staged Infrastructure Development

Due to the substantial financial investment required the construction of the Botanic Gardens will span over a period of 10-15 years. Careful staging is required to deliver functional 'stand alone' sections of the gardens that are sufficiently attractive to generate interest by themselves. The long-term nature of plant establishment has also to be considered. It is anticipated that visitor numbers will rise as the garden develop from the initial stages to a complete project.

Presentation

The ever-changing nature of living gardens inherently requires on-going maintenance. As a public space and cultural institution the quality of presentation (plantings presentation, changing annual displays and similar) will influence visitor satisfaction and consequently its reputation. Adequate staffing is important to maintain high standard of presentation and thus the value of the investment.

Events + Botanical programs
In order to attract a wide cross-section
of the local community into the gardens
an events space has been integrated into
the design. This will generate visitation
by people which previously may not

have considered a visit to the gardens.

Botanical programs tailored to horticulturally interested as well as non-horticultural visitors will anchor the gardens as a centre for learning and garden-experiences on all levels within the horticultural field and the wider community.

Marketing

Marketing is an essential tool in order to reconnect the public with the gardens. After long years of little activity, the community of Bendigo will need to be 'reminded' of the revitalised Bendigo Botanic Gardens. Additionally, on a regional level the site requires introduction and promotion to tourism operators and tourism bodies on all levels with the objective to make it a well known, tourism destination. The development of a marketing strategy is one of the implementation recommendations (refer chapter Chapter 6, paragraph 6.1.10 "Develop a Marketing Plan").

2.6.5 Economic Benefits

A well established Bendigo Botanic Gardens will bring a large array of economic benefits to the city and its residents.

By adding a major, regional tourism destination to the existing range of cultural attractions Bendigo will strengthen its position in the tourism market.

A well rounded suite of cultural opportunities will positively influence the decision for future residents and students to make Bendigo their choice for a place to live and work.

Direct economic benefits will include:

Increased spending by visitors for extended stays (increased number of visitor nights)

Increased spending for holiday related goods and services (petrol, food, merchandise)

Creation of additional employment related to the gardens

Attracting horticultural exhibitions, seminars or conferences to the city

Potential revenue from carbon credits

Whilst far more difficult to gauge or measure, indirect economic effects may include the following.

Flow-on effects from increased hospitality revenue

Enhanced reputation for Bendigo as an attractive place to live, thus attracting well educated, skilled people as well as students into the city.

Providing a free-of-cost, healthy opportunity for families for a day out.

Reduced medical costs for treatment of life style related diseases (e.g. heart disease, mental illness etc.)

Greater community resilience due to social coherence and pride of place. This is important in times of crisis (e.g. during the recent bush fires or times of economic down-turn).

Change of community behaviour in regards to water consumption in gardens

Economic modeling is beyond the scope of this master plan, but some examples have been chosen to illustrate the potential financial returns on the investment:

The medium case scenario for visitation by primary and secondary students gives a figure of approx. I 6,400 children, which would visit the gardens annually. With a modest cost contribution of \$ 6.00 per student the revenue raised of approx. \$ 98,400 could safely finance the position for an education officer.

As per medium case scenario above approx. 75,200 visitors from outside Bendigo could visit the gardens. If an additional expenditure of \$ 10.00 for each non-Bendigo visitor is assumed, direct financial return could be calculated as \$ 750,000 per annum.

For an assumed extra spending of \$ 20.00 during their entire stay an extra \$ 1.5 million per year towards the tourism industry would be generated.



Royal Melbourne Botanic Gardens receives 1.4 Million visits per year, and is a major tourist drawcard and an economic benefit for Melbourne. It is a fundamental part of the Victorian community and a valued cultural institution







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The Bendigo Botanic Gardens, White Hills Master Plan was an internal City of Greater Bendigo (CoGB) project managed by the Landscape and Open Space Planning team (refer Acknowledgements).

Consultation has been undertaken throughout the process in three major initiatives.

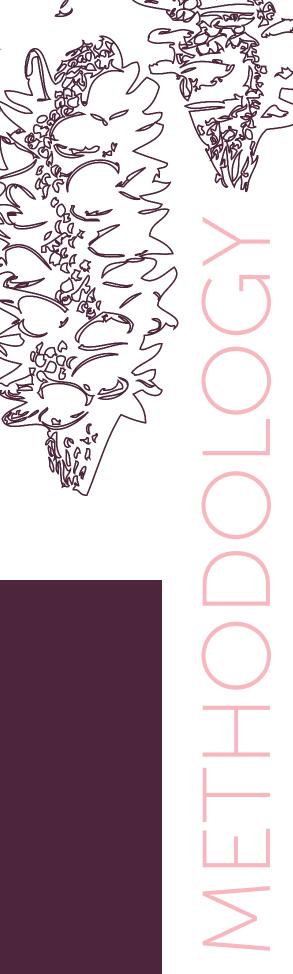
As a precedent to the Master Plan, a Heritage Significance Assessment and Strategy (HSAS) for the existing gardens was produced in 2007, with the major recommendations of this adopted by council in September 2007.

The Master Plan process was begun in mid-2008. A steering committee was appointed, chaired by ward councillor Trudi McClure until November 2008 and by Cr Lisa Ruffell from December 2008 on. The steering committee included representatives of major stakeholders, as well as the Director of the Royal Botanic Gardens, Melbourne (RBGM) (refer Acknowledgements).

3.2 Consultation

3.2.1 Stakeholder meetings

Meetings with various stakeholder groups have been held throughout the design process. These both informed the stakeholders but also allowed them to have input into the developing plan. In response to early input from the stakeholders, a set of key elements to include in the Gardens was determined. A Vision and Mission Statement was created along with Key Directions Statements and these were intended to guide further design.





Bendigo Botanic Gardens, White Hills Master Plan February 2010

3.0 COMMUNITY ENGAGEMENT AND PEER REVIEW

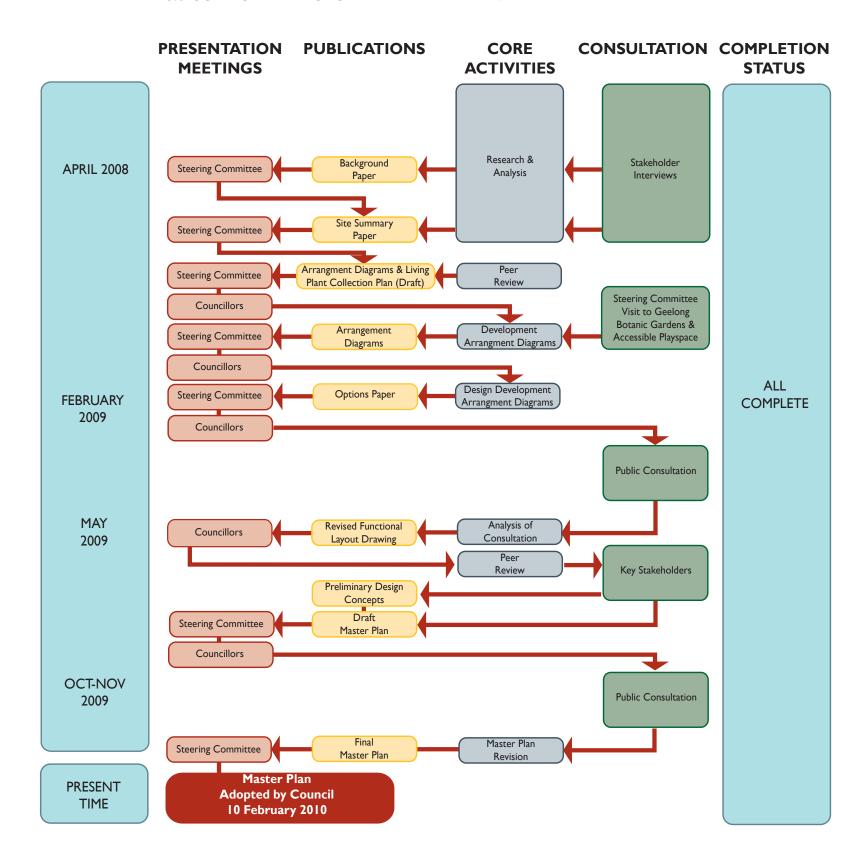
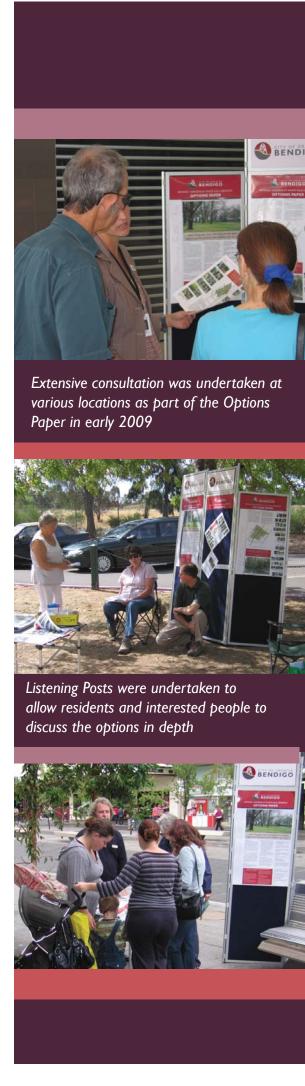


Fig 3.1 Flowchart detailing consultation, activities, publications, reporting points and date of Adoption for the Botanic Gardens White Hills, Bendigo Master Plan Project







The Options Paper was publicised through the distribution of a Brochure to many local households and stakeholders



The future of the animal collection was a key issue needing clarification before the Master Plan process could continue

The list of groups consulted is extensive and significant effort has been put into contacting as many relvant groups as possible. The list includes all the relevant City of Greater Bendigo Business Units as well as many external community groups: Friends of Bendigo Botanic Gardens White Hills Swimming Pool Committee White Hills Football Netball Club White Hills Cricket Club White Hills Junior Cricket Club Bendigo Field Naturalists Royal Botanic Gardens Melbourne **Epsom-Huntly Community** Liaison Committee Holy Rosary Primary School White Hills Primary School Bendigo Regional Institute of Tafe Department of Sustainability and Environment

3.2.2 Options Paper Consultation

North Central Catchment

Heritage Victoria

Bendigo Garden Club

Bendigo Native Plant Group

Round-about Gardeners

Bendigo Bonsai Club

Management Authority

Uncle Brien Nelson and Judith Perry

An Options Paper was released for six weeks of public comment in February 2009. This paper incorporated a set of three alternative Preliminary Options drawings, and a detailed background study of the site.

The intention of the Options Paper was to give readers an understanding of what a botanic gardens is, along with its roles and benefits. It also outlines where the Botanic Gardens sits within the various strategies, plans and policies of the City of Greater Bendigo (CoGB).

Input was sought on the entire contents of the Options Paper, and in particular, on three issues which needed clarification before the Master Plan process could move onto the next stage. These were: the future of the animal collection; the type of aquatic facility and the arrangement of the key elements.

3.2.3 Options Paper Consultation Results

From the 78 submissions received it was possible to make conclusions about the community's position on a range of issues. A summary of these issues was put before the Greater Bendigo Council on 6 May 2009 for resolution. At this meeting it was agreed that the Gardens be referred to as the Bendigo Botanic Gardens, White Hills. There was also agreement that the animal collection should be phased out.

The Council also resolved to 'commence development of plans for a new swimming! aquatic facility and remove the existing swimming pool once an alternative is provided.' The Options Paper had presented several options including retention of the existing pool, a water play facility and a swimming lagoon. No clear preference for a replacement facility was indicated in the feedback and this needs further investigation as the new facility is designed.

The three Preliminary Options plans also generated considerable interest. It was clear that a further version of the layout of the elements within the overall site was required. This final version - referred to as the Preferred Functional Layout plan - was a combination of arrangements from the various options plans. This too was put to Council for approval and at the same meeting of 6 May 2009 the Council resolved 'that the Master Plan be generally in accordance with the Preferred Functional Layout diagram'.

3.2.4 Draft Master Plan Consultation

The Draft Master Plan was developed based on the results of community input and peer review and was made available for further community consultation.

The community engagement period for this phase of the Master Plan development period lasted 6 weeks and concluded on 27 November, 2009 and began with the Draft Master Plan being placed on the Council's website under the 'Notice Board' section.

Early in the process a media briefing resulted in positive publicity for the project and alerted people to the consultation phase. Coverage included: Front Page of the Bendigo Advertiser, Double colour spread in the Bendigo Weekly Coverage on television and radio Other local print and radio media Other Melbourne print and radio media Botanic Gardens Australia New Zealand (BGANZ)website

All Steering Committee members were sent hard copies of the Draft Master Plan. Hard or disc copies (40) were also distributed to various relevant individuals and organizations, as well as media contacts.

Australian Institute of Landscape

Architects (AILA) website

A total of II hard copies of the Draft Master Plan were put on public display, at the Samuel Gadd Centre at the Botanic Gardens, Council Offices and local libraries.

Displays, including enlarged plans, the complete Draft Master Plan report and A3 brochures, were erected at the Bendigo Library, the Lyttleton Terrace Council office and at the Samuel Gadd Centre at the Bendigo Botanic Gardens. These remained in place for 6 weeks until November 27th.

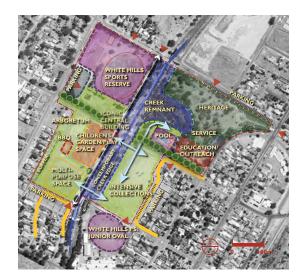


Fig 3.2 Preliminary Option 1

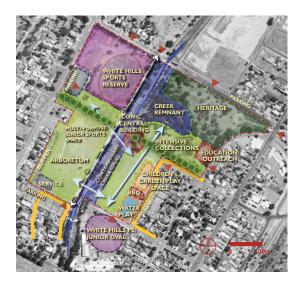


Fig 3.3 Preliminary Option 2



Fig 3.4 Preliminary Option 3

Over the consultation period approximately 270 brochures were taken from the library and Lyttleton Terrace displays, with the vast majority of these taken from the library.

In October Tim Buykx and Kevin Walsh made a presentation at the Botanic Gardens Australia New Zealand (BGANZ) biennial congress at Mackay which was attended by representatives of almost 40 Botanic Gardens from Aus and NZ coming from as far afield as Perth, Cairns, Wellington, Christchurch and Hobart. A poster display was up for the two days of the congress and about 20 CDs were distributed to interested parties including representatives of the Australian National Botanic Gardens (Canberra), Adelaide Botanic Gardens, Sydney Botanic Gardens, etc.

Approximately 700 brochures with a cover letter were sent to residents and property owners in the vicinity of the Botanic Gardens.

Cr Lisa Ruffell hosted a public meeting in White Hills on the evening of Monday 2 November in which Tim Buykx and Kevin Walsh did a presentation and attendees (24) were given the opportunity to ask questions and raise issues. The plans were displayed along with the report and copies of the brochure were available to take away. Petitioners to stop the phase out of the animals handed their petition to Cr Ruffell.

Presentations were made by the Landscape and Open Space Planning staff to a number of stakeholder and others groups as listed here. Bendigo Field Naturalists Club. (40+ people)

Bendigo Native Plant Group (approx. 30 attendees)

Bendigo Garden Club (approx 35)

Friends of the Bendigo Botanic Gardens (approx 30)

Friends of the Benalla Botanic Gardens (approx 30)

NCCMA (7)

Offers were made to make presentations to other stakeholder parties (the schools,

sports groups etc) but none took up the opportunity. A one on one discussion was also held with Uncle Brien, Elder of the Jaara, and his partner Jude Perry.

In addition, members of the Friends of Bendigo Botanic Gardens made presentations to many community groups including; Epsom Huntly Landcare

Anglican Parish of of Bendigo North

Bendigo Inner Wheel

Bendigo U3A

Heathcote U3A

Ladies Probus

Bendigo Community Radio

Bendigo Retirement Village

Elmore Probus

Forest St Uniting Church

Strathhaven

Friends of Kyneton Botanic Garden
Friends of Castlemaine Botanic Gardens
Nelae St Uniting Church Fellowship
Friends of Geelong Botanic Gardens
Friends of Bendigo Botanic Gardens

The Friends of the Bendigo Botanic Gardens were active in generating interest in the Draft Master Plan. They were given about 100 copies of the A3 brochure, which they distributed amongst contacts.

Two listening posts were held on Saturdays 7 and 14 November at the Botanic Gardens. People attended on both days to discuss issues with staff that were present.

All previous respondents who had made comment on the Options Paper were sent a letter or email to thank them for their previous input and alert them to the consultation phase of the Draft Master Plan.

Significant internal discussions were undertaken as part of the development of

the planning for the Gardens in the last 12 months. Discussions were held with Parks and Natural Environment, Recreation, Asset Planning and Design, Children's Services, Tourism, Marketing and Major Events, Community and Cultural Development.

3.2.5 Draft Master Plan Consultation Response

An excellent number and range of responses were received, with a total of 79 responses. A number of form letters were signed by various people and these were counted as one submission. A petition was also received asking to halt the phasing out of the animals. This petition has been treated as one submission on advice from Peter Davies, Governance Manager, City of Greater Bendigo. The initiators of the petition did not make any other form of submission to the Draft Master Plan. 59 of the submissions were from the greater Bendigo area, including 9 from White Hills. 6 submissions came from Melbourne, with a few from beyond Bendigo including Geelong (3) Daylesford and Benalla.

Included in this are ones received from local groups:
Friends of Bendigo Botanic Gardens
White Hills Swimming Pool Committee
Roundabout Garden Group;
Bendigo Tourism Board;
Anglican Parish of Bendigo North;
Friends of Bendigo Kilmore Rail Trail
Bendigo and District Environment Council
Northern Bendigo Landcare Group
Bushlinks

Groups or individuals with regional, national or international relevance also responded, including:



A botanic gardens can provide a variety of educational, experiential and recreational opportunities for visitors





The new Australian Garden at the Royal Botanic Gardens Cranbourne has become a national and international tourist attraction, and has encouraged whole new segments of the community to experience Botanic Gardens.





Professor Catherin Bull from Melbourne University has provided a peer review role to ensure design quality and a robust process



The results of the Options Paper were discussed by the Greater Bendigo City Council before taking decisions on key elements to allow the Master Plan to progress



CEO of Royal Botanic Gardens, Melbourne (RBGM);

President of Botanic Gardens Australia New Zealand (BGANZ);

Rodger Elliott (board member of Royal Botanic Gardens and internationally recognised expert in Australian plants)

Jane Edmanson (Gardening Australia television presenter and author)

National Rhododendron Gardens

Jayne Salmon OAM (past president of Friends of Geelong Botanic Gardens)

Friends of the Benalla Botanic Gardens
Friends of Geelong Botanic Gardens
Friends of Wombat Hill Botanic Gardens

Catherin Bull, Professor of Landscape
Architecture, University of Melbourne

It should be acknowledged that 79 is a significant number of responses. It is one more than was obtained for the Options Paper, which had the controversial issues flagged within it. The number is also more than Council has received on other issues in recent times, such as the Mitchell Street redevelopment proposals. The fact that the 79 responses are almost uniformly positive is also remarkable. It is well known with public consultation you are much more likely to receive negative responses than positive ones.

It should be noted that responses were not received from quite a number of stakeholder groups represented on the steering committee and within the community. These include the White Hills Football Netball Club; White Hills Cricket Club; Bendigo Field Naturalists Club; North Central Catchment Management Authority, White Hills Primary School, Holy Rosary Primary School, etc. As these groups were members of the Steering Committee and had multiple opportunities to discuss and resolve many of the issues throughout the entire Master Planning process, this lack of response has been interpreted as these groups being happy with the Draft Master Plan.

Similarly, the lack of responses on the previously flagged 'controversial' issues such as name change, pool relocation and animal phase out, show that the general Bendigo community is in agreement with the recommendations and conclusions regarding these issues made during the Options Paper process.

3.2.5 Draft Master Plan Consultation Issues Raised

The format for responses was very open ended and was done this way intentionally. The ability for interested parties to include a variety of opinions and thoughts was seen to be important. Because of the open ended nature of the responses, it is not possible to make calculations in the form of percentages or 'votes for versus votes against'. Instead it is important to view the results as an amalgam of community opinions and thoughts to be reflected upon. The variety of opinions, ideas and suggestions can be used to inform decisions about the final detail design.

The responses were collated giving an indication of the topic covered and numbers that commented on that topic. It must be noted that many of the submissions are from representative organizations in the community and indicate the views of many, while other submissions are from individuals. Some typical comments made in submissions are included in the analysis. The key conclusions that are drawn from the submissions are included in this report.

Apart from general support for the Draft Master Plan and encouragement for works to proceed, the following is a ranking of the most popular issues raised, including number of specific mentions in submissions. Support for the educational and interpretive role of the botanic gardens (18)

realignment and central ponds (13)

Support the phasing out of the

animals and birds (15)
Support for the Bendigo Creek

Support the Children's Garden (12)

Support appointment of Curator (12)
Support for the suggested plant
collections (12)

It must be noted that one submission was a petition that was received including 1214 signatures and tabled at the Council Meeting 18th November 2009. The petition requested that Bendigo Council 'stop the phasing out of the animals at the White Hills Botanic Gardens' and request that the 'redevelopment of the animal enclosures be factored into the Master Plan'.

3.2.6 Draft Master Plan Consultation Conclusion

In summary, the conclusions drawn from the public consultation on the Draft Master Plan for the Bendigo Botanic Gardens, White Hills are as follows: Effective Consultation Process.

Significant support for the Draft
Master Plan from a wide variety
of members of the community.

The recommendations in the Master Plan are varied. Generally they are well supported through the consultation process although a small number of areas of further detailed design are required before works can begin. These include;

Consideration of hydrological issues such as flooding, water quality management and water harvesting

Detailed consideration of the design and technical requirements of the Bendigo Creek Trail bicycle path

Detailed consideration of traffic and parking issues in the surrounding streets

3.3 Peer Review

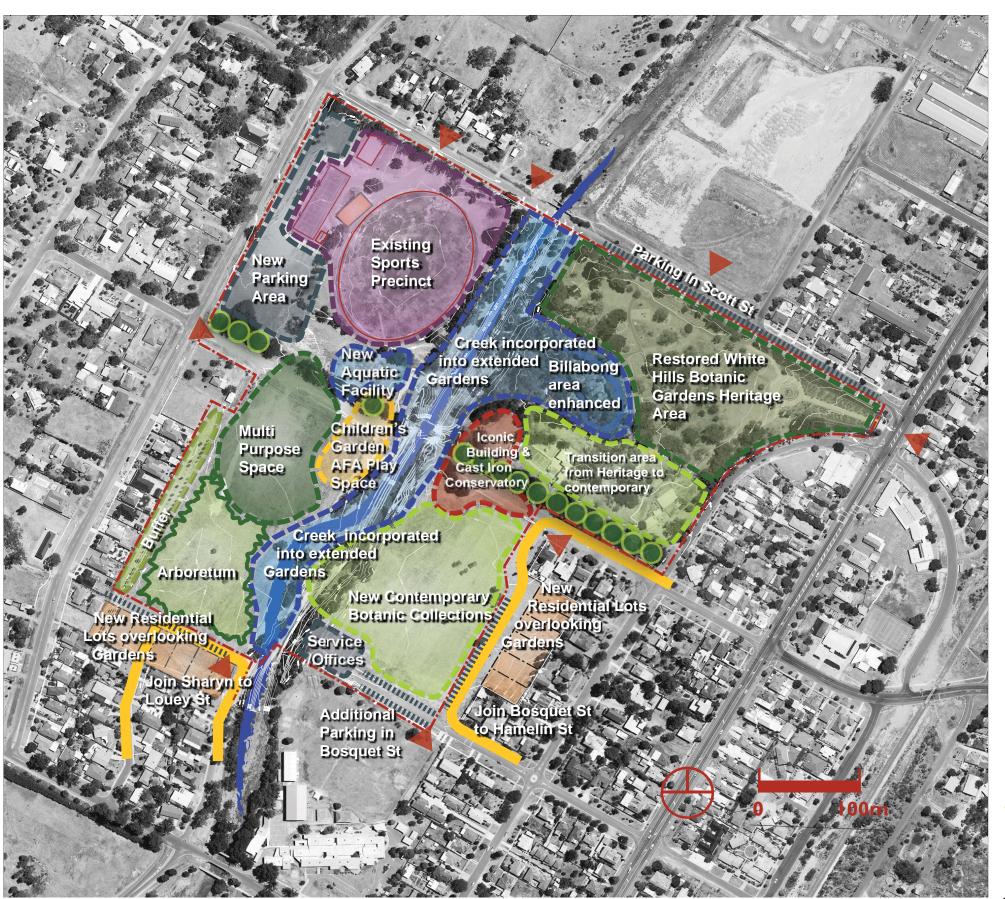
As well as considering the input of the local community, it was decided that for a project of this magnitude and importance it was worthwhile to have it

reviewed by an independent professional with considerable experience in master planning and landscape architecture. Prof Catherin Bull AM was approached to undertake the task of peer review. Catherin Bull is the Elisabeth Murdoch Professor of Landscape Architecture at the University of Melbourne and has considerable experience in private practice both within Australia and internationally.

Professor Bull met with the design team on two occasions for site visits and discussions of the developing design. Her peer review of the work in progress was highly valued by the design team.







Descriptions of Areas and Activities

Restored Heritage Area - to be undertaken with agreement from Heritage Victoria - likely to focus on Circa 1900

Transition from Heritage to Contemporary - To allow a blending and smooth transition between styles

Iconic Buildings and Entrance Sequence - including a central facility building with possible commercial operation, as well as the Cast Iron Conservatory

New Contemporary Botanic Collections - a new true 'botanic garden' with plant species determined by Living Plant Collections Plan (yet to be developed)

Creek Modification and Improvement - focus on garden amenity, water quality improvements, flood management and habitat

Arboretum - a botanic collection of trees forming a park-like environment

Multi-purpose Space - to be used for social events, festivals, community gatherings and as junior sport facility

Childrens Garden/Access for All Play Space - a new landscape based play space for Bendigo allowing children of all abilities to explore, enjoy and be active in a safe environment

Aquatic Facility - a replacement facility for the local community.

Existing Sports Precinct to contain and provide for football, cricket, netball and other sports as appropriate with landscape improvements

Parking - Significant parking area off Kennewell St and other parking provided at Garden perimeter

New Lots and Road modifications - to allow a better urban design treatment to the edges of the Gardens - to improve long term safety and survillance of the public open spaces

Entrance Points - Multiple entrance points allowing easy access and movement through Gardens.

Fig 3.5 Preferred Functional Layout Drawing





4.0 DESIGN PROCESS

4.1 Design Principles

The overall design for the future Bendigo Botanic Gardens site has been steered by the following principles.

- Realising the core botanic garden roles for display, education and conservation
- Relevance to local context of Bendigo and central Victoria
- Respecting the past conforming with Burra Charter and Heritage Significance Assessment and Strategy
- Leading into the future

 contemporary design

 adaptable to future climate
- Attractiveness to a wide range of user groups
- Multi-functionality where possible
- High quality design with the vision for a leading cultural institution

Additionally, the generally accepted best practice standards for new projects include:

- Equitable access and
- Environmental sustainability

4.1.1 Realising the core botanic garden roles for display, education and conservation

The proposed layout allows for substantial areas of intensive horticultural plantings across the site. These will include historically inspired beds in the Heritage Gardens, the experimental gardens and other plant collections in the new sections, home demonstration gardens and the arboricultural plantings. Areas for formal and informal learning have also been included in the design.

4.1.2 Relevance to local context

This refers to the principle of creating a space that reflects its geographical and cultural location in a unique way. Local elements referenced in the design, the plant collection policy and

also in the Interpretation Strategy (refer Appendices) include: retaining the existing geometry of the four quadrants on site

highlighting the Bendigo Creek (water axis, ponds and the Billabong)

design interpretation of the local geology that contains the gold ore for which Bendigo is famous

design reference to the journey of the local creeks and rivers from head waters to the receiving waters

narrative of "built on gold" through the Gold Seams and the Golden Gardens

multiple references to water, emphasising the importance of water in times of drought and likely ongoing water scarcity

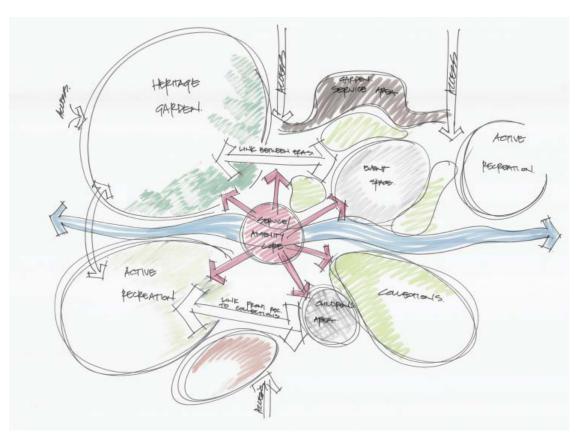
the collection of local eucalyptus species

incorporating plant collections of Whipstick/ Kamarooka, Creekline Grassy Woodland EVC (ecological vegetation class) and Northern Plains Grasslands (geographic reference) and historic cannas (local horticultural history)

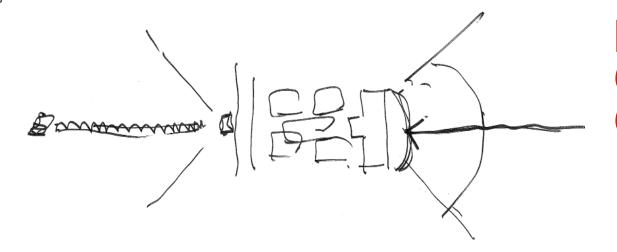
landmark plantings of Washingtonia palms citing historic plantings in nearby Epsom

4.1.3 Respecting the past – conforming with Burra Charter and Heritage Significance Assessment and Strategy

The principles for conservation of heritage sites, including gardens, are laid out in the 'Charter for Places of Cultural Significance', which is known as 'The Burra Charter'. In the case of the Bendigo Botanic Gardens a Heritage Significance Assessment and Strategy (HAS&S) has been written in accordance with The Burra Charter and the document has been adopted by the council. This guides the design and recommendations for the heritage part of the site, along with the Victorian Heritage Act as the existing Gardens is listed on the Victorian Heritage Register. Within the heritage section of the site the past will be respected by: Reinstating the original path layout as much as possible



Early conceptual sketches and diagrams help to clarify the activities and arrangement of elements on the site



Design studies into classical garden design concepts such as symetry and balance. These processes have been used to influence the design of the Master Plan



...it was commented that the design should be of a contemporary nature acknowledging the changed climatic conditions and reduced water availability. This is addressed by minimising lawn area where appropriate and focusing on dry-tolerant plant collections. The contemporary design also aims at attracting younger age groups into the garden.



Creation of garden beds with plantings sympathetic to the Gardens' history, including reinstating the Pine Avenue

Recreation of an 'island' for the Picnic Shelter

Returning lost built features such as the Grape Walk, Shelter Shed and bridges to the c.1905 Picnic Shelter

Removal of inappropriate inclusions such as the toilet block, Samuel Gadd Centre, internal car park and swimming pool (once new facilities have been provided elsewhere)

4.1.4 Leading into the

future – contemporary design adaptable to future climate.

The consultation process for the Options Paper in February-March 2009 revealed an acknowledgement by the public that the new areas should not be an imitation of existing heritage gardens. Whilst the need for a space of natural beauty and relief from urban areas (i.e. the notion of an "oasis" in the dry surrounding landscape) was expressed, it was commented that the design should be of a contemporary nature acknowledging the changed climatic conditions and reduced water availability.

This has been addressed by minimising lawn area where appropriate and focusing on dry-tolerant plant collections. The contemporary design also aims at attracting younger age groups into the garden.

4.1.5 Attractiveness to a wide range of user groups

The mission statement for the extension and rejuvenation of the Bendigo Botanic Gardens, White Hills defines the gardens as a "place for the enjoyment of the whole community". This is critically important not only to justify the monetary investment but also in order to generate high visitation and to anchor the Gardens in the collective memory of the community. In order to reach this aim the gardens will offer a range of gardens, spaces, activities and programs. The co-location with

recreational facilities is a strength of the site, enticing some users to explore the site beyond the White Hills Recreation Reserve. The multiple user groups and their anticipated activities include:

families - exploring the Gardens, participating in activities, picnicking with friends, visting the play spaces or making the Gardens a destination for activities

overnight visitors – potentially extending their stay in order to visit the Gardens and contributing to the success of the local tourism industry

culturally interested visitors – especially from local and regional garden clubs, plant groups, but also people interested in gardening, history, botany and the natural environment

senior citizens - participating in day trips (coach trips)

local White Hills residents – for recreational and dog walking

day visitors – utilising the space for a break

students – (primary, secondary or tertiary) learning about plants, history, natural environment, indigenous history and environmental sustainability

young adults – meeting friends, informal sports activities on the Events
Lawn, or active sports at the
White Hills Recreation Reserve

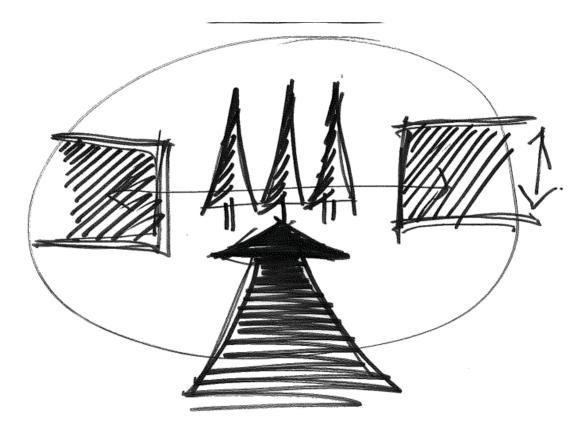
sports clubs – utilising the Events Lawn as a training space

4.1.6 Multi-functionality where possible

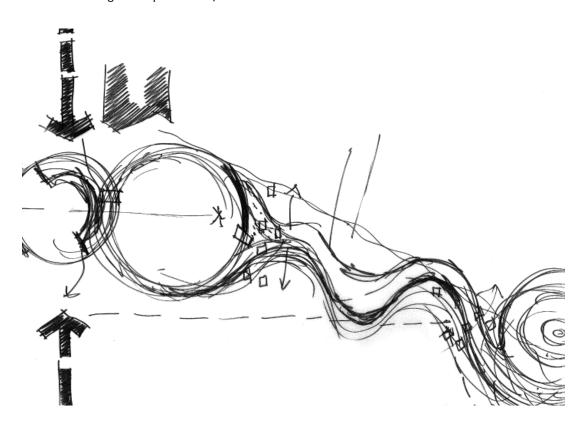
Whilst the core function of the space as a botanic garden requires space for plantings, the overall layout as a parkland with integrated active areas allows for a multitude of activities as follows:

Heritage Garden for the enjoyment of traditional flower displays, contemplation, home demonstration gardens, picnicking etc.

A main plaza will serve as a ceremonial entrance, as gathering and resting space.



Sketch indicating the importance of botanic and horticultural elements in the Garden



Design development sketch resolving the intersection of the water axis and the activity axis including the design of the creek and central ponds



A future central building may encompass a café, a small retail outlet and potentially a function room.

The new garden extension will have a focus on plant collections displayed in contemporary spaces, several shelters and outreach facilities as well as a smaller number of contemplative spaces for passive recreation and reading.

The creek edge will provide a spine along which the gardens can be investigated.

The west side of the creek (Botanic Park) will be partly used as an arboretum and will encourage visitors to stroll and make discoveries. This quadrant will also feature a play space of regional standing, extensive BBQ facilities, toilets and an events lawn.

4.1.7 High quality design with the vision for a leading cultural institution

There is a clear intention to develop the Bendigo Botanic Gardens into a cultural institution that is recognised state-wide and nationally. It will draw visitors from well outside Bendigo. For this to be achieved an outstanding design with a contemporary fresh approach is required that meets educational, tourism and local leisure needs in regards to park design, events and programs.

4.1.8 Equitable access

All features will be designed to current DDA requirements and Australian standards (especially AS 1428: Design for Access and Mobility). The Children's Garden and the Play Space will have a strong focus on including children with various abilities.

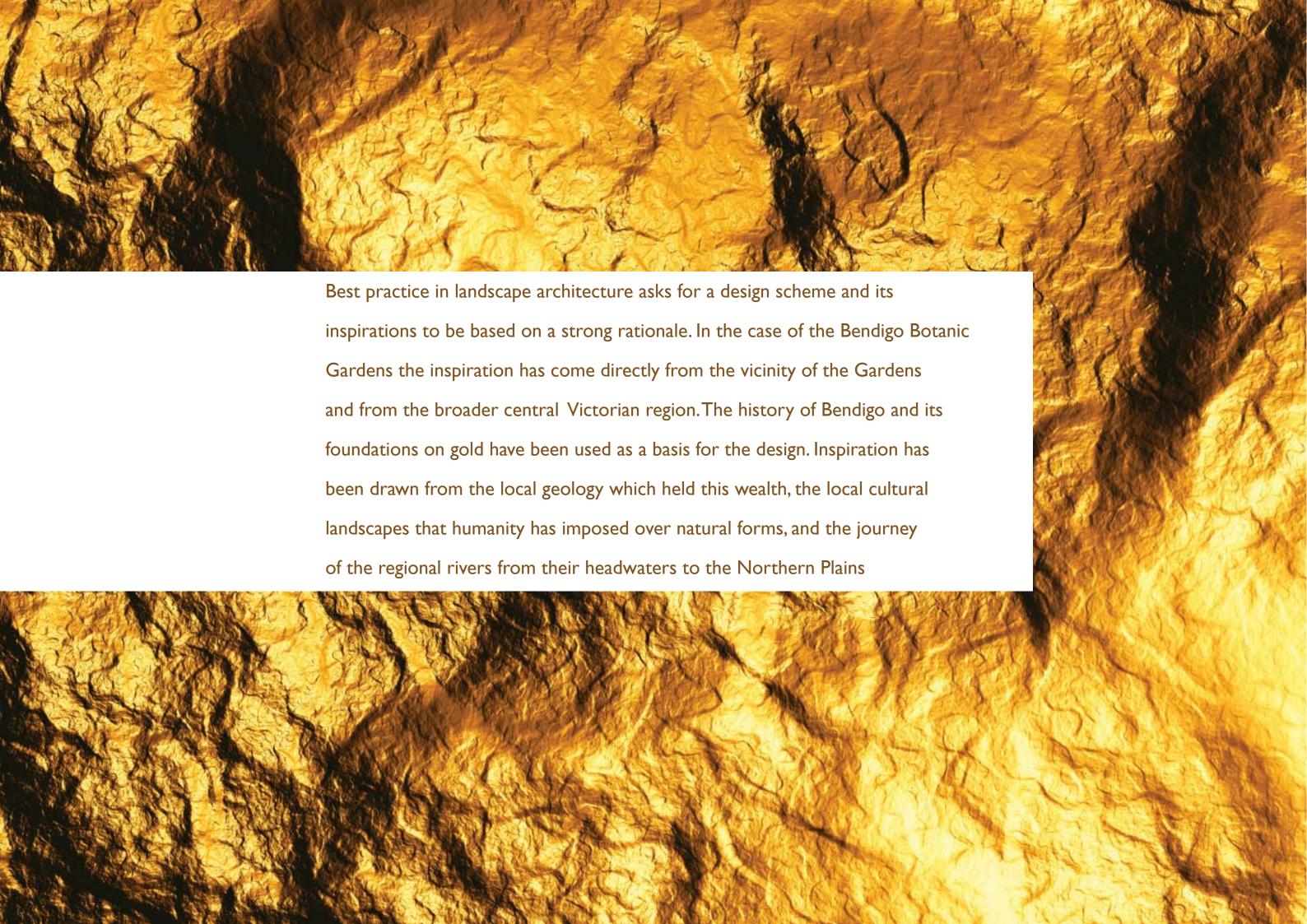
The following principles can be used to guide design of spaces to better achieve the above objective.

Table 4.1: Design principles for accessibility

Design Principle	Potential Application Guideline
Equitable Use The design is useful and marketable to people with diverse abilities.	All circulation routes and changes of level to be accessible to avoid stigmatising or segregating users Provision for privacy, security and safety to be equally available to all users Make the design appealing to all users
Flexibility in Use The design accommodates a wide range of individual preferences and abilities. Simple and Intuitive Use Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current	Provide choice in methods of use Accommodate variation in strength, accuracy and precision Accommodate different levels of stamina with seating and rest points throughout Eliminate unnecessary complexity by providing a concise and sensory range of materials to aid legibility Highlight changes in level with cues based on element arrangement and materiality
Perceptible Information The design communicates necessary information effectively	Provide cues to guide movement and activity within individual spaces Be consistent with user expectations and intuition. Accommodate a wide range of literacy and language skills. Use pictorial, tactile and text-based means to convey essential information
to the user, regardless of ambient conditions or the user's sensory abilities.	Ensure signage is logically located, easily viewed and well designed for legibility and contrast
Tolerance for Error The design minimises hazards and the adverse consequences of accidental or unintended actions.	Arrange elements to minimise hazards and errors, and minimise the consequence of any error Provide warning cues to prevent errors Provide fail-safe features for dangerous elements such as play equipment and pedestrian and cycle bridges Discourage unconscious action in tasks that require vigilance by providing physical and sensory cues
Low Physical Effort The design can be used efficiently and comfortably and with a minimum of fatigue. Size and Space for Approach and Use Appropriate size and space is provided for approach, reach, manipulation, and use	 Minimise slopes on 'flat ground' used for walking Consider ergonomics when choosing furniture Accommodate different levels of stamina with seating and rest points throughout Provide clear sight lines to important elements for both seated and standing users Ensure all handles and other components can be reached from seated and standing height Provide space for assistive devices
regardless of user's body size, posture, or mobility.	or carers in seating and along paths • Accommodate variations in hand and grip size.









4.1.9 Environmental sustainability

Consideration will be given to the sustainability of the Gardens as a whole, both during construction and ongoing operation. A visible commitment to sustainability will also set a positive example of leadership and responsibility by Council to the community. It is also in line with a number of council's existing policies and strategies. With a strong mission for education and its anticipated large exposure to the public it is imperative that all construction works and ongoing operation will comply with best practice environmental sustainability standards. A visible commitment to sustainability will also set a positive example of leadership and responsibility by Council to the community. It is also in line with the City of Greater Bendigo's Sustainability Design Policy: This policy aims to "Promote the use of sustainable resources

Minimise operating costs

Reduce waste

Reduce energy consumption

Minimise water use

Enhance user/occupant health and wellbeing."

Additionally, landscape elements like pathways, shelters and pergolas will be designed in accordance with the above objectives. Plant selection, maintenance and management will also have sustainability as its base.

Materials

When selecting materials in development of the space, whole-of-life impact on the environment will be analysed. Materials that deplete natural resources or produce toxic by-product during their production or disposal will be avoided. Materials will be re-used or re-cycled where possible, and from a local source if available. The environmental credentials of particular materials, particularly plantation timbers, should be certified by an independent body.

Energy

The construction and ongoing operations of the Gardens should be designed to minimise energy consumption thereby reducing greenhouse impacts and use renewable energies wherever possible.

Water

The Gardens will be designed to minimise the use of potable water during operations.

The environmental impact of using water to irrigate trees, garden beds and grassed areas will be considered in relation to the benefits to plant health, and improved social and recreational opportunities for users. Recycled water will be used for irrigation purposes wherever required. Planting will be designed to minimise ongoing irrigation and fertilizer requirements by selecting appropriate species, minimising wastage, and strategically locating higher water use areas, such as lawns, to provide the greatest amenity benefit.

The site will be designed to discharge clean, sediment-free and toxin-free stormwater from the site, and have no adverse effects on the quality of the Bendigo Creek.

4.2 Living Plant Collections

There has been a considerable effort devoted to generating a clear and defined Living Plant Collections Policy that will provide the Bendigo Botanic Gardens with a basis for its botanic collections. The plants have been selected for a number of criteria. The list of plants/genus that have been nominated for the collections include;

Research and Conservation:

Rare and threatened species of the Bendigo district.

Ecological:

Whipstick/Kamarooka
Goldfields Creekline Grassy Woodland EVC.
Northern Plains Grassland

Geographic:

Southern California North Africa

Taxonomic and Evolutionary:

Dry dormant plants
Eucalyptus (Bendigo region)
Callitris
Pinus (dry climate species)

Cultural and Ornamental:

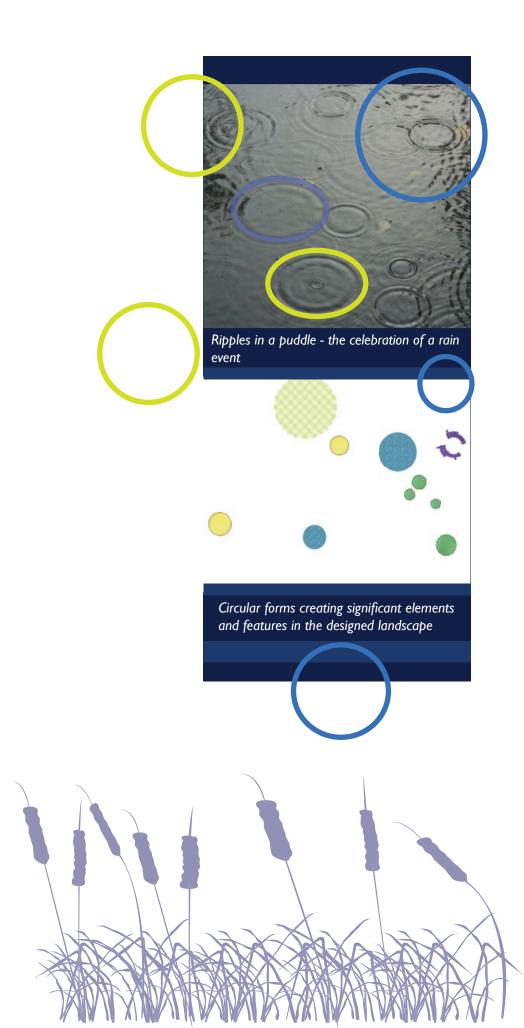
Canna (cultivars of the 19th and early 20th century) [GPC collection]
Bearded Iris (cultivars of the 19th and early 20th century)
Lavandula [GPC collection]
Dry climate edibles
Winter flowering plants
Cottage garden plants of the Victorian goldfields
Edwardian plants
Home demonstration gardens

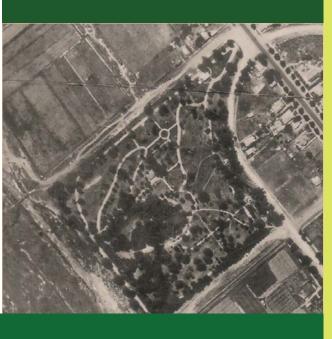
4.3 Design Intent

Giving form to the physical space, i.e. designing a botanic gardens, needs to satisfy an array of requirements on an experiential, practical, educational and economic level.

The overriding design intent has to be that the garden layout supports the main objective of a botanic gardens as the space for living plant collections with its conservation and educational role. Equally important is the objective of creating an outstanding experience for the visitor which is the catalyst for enjoyment, learning and inspiration.

The challenge lies in the very varied expectations and levels of knowledge of the many visitor types. This is addressed by providing a broad palette of garden experiences that range from intensive horticulture sections (Heritage Gardens and the Garden for the Future), to contemplative or ceremonial spaces, as well as active spaces for play, gathering and socialising. A range of active spaces that invites children to discover, play and learn (Children's Garden, Play Space, Wetland Area) has also been included.





1934 Aerial photograph clearly showing path



Path network mapped onto existing site and re-instated in accordance with best practice in

heritage restoration (Burra Charter)

Path network traced from the aerial photo using

GIS and computer imaging software

It is intended that the Bendigo Botanic Gardens - with the exception of the heritage area – be of a strong contemporary design, clearly contrasting with the earlier section of the Gardens. In creating the new Bendigo Botanic Gardens we will be creating a legacy that future generations will benefit from.

It is also a clear intention that the design reflects the Bendigo region and reinforces the position of the Bendigo Botanic Gardens as a leading public open space and cultural institution of the region. In summary, the design will clearly be 'of its time' and 'of its place'.

4.4 Design Inspirations

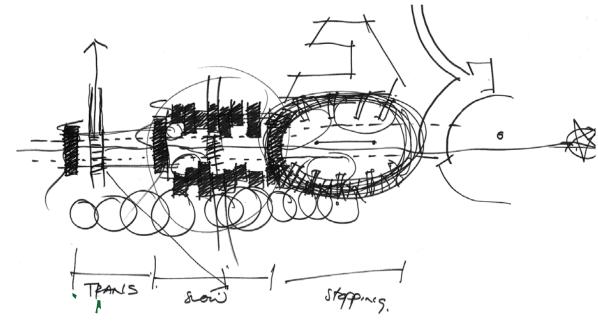
Current best practice landscape architectural design asks for rationale for the basis of the design and its inspirations. In the case of the Bendigo Botanic Gardens the inspiration has come directly from the vicinity of the Gardens and from the broader central Victorian region. The history of Bendigo and its foundation on gold has also been an inspiration along with the geology from which this wealth arose. Cultural landscapes that humanity has imposed over natural forms is also an inspiration.

4.4.1 Water

Bendigo is a city founded on gold - not the presence of fresh water as is generally the case throughout the history of human settlement. The absence of fresh water has been an issue from the gold rush days to the present. This will continue into the future with the predicted impacts of climate change.

The occurrence of rain is a celebrated event in dry climates. We have become increasingly aware of our dependency on the most fundamental of natural resources.

Falling raindrops and the ripples they create have provided inspiration for the strong circular forms in the design of



Design development sketch resolving the entry sequence from the proposed new entrance through the central plaza and gathering space to the water ponds with an iconic planting terminating the vista

the gardens, the ponds and the gathering spaces. Circular spaces imply inclusiveness and are a clear, very legible design form. Though appearing "random" and mimicking raindrop patterns, the location of those spaces has been carefully considered.

The theme of water also provides a plethora of educational opportunities which have been used in the interpretation strategy.

4.4.2 Geology

Bendigo's historic, current, and future wealth is tied to its soils and its geology. From the pre-white Australian landscape shaped by indigenous management, to the rocks holding the gold that made the district wealthy, to the soils that host the district's crops and livestock – all are determined by the unchangeable underlying geology which gives Bendigo it's unique appearance.

Striations of the local Bendigo geology occur at approximately 340 degrees and these patterns have been replicated and

abstracted into a stripe pattern informing the layout of the arboretum and thus making the geological form visible to the visitors. Forming of the ground into a series of ridges and depressions will add a third dimension and accentuate the theme of geological folds.

The "zebra stripes" of the arboretum and those carried into the other parts of the garden will create spaces with a varying degree of openness and enclosure as visitors move through along the spaces. The stripes also allow for thematic grouping of trees (e.g. naturally occurring plant associations or inspiring bark) and provide a linking element joining the Garden of the Future quadrant to the Botanic Park.

'Seams' of plants with golden flowers and/ or foliage are run through various areas of both the old and new gardens. These 'golden gardens' represent - in botanical form - the seams of gold that were, and still are, so important to Bendigo's history and prosperity.





Geological maps of Bendigo show strong striations that hold gold deposits

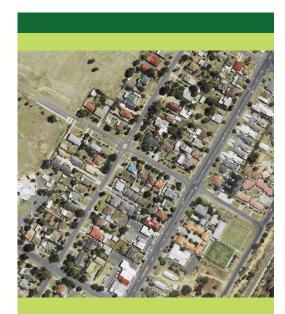


Striated patterns are taken and abstracted into a strong series of graphic elements



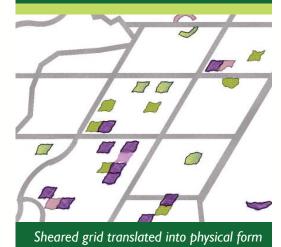
Geology striations translated into the landscape in a macro scale through bands of trees and landform in the designed landscape





Street patterns and land development has lead to a stong pattern and form of cultural landscape





through paths and garden beds

pattern creates a sheared rectangular form

4.4.3 Cultural landscape

The white settlement 'cultural landscape' overlays the indigenous, the geological and environmental landscape and applies a western construct of culture on the older land. Much of western philosophy has been influenced by Descartes and the concept of the Cartesian grid, and other attempts to put 'order' to the real world.

The most profound changes to the landscape by white settlement originate in surveying, mapping and subsequently dividing the land into titles and parcels based on geometric patterns of a mapping grid.

While the alignment of the major arterial road through Bendigo (the Midland Highway) and the orientation of the CBD were determined by the direction of the Bendigo Creek many other urban patterns are based on the north-south / east-west map grid.

In the new extension to the Gardens a series of paths run parallel to the Midland Highway and is spaced 30 metres apart to reflect the widths of many of Bendigo's existing streets. At an angle to these are paths running directly on the east-west compass alignment.

The east-west compass alignment intersecting with existing road pattern alignment and city grid creates 'sheared' rectilinear forms. These forms have been used to generate path networks and garden beds.

Applying this sheared grid pattern to the Garden for the Future has various benefits: The available space can be well utilised; the path network follows an easy-to-understand logic, therefore assisting wayfinding; it creates a contemporary feel to contrast the more serpentine and asymmetric path network of the heritage section and it provides a calm, strong base layout which enhances the spatial effects of dissecting tree lines and circular raindrop spaces by means of contrast.

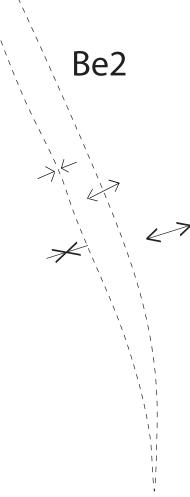
The 'gridded' form of the landscape in the Garden for the Future is also a reference to the strong tradition of formal gardens found in Europe, but re-interpreting that cultural form to a context and design that is locally relevant.

4.4.4 Rivers

The pre-white settlement landscape, the cultural landscape, and the future of the community are linked to the passage of water through the landscape - the journey of a river. The river forms and influences the shape of the land, the culture and the gardens. Rivers tell the story of both water and geology.

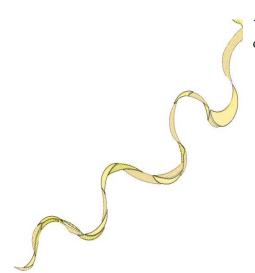
The River Path meandering through the arboretum translates the journey of local rivers and creeks passing from headwaters to the northern plains into a walk of discovery. This meandering form carves through the geological striations, indicating the 'geological journey'. This can be reinforced with stylised rock work sourced from the relevant areas like Daylesford, Kyneton, Bendigo, Elmore and others. In turn, these 'geological collections' can inform visitors of 'what lies beneath' and how it affects soils, vegetation and the courses of rivers themselves. Interpretation of this journey will be added as the Gardens develops.

The serpentine, flowing form of the path invites people to a slow stroll with time for observation and contemplation. "Eddies" in the form of sheltered resting areas will provide opportunities to picnic, socialise or to have a family get-together.



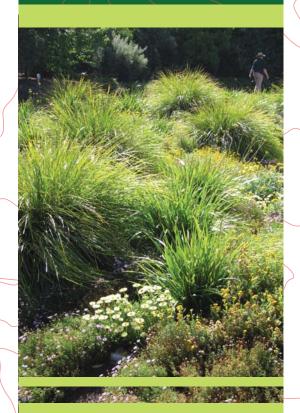






The meandering form of a creek or river is a common feature in the landscape









4.4 Proposed Activity Clusters and Functional Relationships

A study of the required relationships between various elements has been undertaken. Fig 4.1 is a 'bubble diagram' study showing that there are some items that must be located together, some items that would benefit from co-location and some items that should be placed apart.

This study shows a series of logical clusters of activity.

4.4.1 Garden Activity Cluster

Containing elements such as:
Heritage Gardens (restored) – the
respect for the heritage nature
of the existing portion of the
Gardens can be enhanced through
well considered restoration

Intensive botanic/horticultural collections – a primary role of Botanic Gardens is to provide a visual and scientific collection for public consideration and enjoyment

Education and outreach functions – to provide spaces and facilities to enable schools, institutions and the public to learn about plants, the relationships between plants and their environment (ecology) and the relationships between plants and humans (ethno-botany)

Creek edge and water margins – to encourage garden users to investigate and consider the roles and functions of a riparian vegetation in the wider environmental context. The ability of this area to provide an education role (local ecology) and conservation (endangered species) is valuable and helps fulfill the role of a botanic garden

Service and staff area – the staff needed to manage the elements in the above items need to have easy access to enable effective maintenance

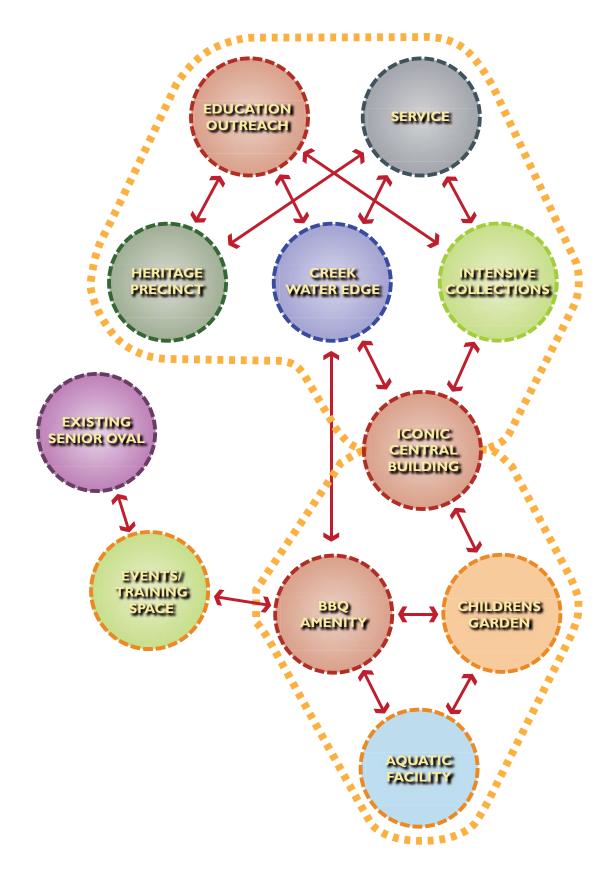
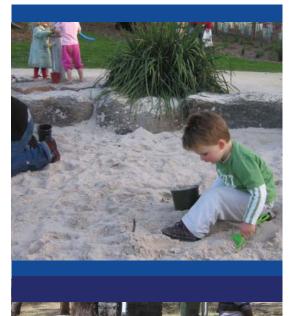


Fig 4.1 Functional 'Bubble Diagram'





There is a strong and clear link between all of the above elements. The close relationships between them require a physical link (paths, roads and close adjacency) as well as a functional/operational link as there will be similar maintenance requirements.

To serve this Garden Activity Cluster a modern iconic building has been considered. This will be in a prominent location in the garden and could provide a function room/café, food and beverage services, with public toilets and potentially commercial operations. Any proposed building will form an important 'knuckle' in the design and serve as a focus and divider between the different clusters.

4.4.2 Family Activity Cluster

Containing elements such as:
Children's Garden and the Play Space – the experience in RBG Melbourne,
Geelong Botanic Gardens, and other significant play spaces show that children and family activity in these areas/facilities can be extremely high.

Aquatic Facility – there will be some noise and activity associated with swimming and aquatic play. The aquatic facility has the potential to generate a high visitation and demand for services and facilities.

BBQ and amenity services – The use of the Children's Garden and the Play Space and Aquatic facility will generate high demand. There will need to be dedicated BBQ and toilet facilities provided for users of these areas.

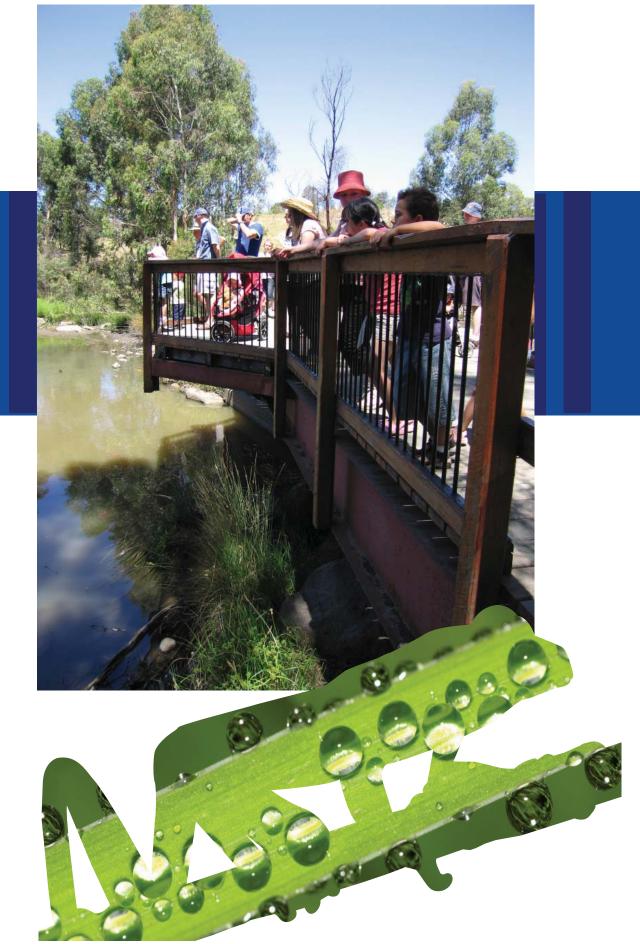
The above activities will generate high visitation, high activity and moderate levels of noise with children playing etc. The qualities of these activities are considered to be important but are not necessarily compatible with those in the Garden Activity Cluster. Some consideration should be given to the separation of the two clusters. The iconic building noted above may also serve the Family Activity cluster for food and drink vendors, toilets and so on.

4.4.3 Sports and Active Recreation Cluster

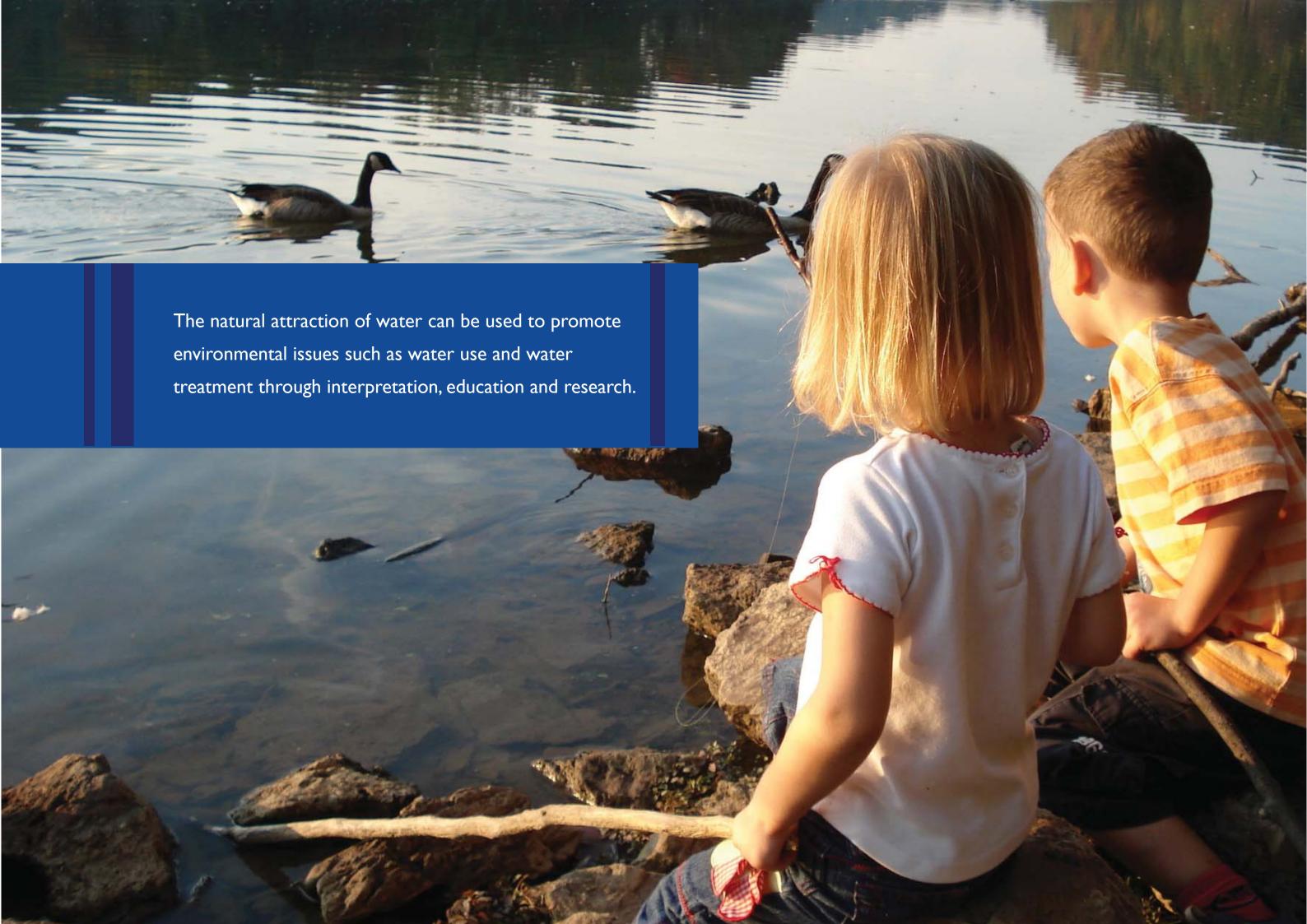
Containing such elements as:
The existing sports oval and associated buildings – the sports oval and facilities are effectively stand-alone elements within the Gardens.
Parking, kiosk, change and playing surface facilities are all included

Events lawn - a new events lawn would benefit from being located near the existing sports facilities to make effective use of the facilities noted above. In this way the events lawn can be used for sports training and games



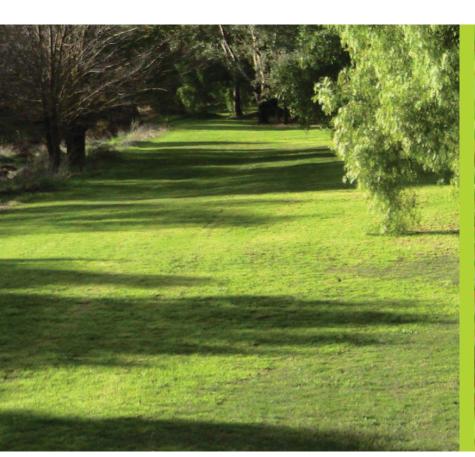


Bendigo Botanic Gardens, White Hills Master Plan February 2010





THE MASTER PLAN







5.1 Introduction

The Bendigo Botanic Gardens, White Hills will be a significant sized Botanic Gardens when fully developed. It is anticipated that the works contained within this Master Plan will take many years to construct. For this reason, it is important to have a strong set of organisational principles on which to base the design. As well as the various design inspirations, the Gardens have been planned around two significant axes.

Water Axis

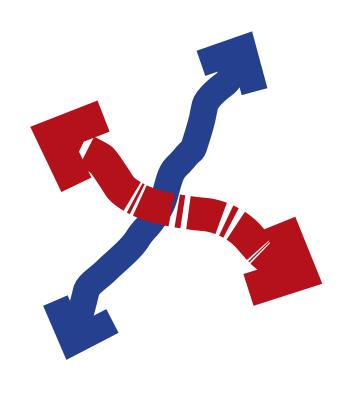
Formed by the Bendigo Creek the water Axis runs south to north and divides the site. It has been previously decided that the eastern side of the creek will house the passive and intensive horticultural part of the gardens, and the western portion will house the more active pursuits. The Water axis will be a focus for movement through the space, as the Bendigo Creek Linear Trail follows this alignment. The Water or Blue axis will provide a significant series of water features within the gardens that will naturally draw visitors. The natural attraction of water can be used to promote environmental issues such as water treatment with interpretation, education and research.

Activity Axis

The spatial design arranges the social and education programs being undertaken in the Gardens to be accessed mostly from the east-west axis. The main entrance and the treatment of the Hamelin St approach creates a sequence of spaces and events that lead the visitor into the main gathering space for a decision about which portion of the garden to visit first. An alternative entrance on the western side of the creek is similarly aligned with visitors being led through a sequence of choices about which part of the Gardens they shall visit and which activity they shall partake in.

The Master Plan is an overall view of the proposed development. Each component and element has been considered both as part of the whole site, but also as individual spaces and elements. To allow full understanding of the complexity and detail, both the overall view and a series of detailed views have been developed.

Each detailed component is accompanied by sketches, photographs and cross sections showing the proposed character and 'feel' of each space or element.



38 Bendigo Botanic Gardens, White Hills Master Plan February 2010















Cross Section of the proposed excavation of the circa 1900 Creek bed and relationship to existing 1904 Shelter and Bridges

5.2 Gardens

5.2.1 Heritage Gardens Restored

It is intended that a large area of the current Botanic Gardens bounded by Scott and Hamelin St to the east of the creek will be restored in line with heritage best practice. A Heritage Significance Assessment and Strategy (HSA&S) has already been prepared and this will guide this restoration process. It outlines the elements of gardens that are of cultural significance.

A recently discovered aerial photo of the site taken in 1934 will guide the restoration. By tracing over this it is possible to ascertain the original design of the path network and to reinstate large sections where appropriate. Garden beds based on the style of the era have also been included in the 'design' of the heritage section. Planting within these is guided by both the Heritage Significance Assessment and Strategy (HSA&S) and the Living Plant Collections Plan.

There is also a significant number of historic photos, postcards and plans that give images of the Gardens and various elements within the Gardens. These will assist in understanding earlier layout and planting. Any works to the heritage listed site will need to be approved by Heritage Victoria.

Main features of the restored heritage gardens area include: reinstated paths based on the 1934 aerial photo

creation of garden beds planted with heritage plants

reconstruction of the grape walk

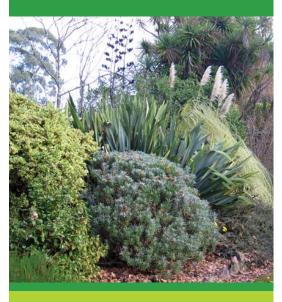
removal of internal carpark to facilitate the reinstatement of the historic pine avenue

rebuilding of the historic shelter shed with toilets included

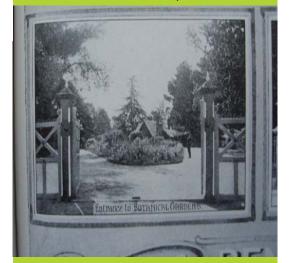
phasing out of animal collections as per community consultation and Council resolution (06 May 2009)





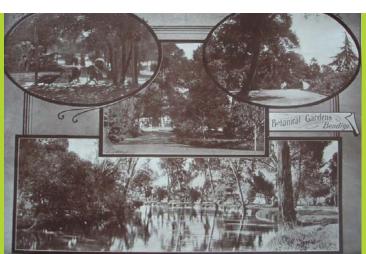


Planting styles in the Heritage Garden will be consistent with 19th Century Gardens



The entrance to the Botanic Gardens prior to the Arch of Triumph clearly shows shrub based garden beds, the Pine avenue on the right and the curator's residence (Bendigo Regional Archives Collection)



















GARDEN FOR THE FUTURE

5.2.2 New Garden Area - Garden for the Future

One of the main features of the Bendigo Botanic Gardens Master Plan is a significant extension to the Gardens east of Bendigo Creek. This is located between Hamelin St and Bosquet St to the south of the existing Gardens. This area is intended to act as botanic gardens proper and as such will hold important botanic collections and requires significant maintenance inputs.



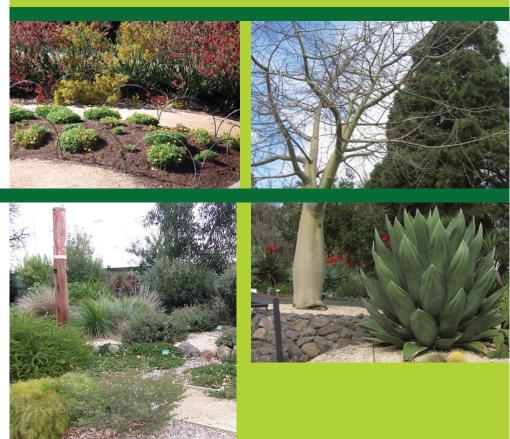
Cross Section of the proposed gathering space in SE corner showing minor changes in elevation to provide spatial differentiation and interest

The main elements of this area include:

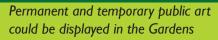
- main entrance
- significant path network of varying materials and widths
- strategically placed shelters and gathering spaces
- intensive garden beds holding plant collections and ornamental plantings
- garden areas to demonstrate to home gardeners a range of sustainable plants and practices
- tree lined paths
- golden gardens
- experimental garden beds
- home for horticulture and service yard

The design for this area is based on the sheared grid forms that are informed by local cultural landscapes and the mapping grid. This grid is traversed by bands of vegetation and 'golden gardens' reflecting the geological patterns of the region. The grid form is reinforced by strong linear views, terminated with iconic planting or sculpture, and the bosque of trees at the new main entrance which seeks to connect the new portion of the gardens with the old. The sheared grid has been interrupted in a number of locations by circular forms of shelters, gathering spaces, experimental garden beds and contemplation spaces. This combination of gridded, striated and circular forms all combine to create a unique and powerful landscape design.







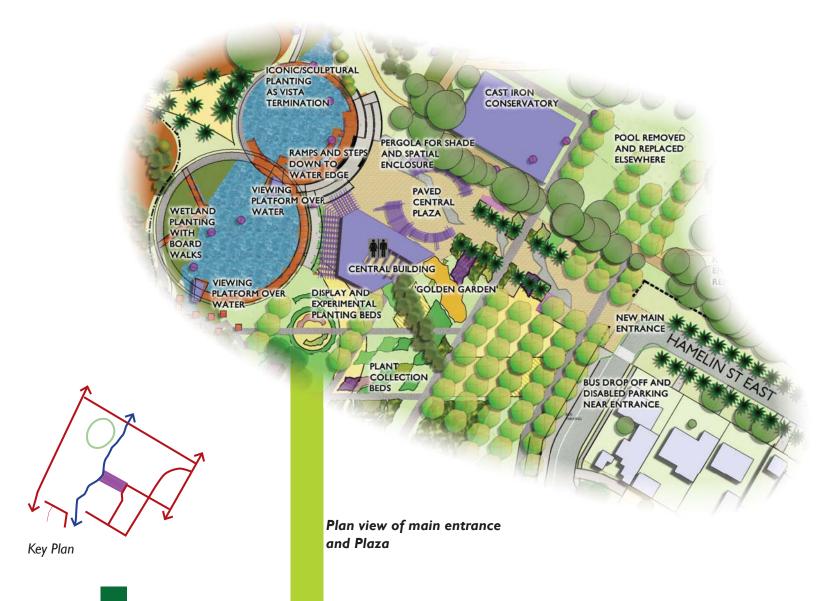


Cross section through a typical Garden space





CENTRAL PLAZA







5.2.3 Central Plaza

At the end of the main entrance continuing along the red activity axis, sitting between the 19th century cast iron conservatory and the 21st century central building is the central plaza. This space forms a high point in the entry sequence along the axis. This is intended to be the main meeting and gathering space for visitors to the Gardens. A place where people can meet with friends and where tours and other Gardens activities can meet and commence. A range of beautiful views are achieved from this space, including views to the central ponds, up the Palm Avenue, to modern and historic buildings and various views into the botanical plantings. The vista through and over this space will be terminated by some iconic tree planting on the far side of the central ponds across the water.

It is from this space that the visitor to the Gardens makes a choice to experience the majesty of the restored heritage section, or a contemporary garden experience. The juxtaposition of the proposed 19th Century cast iron glass house, and the proposed Visitors/function centre heightens the contrast between the eras.

Design features of the central plaza include:

- display garden beds
- large ornate pergola structure to provide shade and also to frame views
- paving which reflects the geological seams of Bendigo
- interpretation panels and displays to inform visitors



5.2.4 Central Water Ponds

The central water ponds are the central focus of the Gardens. They are located at the junction of the Blue Water Axis and the Red Activity Axis. The circular forms are reminiscent of the ripples and drops in the puddle, linking the forms and the design to the idea of rain fall and 'refreshing the dry'. The Ponds are the highlight water in the landscape offering the cooling view of a sheet of water. They are placed at the level of the existing creek for reasons related to regional water managment and flooding. It may be possible to split the two ponds so that the water sits at two different levels, creating variation and interest.

The edges of the ponds are intended to be treated in a variety of ways. Close access to the water can be granted by board walks and pontoons. Structured water edges such as gabions and/or retaining walls are also intended. In specific areas the edges of the ponds will be revegetated with wetland species to encourage wild birds, frogs and other fauna.

It is likely that the ponds will be lined on the base to prevent the saline ground water in the subsurface entering the creek system. Such construction is common and has been used successfully in many locations including Bendigo.

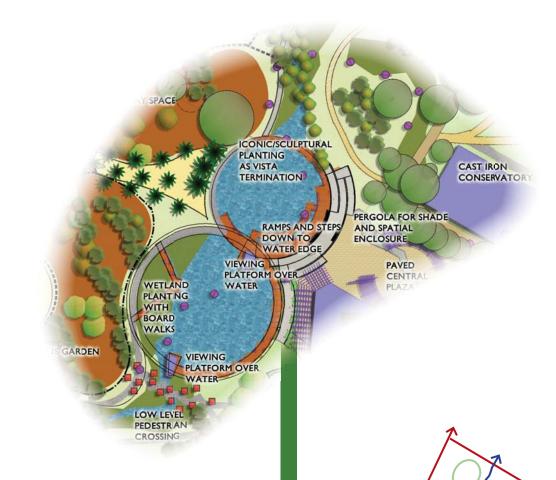
In order to maintain the requirements for flooding, the normal water level of the creek cannot be substantially higher than its current level, however the finished floor of the adjacent building must be approx 4.0 m higher. This necessitates a series of retaining walls and ramps to gain access. This change of level provides a considerable challenge, but at the same time some fabulous spatial design possibilities. Using concrete, stone and vegetation, the walls and ramps will become a significant feature of the Garden.

It is intended to use the change in level to provide some higher level viewing platforms with shelters and elevated outlook platforms (belvederes). These will enable long views over the Gardens in most directions and will become an iconic part of the overall design.

The ponds and associated decks will also provide the main point of access across the creek for pedestrians and service vehicles. The decks and bridges in this area continue the Red Axis across the creek and allow for the uninterupted flow of visitors through to the Children's Garden, Event Lawn, Aquatic Facility and Arboretum.

Design features of the central water ponds include:

- decks which allow close inspection of the water
- ramps and stairs which allow access for all, but also allow flexibility in approach should the creek water levels rise during periods of flood
- wetland plantings to show a range of vegetations and design approaches and encouraging the return of frogs and birds to the area
- line of sculptures or totems to indicate the original line of the Bendigo Creek
- viewing platforms

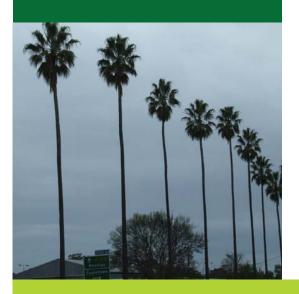


Key Plan

Artist's impression of Central Ponds







MAIN ENTRANCE

5.2.5 Main entrance

A new main entrance is created into the Bendigo Botanic Gardens, White Hills off Napier Street down Hamelin Street. This allows an entry off the main highway and creates another iconic element to the Gardens' structure.

The ceremonial entrance of the Arch of Triumph will be maintained as will the other existing entrances to the Gardens.

The main feature of the entry is a planting of Washington palms. This plant is a particular icon of Bendigo's northern suburbs and repeats the significant and historic planting of Washington Palms found just to the north in Epsom. It also references the similar style planting at the Conservatory Gardens in central Bendigo, and similar plantings of many historic Gardens around Victoria.

The establishment of this avenue may require the realignment of parts of the road surface, undergrounding of existing powerlines and the removal of a small number of existing street trees.

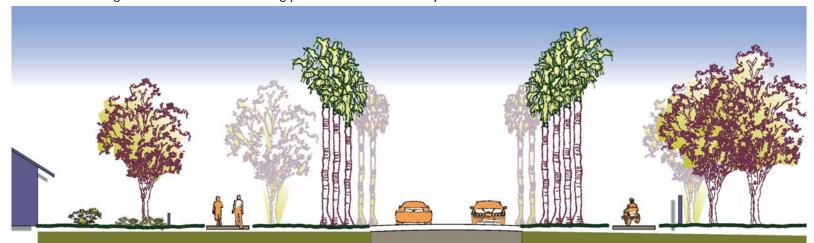
The height of the palms once they mature will make them visible above the rooftops of local houses. This will act as a visual cue to visitors that they are approaching the formal entrance to the Gardens.

The iconic look of the palms will create a strong avenue entrance, while the fact that they will grow in the district unirrigated reinforces the message that the Bendigo Botanic Gardens is a sustainable landscape.

A bus drop-off and pick-up zone will be built near the entrance gates and disabled parking will also be placed here.



Cross Section through main entrance area showing palm avenue and road way







The Samuel Gadd Centre at the Bendigo Botanic Gardens, White Hills will be used in the short term as base for education and outreach programs

5.2.6 Education/Outreach

Providing a range of educational opportunities and experiences is a principle role of botanic gardens. It is important that a base be provided for such outreach to the community and that this base be appropriate and yet flexible.

It is envisaged that the vicinity of the Samuel Gadd Centre could potentially be used as a collection point and a teaching space for school groups, tour groups and the like. While the current facilities may be suitable in the short term, new facilities will need to be provided as the Gardens develop and educational uses increase. Positioning of outreach and educational facilities throughout the site as it is developed is proposed as it allows considerable flexibility for teaching programs, creates interest throughout and also allows structures to have flexibility of use.

The development intended includes:

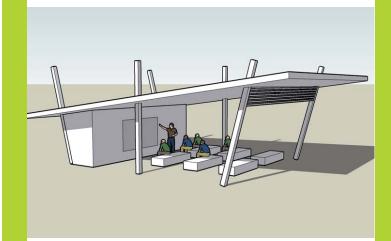
- Classroom/meeting space in the new building
- Outdoor classrooms in garden shelters
- Specific living plant collection(s) to support education
- Assembly area with interpretive panels
- Home for Horticulture

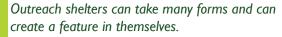
The gardens could host lectures and workshops on horticultural themes for the Bendigo and wider community

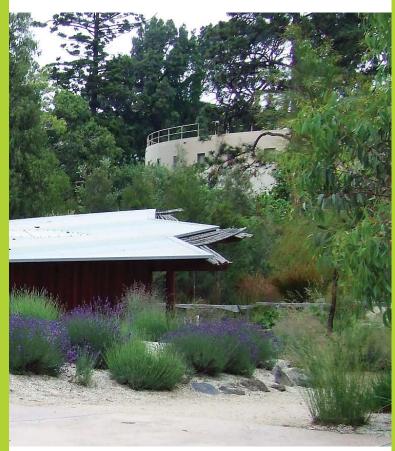
The Samuel Gadd Centre is currently used as the home for the Friends of the Bendigo Botanic Gardens, the Growing Friends and the Botanic Illustrators. It is intended to create a 'Home for Horticulture' which can become a base for all individuals and clubs that are interested in plants and the natural environment. This model is successfully used in Geelong Botanic Gardens and has provided many benefits to the groups and the Gardens. The 'Home for Horticulture' will be co-located with the service depot to allow flexibility of use and shared facilities and to build relationships between community members and the Gardens staff.













CHILDREN'S GARDEN

The children's garden/ access for all playspace allows people of all ages and abilities to experience plants, landscapes and nature in a fun way.



5.2.7 Children's Garden/Access For All Play Space

The children's garden/access for all play space allows people of all ages and abilities to experience plants, landscapes and nature in a fun way. The Children's Garden will be located on the west side of the Creek adjacent to complementary facilities such as toilets, the open events/ training space for kick-about, car parks, the aquatic facility and directly across the main water ponds from the central building.

It is intended that this space be based on living plants and natural materials to complement conventional built play equipment. This offers the opportunities for play with loose materials, plants and other features not typically found in traditional playgrounds and which is seen by play experts as beneficial to childhood development and learning. This different type of play experience also adds to the attraction of the Gardens. As possibly the only children's garden outside Melbourne it will attract visitors from outside Bendigo as well as throughout the region, and be a major draw card for the Gardens.

Possible treatments include:

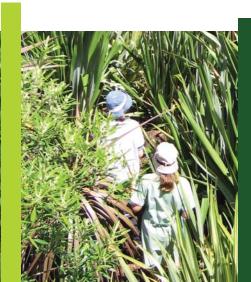
- Living structures and spaces such as plant tunnels, forests, jungles
- Topiary figures
- Water, sand and mud play
- Sensory plants
- Cubby house
- Plant mazes Tree house
- Kids flower patch
- Kids vegie patch
- Weird and wonderful plants collection
- Craft space/potting shed

Conventional play ground equipment will be designed into the Children's Garden and integrated so that it becomes part of the overall landscape.

The design and implementation of the Children's Garden can involve school children and can cater for children of all abilities. This has been successfully completed at Camp Hill School in central Bendigo where the school children were involved in planting the new play space. Successful models of this style of space can be found at Royal Melbourne Botanic Gardens, Geelong Botanic Gardens and at Wombat Bend Play Space in Lower Templestowe.

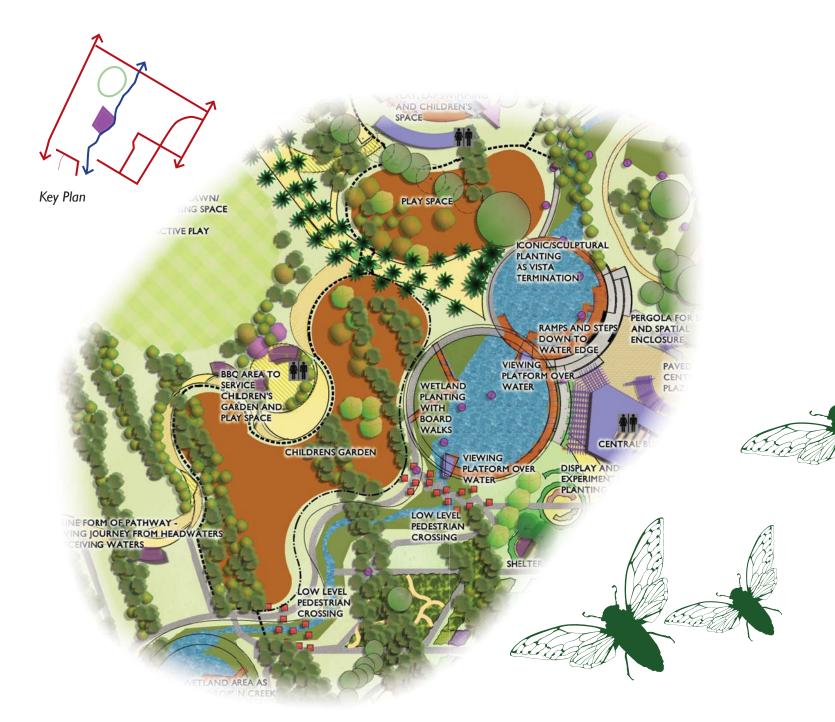












Play precinct layout showing colocation of Children's Garden, Play Space, family BBQ facilities and ball games area on Event space.

The Play Space Strategy (2009 - 2014) and the Community Access & Inclusion Plan 2006-2009 support play grounds providing accessible and varied play opportunities





Recently the children from White Hills Primary and Holy Rosary Primary have been involved in planting and harvesting vegetables in the Botanic Gardens







Local primary school students can be invoved in planting the Children's Garden in the same way that planting of the Camp HIII Primary School playground at Rosalind Park, Bendigo, was undertaken.

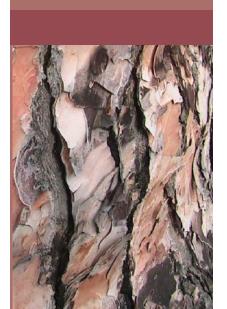


The kitchen garden at the Ian Potter Foundation Children's Garden within the Royal Botanic Gardens, Melbourne encourages community interest in home food production



The Ian Potter Foundation Children's Garden at the Royal Botanic Gardens, Melbourne allows children to interact with plants and a range of natural materials





ARBORETUM

5.2.8 Arboretum

An arboretum is a collection of trees and is usually characterised by very little, or no understorey planting. The concept behind the arboretum is to help extend the range of plant species grown across the site and provide a different type of landscape experience to the more intensive sections of the Gardens. It also provides green space but with reduced maintenance requirements.

The Arboretum will be established in the south west corner of the site and take its form from the geological striations found under Bendigo. The variations in geology will be brought to the surface and reflected in tree planting and earth forming.

Species would be selected in line with the Living Plant Collections Plan. The arboretum can also be used as a space to trial species not commonly seen in the Bendigo region to test their suitability for use in home gardens and as street trees.

Flexibility can be built into the arboretum, allowing the space to be utilised for events, festivals and functions, as well as being enjoyed for its botanical and seasonal interest.

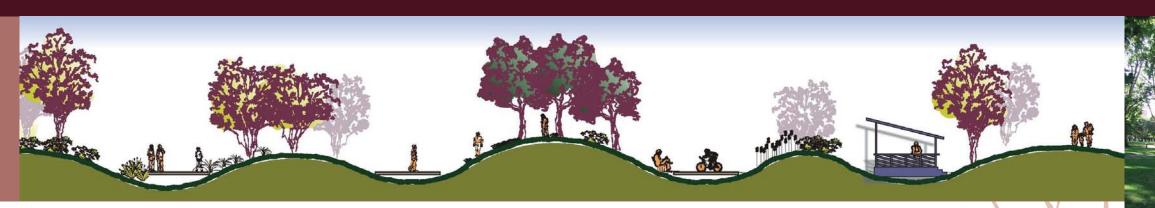




Possible treatments include:

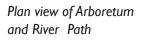
- Planting to reflect the species that would occur on a journey from the hills to the northern plains
- Creation of a 'riverine' path to facilitate the 'geological journey' described above
- Trees in bands to reflect the geology underlying the district
- Creating contouring over the site through mounds and/or swales to add additional interest

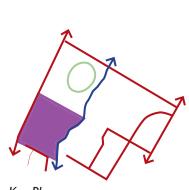




Cross Section through the Arboretum showing proposed landform and planting patterns







Key Plan



BENDIGO

CREEK

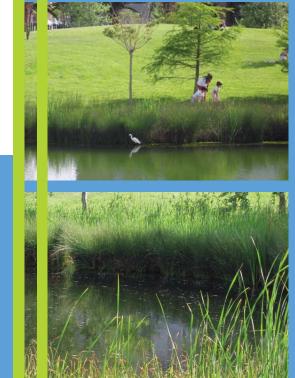


5.2.9 Bendigo Creek

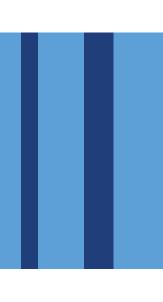
The Bendigo Creek dissects the site centrally, creating the Blue Water Axis and providing some fabulous development potential. As it is seriously degraded and significantly altered from its original course there is little imperative or obligation to keep it in its current form. This offers the opportunity to address the creek's alignment and structure in a number of ways. It also opens up possibilities for its interface with other elements and its use for education and interpretation on such things as indigenous community connections and uses; creek history and ecology; water loving plants, riparian vegetation water treatment and water sensitive urban design (WSUD) in central Victoria. Flood levels and storage volumes have been considered and allowances will be made to carry large volumes of water during high flow events.

Possible treatments include:

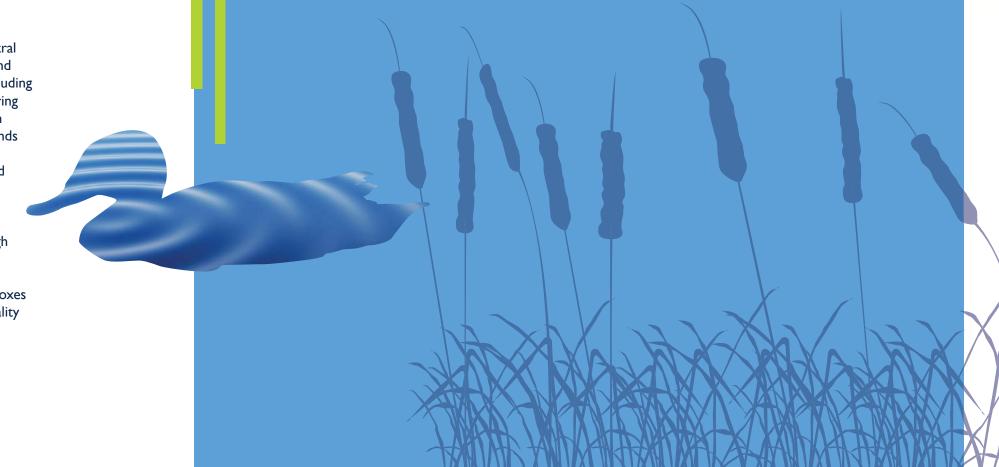
- Creation of two large central ponds and one smaller pond
- Naturalistic treatment, including reintroduction of meandering alignment and revegetation
- Creation of billabongs, islands and promontories
- Creation of permanent and seasonal wetlands
- Bridges to allow crossing, including service vehicles
- Paths and crossings through seasonally wet areas
- Structured edging such as retaining walls or gabion boxes
- Improvement of water quality
- Allowance for flooding





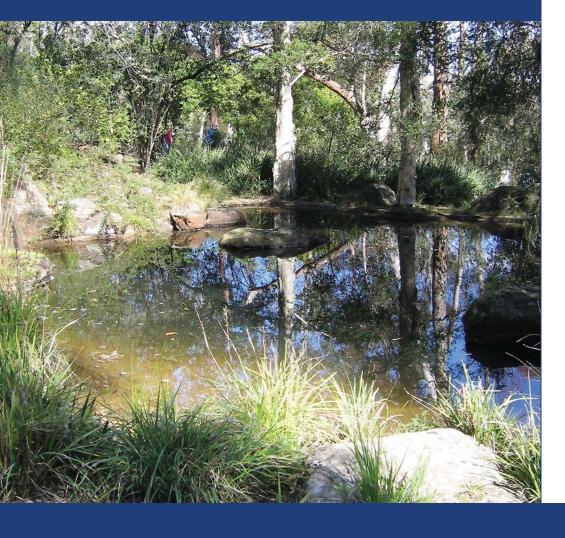








Cross-section through southern, smaller pond with wetland plantings and central board walk.





BILLABONG

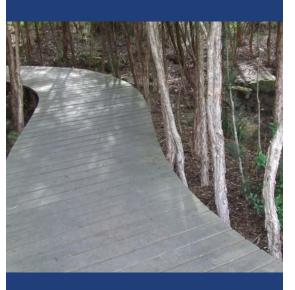


5.2.10 Billabong

The existing billabong in the current botanic gardens is a remnant of the original Bendigo Creek alignment. It is believed to be the only section of Bendigo Creek in its original alignment within the Bendigo urban area. As such it has significance on many different levels, including environmental, historic and cultural.

Possible treatments include:

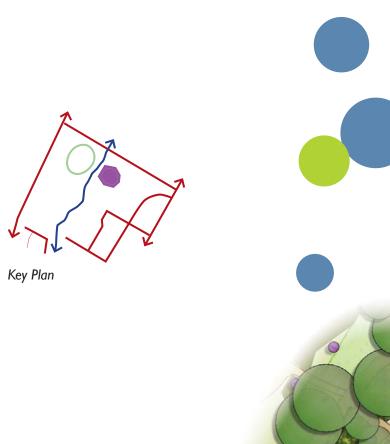
- Revegetation
- Creation of a possible Jaara Jaara 'meeting place' as a focus for interpreting indigenous culture (to be developed only in association with the local Jaara Jaara people)
- Re-instatement of historic features, such as bridges
- Re-instatement of filled-in section by creating a swale in that former alignment
- Planting of reinstated section with wet-loving species
- Building of a viewing platform
- Using totems, sculptures or other mechanisms to map the original course of the Bendigo Creek through the Gardens to illustrate the way in which the landscape has been manipulated.

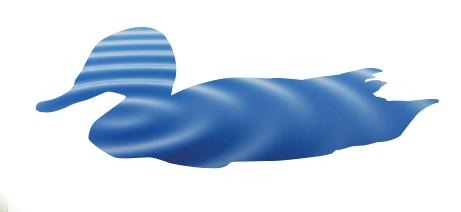














SHELTER TO BE RENOVATED VIEWING DECK

EXISTING COCKATOO CAGE TO BE REMOVED



WALK THROUGH AVIARY TO BE REMOVED LONG TERM

TOILET TO BE REMOVED







The existing billabong within the Bendigo Botanic Gardens, White Hills

The cast iron conservatory (or palm house) pictured in the Melbourne Botanic Gardens, circa 1880 (National Library of Australia collection)



The facility can be used for art and plant exhibitions in much the same way as the Conservatory in Conservatory Gardens is currently used. In addition it may be used for weddings, functions and events

CONSERVATORY

5.2.11 Cast Iron Conservatory

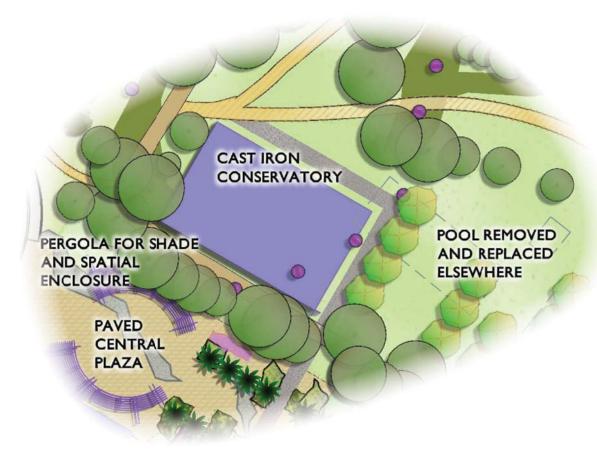
A 19th century cast iron conservatory that was once a feature of the Royal Botanic Gardens Melbourne is owned by the City of Greater Bendigo. Currently housed in pieces in the council's depot, it is intended to reconstruct the conservatory within the botanic gardens redevelopment. Final location of the conservatory is in the south-west corner of the heritage site, slightly west of where the pool is currently.

A new aquatic facility needs to be built before the current pool is removed allowing the conservatory to be rebuilt.

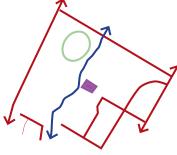
Positioning the conservatory at the proposed location not only enhances the heritage gardens it also creates a 'bookend' opposite the more modern new building. The two buildings in turn help to define the space that is the Central Plaza.

Possible treatments include:

- Use as a traditional glasshouse
- Use as an open sided structure, possibly to grow plants over
- Venue for functions such as plant exhibitions and demonstrations, weddings, poetry readings, musical soirees, art exhibitions, etc.

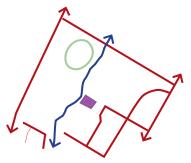


Proposed location for the Cast Iron Conservatory near the existing pool.



Key Plan

CENTRAL BUILDING



Key Plan



5.3 Events/Amenity

5.3.1 Central Building

Towards the centre of the overall site is a space for a central amenity building. The concept is to have a truly iconic architectural statement, both in design and sustainability. This would be designed to offer a flexibility of uses and may possibly include: café; function centre; meeting rooms; toilets; change rooms; viewing platforms; exhibition/ events space; formal and informal eating areas; offices for staff such as curator and/or education officer; classroom; change rooms for bridal parties/events.

The design of such a building will need to give consideration to giving 3 1/2 'front' sides to the building and screening the back of house operations from the Gardens. Its location demands that the northern, western, southern and at least some of the eastern elevation be high quality and create an 'outlook' for building users. Integration of garden terraces and and retaining walls towards the ponds will need to be included into the design.

The building design will be based on Environmentally Sustainable Design (ESD) principles.

Possible treatments include:

- Green roofs and walls (ie. covered in living plants)
- Passive and active solar design
- Water harvesting and recycling, within the building and to water sections of the Gardens
- Use of reclaimed and recycled materials
- Use of low embodied energy materials

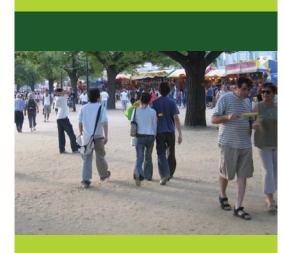
A feasibility study needs to be carried out and a brief developed for an architect to design the building. Flood levels will need to be considered in the design.















EVENTS

5.3.2 Events/Training Space and Western Entrance

An opportunity exists to create a large space that can be used for a diverse range of activities, events and sports training. The discussions and consultation amongst the steering committee and various key stakeholders have indicated a desire for a junior sports area to be associated with the White Hills Recreation Reserve (WHRR). It has been confirmed that the combined junior sports facility/multipurpose event space will be adequate for the needs of junior team training for cricket and football and will also allow for events to be staged.

The space is located along the Activity Axis near the White Hills Recreation Reserve to facilitate links with the shared car parks, the aquatic facility and the sports clubs. The space is on the western side of the Creek in line with the approved functional layout, and keeps the active elements distant from the more passive spaces to the east. The proposed location will provide families with an area in which to play ball games and have kick-about space while visiting the Children's Garden or the Aquatic Facility.

The intention is also to use it for appropriate community and cultural events such as wine festivals, moonlight cinema, appropriate music concerts or similar and for use for private events. This not only broadens the appeal of the Botanic Gardens, but will also help reduce some of the pressure on other significant heritage landscapes such as Rosalind Park and Lake Weeroona.

Entrance to this western precinct of the Gardens will be managed as a sequence of events in the same manner as the new eastern entrance. A broad path lined with Washington palms will be reinforced with a curved pergola of a similar nature that is proposed for the Central Plaza. This will

reinforce the connection between the spaces and firmly anchor the Western Entrance, the Events/training space and the associated facilities as part of the Botanic Gardens.

Possible treatments include:

- A large wide, open and flat lawn space
- Irrigation fittings at depth so they are not damaged by marquee pegs
- Tap-in points for sewerage so that portable toilets can be brought in for events
- Discreet service provision of electricity for events

Possible design elements of the western entrance include:

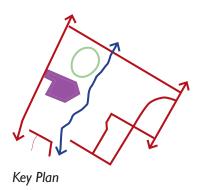
- Washington Palms reflecting the Palm Avenue to the east
- Curved pergola repeating architectural motif of the Central Plaza
- Curved gravel path repeating 'riverine' form used elsewhere













Layout of Events/Training Space next to western entrance and sports reserve car parking



Artist's impression from western entrance towards Children's Garden and BBQ facilities



5.3.3 Barbecue/Amenity Area

Facilities such as barbecues, toilets, shade structures and seating need to be provided. Some of these – such as shade structures – will be placed throughout the site. However, one larger dedicated area for barbecues and with toilets, picnic tables etc. has been allocated near the Children's Garden. Another area for shade structures, tables etc, is in the south-west section of the arboretum.

Possible treatments include:

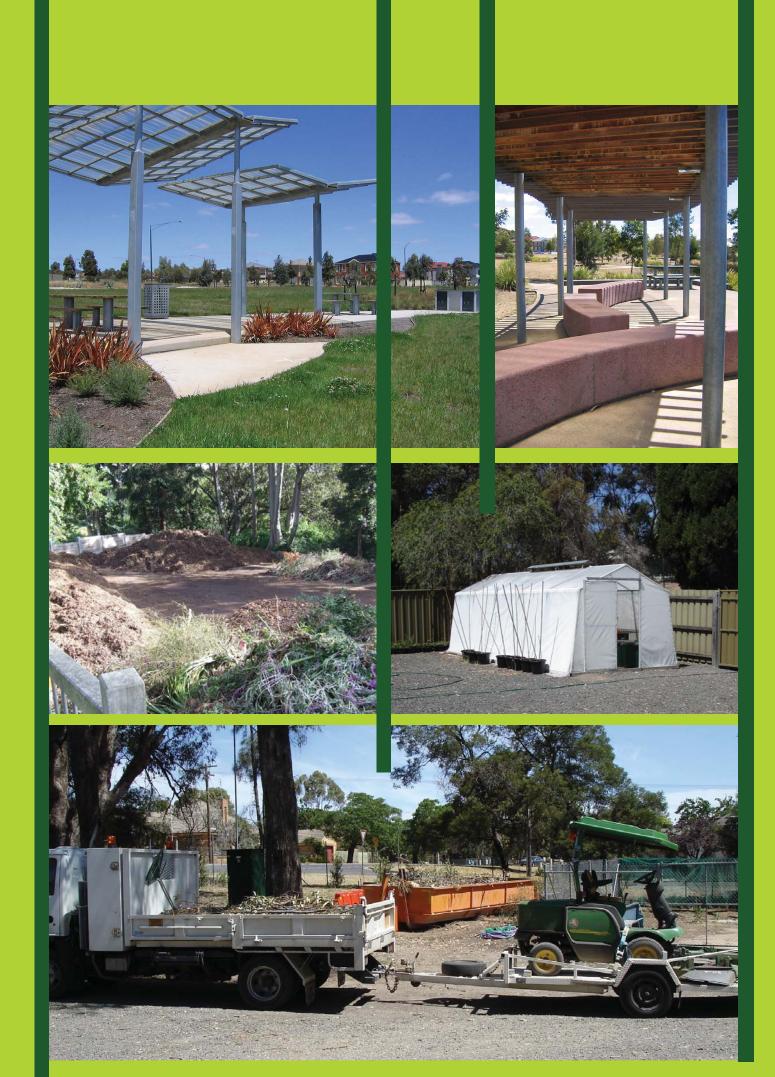
- Structures designed on Environmentally Sustainable Design (ESD) principles
- One-off designs specific to the site

5.3.4 Service Area

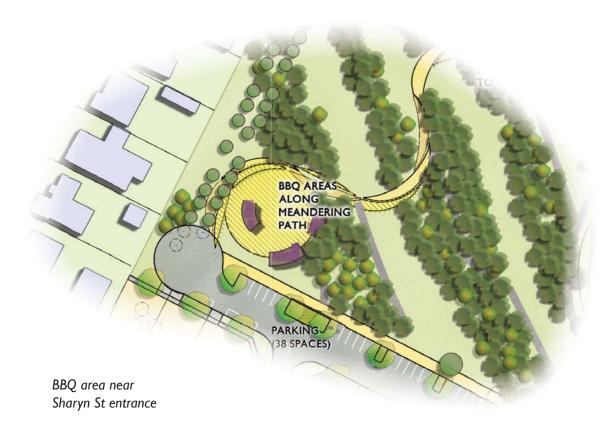
A service area needs to be created as a base for gardens' staff and operations. Facilities such as machinery, tool and materials storage, propagation area and staff facilities need to be provided. This will be located at the end of Bosquet St adjacent to the White Hills Primary School. The location minimises impact of traffic on nearby residential areas, and is convenient for regular garden maintenance. It is envisaged that the 'Home for Horticulture' will be based at the service area. The service area will need to be large enough to allow the turning of a semi-trailer.

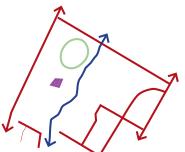
Possible treatments include:

- Integrating service area with other facilities
- Sharing service facilities with the Friends group and other interested parties
- Large on-site composting area for sustainability and public education
- Buildings designed on Environmentally Sustainable Design principles
- Screening area from public view
- Making area obvious to increase site security
- Iconic building design



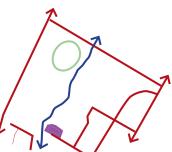


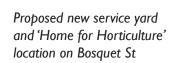


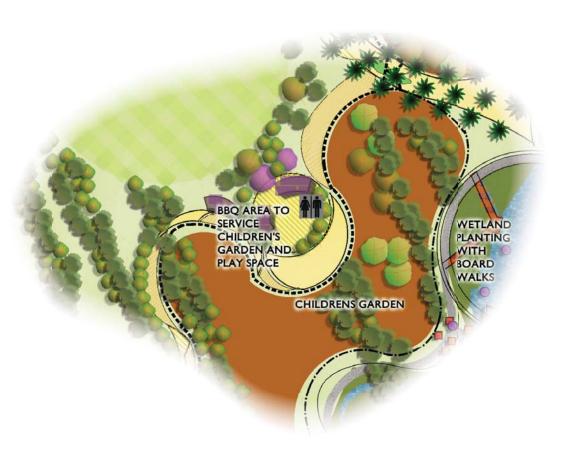


Key Plan









Main BBQ and amenities area centrally located between Children's Garden and the events space





The existing back and side fences present an unattractive boundary to the Gardens and an appropriate design solution must be sought



5.4 Interfaces and Edges

5.4.1 Urban Design

A number of improved outcomes are suggested through the use of 'best practice' urban design. There are a large number of back fences facing onto the greenfield site. This is a very unattractive aspect and has significant site and personal security implications. Having houses face onto the Gardens not only gives a much better aesthetic outcome, it importantly provides for passive surveillance of the Gardens by the residents who live in such housing. This is already demonstrated by the houses facing the Gardens along Scott Street.

Four streets in the greenfield site can have their dead ends addressed for easier traffic flow and for the turning of service vehicles such as rubbish trucks. Joining Sharyn and Louey Streets and Hamelin Street east and Bosquet Street with through roads facilitates better traffic flow for residents and to the Gardens themselves.

This proposal necessitates the sale of a number of blocks of land. The revenue from this land sale is intended to be used solely for the purpose of redeveloping the Gardens. A reserve fund will be required to demonstrate the clear and transparent use of the money raised.

5.4.2 Fences and gates

Fencing is required to protect the Gardens and its important botanical collections and features. It is intended to have the entire area east of Bendigo Creek as well as the Children's Garden and Play Space fenced within a 1.8 metre high fence. However, some of the interface of the Gardens and the Bendigo Creek will not be fenced as the creek itself will act as a 'moat' to prevent entry. This in turn, allows continuous views across the creek. While it is acknowledged that there may be occasional accesses across the moat, theft and vandalism of a scale that has been experienced in the unfenced sections of Ballarat and Geelong Botanic Gardens are expected to be rare.

The Children's Garden will have a 1.2 metre fence towards the creek, meaning that the entire Children's Garden has its own fence in line with the Play Space Strategy. Similarly the play space has its own discrete fence. The aquatic facility will also be fenced. The arboretum will remain unfenced. The White Hills Recreation Reserve will maintain its existing fencing along Kennewell and Scott Streets only.

Gates will be placed at strategic points around the Gardens.

Possible treatments include:

- Custom designed fencing at the Children's Garden to add interest
- Tall, non-climbable fencing around the Gardens precinct to prevent vandalism
- Elaborate gates and pillars at the main entry to indicate the importance of the main entry













Good access for prams, pedestrians and bicycles encourage community visitation and contribute to better public health



5.4.3 Accessibility to and in the **Gardens**

Public transport

Public transport is available through two bus routes, one with a stop at the intersection of Napier and Scott Streets and the other stopping near the corner of Scott Street and Goynes Road.

Drop off and pick up zones

A drop off zone is included beside the main entrance at the western end of Hamelin Street east of Bendigo Creek.

A second drop off zone is at the roundabout off Kennewell Street. This allows pick up and drop off close to the aquatic facility, children's garden, amenities and the events lawn. A pergola is included in the design for this area.

Parking for private vehicles

Sufficient parking needs to be provided at strategic locations around the site. Parking has been provided along the new road near the main entrance. Additional parking also occurs at the western end of Bosquet Street. This parking also addresses a need for weekday parking that is required for school drop off and pick up times.

Parking along Scott Street has been redesigned to accomodate additional parking spaces. The realignment of the road here is also intended to slow vehicles as community consultation indicated that this was desired.

A large area of parking has been allocated inside the White Hills Recreation Reserve at Kennewell Street to service the active

zone and also the events space. It is possible that spillover car parking for larger events could be housed temporarily on the grassed areas there. Additional parking could also occur along the edges of Kenewell Street.

Possible car park treatments include:

- Using car parks for water harvesting to water the shade trees
- Using porous surface materials to promote ground water recharge
- Planting trees to provide shade and reduce the visual impact of the hard surfacing

Pedestrian and cyclist access

The Bendigo Botanic Gardens is accessed via the Bendigo Creek Linear Trail and will become a major stopping point on the trail.

Pedestrian and cyclist access is also readily available from nearby streets and neighbourhoods.

Accessibility within the Gardens

A considerable path network will be created throughout the whole site allowing people to explore the Bendigo Botanic Gardens at leisure.

Vehicle access within the Gardens will be restricted to service vehicles only.

Possible path treatments include:

- Use of gravels to reinforce the historic nature of the Gardens
- Use of porous materials such as gravels to maximise water and air penetration to the root zone of plants and to reduce the incidence of compaction.
- Selected major paths in asphalt where heavier loads are expected
- Shaping of asphalt paths to maximise water harvesting and/or soil infiltration



Bendigo Botanic Gardens, White Hills Master Plan February 2010







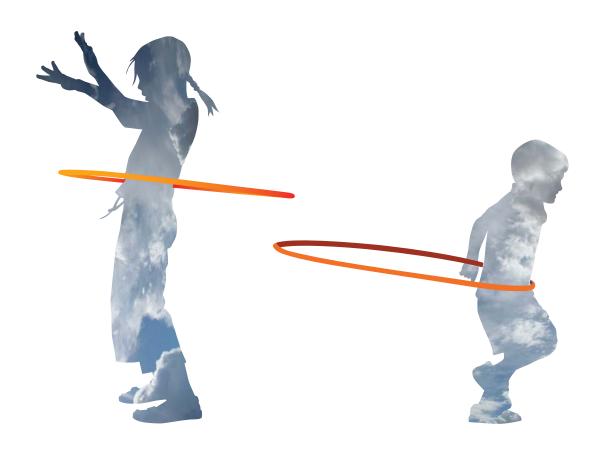












5.5 Recreation Facilities

5.5.1 White Hills Recreation Reserve

The existing recreation reserve serves a number of active sports as well as social and recreational uses. The pavilion has recently undergone an extension and there are relatively new netball courts. The oval is irrigated by recycled water. The grounds of the recreation reserve and car parking need to be addressed.

Possible treatments include:

- Creation of viewing mounds
- Creation of new car parking off Kenewell Street
- Planting of additional trees to beautify the area
- Planting of 'bands' of trees to continue the representation of the region's geology as occurs in the arboretum
- Restriction of vehicle access to allow successful plantings
- The removal of internal fences in order to have the recreation reserve blend with the rest of the landscape including the creek and arboretum

5.5.2 White Hills Primary School Oval

White Hills Primary School has an existing oval at the Gardens' end of the school grounds. This is watered by recycled water. Government policy encourages community use of such facilities and this oval can be utilised by local groups for sports training and junior cricket.

While the location is approximately 500m from the current club room facility at the WHRR, it provides a legitimate alternative training and game day location for junior sport in the precinct. The added benefit of having recycled water available at this site will mean that the playing surface can be well maintained to provide a quality playing surface that has not been possible in recent years due to water restrictions.

Possible treatments include:

- Facilities such as toilets and change rooms that are autonomous of the school
- Planting and landscaping to beautify the area







FACE T







5.5.3 Aquatic Facility

The existing White Hills Swimming Pool was constructed in the 1950s. Little substantial improvement has been made to the facility since construction and the pool is in poor condition.

The community was consulted during February-March 2009 on options for the future of the aquatic facility during the Options Paper process. Community consultation clearly indicated that the current pool should not be removed until a new facility was provided. However, there was also general agreement that the current pool is well past its prime.

At its meeting of 6 May 2009 the Council of the City of Greater Bendigo resolved to 'commence development of plans for a new swimming/aquatic facility and remove the existing swimming pool once an alternative is provided'.

Possible treatments include:

- New pool of a lagoon style
- Straight edge to indicate lap swimming lanes
- Toddlers area
- Beach entry to promote accessibility
- New change rooms, shade structures, kiosk and other facilities
- Water play elements to create additional interest
- Landscaping of the site to suit its setting

Further work needs to be done on the design of the replacement facility, and the community and stakeholders will be widely consulted during this process.





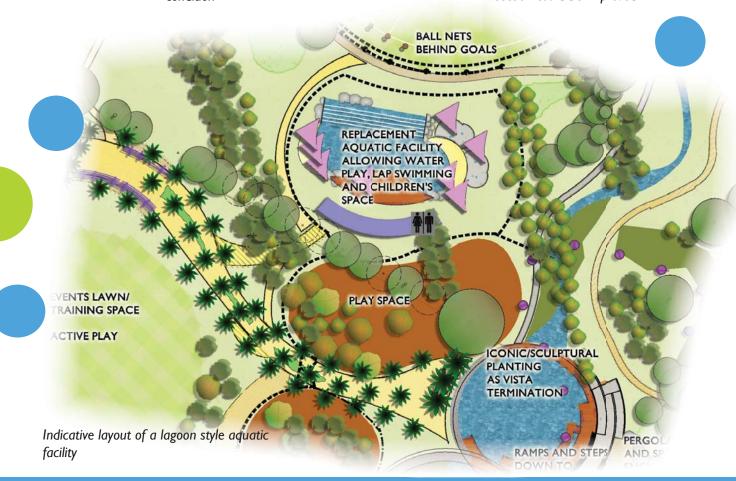


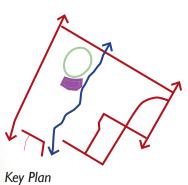




The existing White Hills Swimming Pool is in poor condition

The view of the pool from the heritage section could be improved



















6.0 IMPLEMENTATION



6.1 Recommendations

6.1.1 Adopt the Living Plant Collections Plan

The Living Plant Collections Plan (See Volume 2 Appendices) sets out a clear vision, policies and guidelines for selection, recording, key interpretive messages and management of living plant collections to be established in the Bendigo Botanic Gardens, White Hills. It also names proposed plant collections derived after a period of stakeholder consultation. It is recommended that the Council adopt the Living Plant Collections Plan as its guiding document for plants within the gardens.

See Volume 2 for Draft Living Plant Collections Plan

6.1.2 Appoint Curator

The development of this Master Plan is intended to give long term direction to the restoration of the heritage gardens and the creation of the new areas. The role of Curator is critical to oversee the implementation of many of the facets of this Master Plan. In particular, the curator's role will be to guide the 'botanic' aspects of the Gardens through implementation of the Living Plant Collections Plan and other horticultural aspects. The Curator is also critical to implementation of educational and interpretation aspects of the Bendigo Botanic Gardens.

Other roles of the Curator include:

- Oversee day to day operations
- Develop and implement the management plan
- Develop and implement the education plan (with the Education Officer)
- Develop and implement Events Program
- Apply for funding and pursue philanthropic donations and sponsorship
- Establish and develop partnerships and relationships with external organisations
- Co-ordinate capital works (with the project management team)

- Promote the Gardens in the wider community
- Liaise with relevant stakeholder groups
- Establish Bendigo Botanic Gardens
 Foundation (with relevant assistance)

The Heritage Significance Assessment and Strategy (HSA&S) also recommends, as a Priority 2 action, to 're-instate the position of curator of the White Hills Botanic Gardens' (Lee Andrews 2008: 12). It should be noted that this portion of the document was adopted by the Council of the City of Greater Bendigo.

It is recommended that the Curator's position is created for the 2010-2011 financial year.

6.1.3 Appoint Education Officer

The Bendigo Botanic Gardens Master Plan has been developed with the education potential of the Gardens firmly in its brief. The Interpretations Strategy has focused on tying the Gardens' interpretation to schools' education curriculum, with direct reference to the Federal Government guidelines 'Educating for a Sustainable Future – A National Environmental Education Statement for Australian Schools 2005' (Commonwealth of Australia: 2005). An appointed Education Officer will develop the educational material further, as well as liaising directly with educational institutions and students. There is potential to use casual or sessional staff on a cost neutral basis for provision of education session once the material has been developed.

See Volume 2 and Appendices of more information regarding education planning

6.1.4 Review Management and Staffing

The creation of the Master Plan for the Bendigo Botanic Gardens provides the ideal opportunity to review the management and staffing of the Gardens. Currently the Botanic Gardens is managed by the City of Greater Bendigo's Parks and Natural Environment

unit which sits within the Presentation and Assets Directorate. Various other models exist for Botanic Gardens and similar cultural institutions, such as art galleries.

It is recommended that the management of the Bendigo Botanic Gardens be reviewed. The principal reason for this recommendation is that the Bendigo Botanic Gardens must be seen and treated as a cultural institution, alongside the Bendigo Art Gallery (BAG) and The Capital, two other premier cultural institutions of the city. Strong links are also required with Tourism and with Marketing and Major Events, which has decided advantages as the Botanic Gardens increases its role in tourism and hosting a range of siteappropriate events. Like the Bendigo Art Gallery and The Capital the Botanic Gardens is seen as being a largely autonomous unit within the Council structure.

It is recommended that the management review be undertaken as soon as possible, preferably in the 2010-2011 financial year.

It is also recommended that the number of horticultural staff that work within the Gardens be increased in line with increasing work loads as the Gardens develops.

6.1.6 Investigate Hydrology

Further investigation needs to be conducted with consideration of hydrological issues such as flooding, water quality management and water harvesting.

6.1.7 Traffic Investigation

Further investigation needs to be conducted into traffic and parking issues in the surrounding streets.



6.0 IMPLEMENTATION

6.1.8 Cycle Path Design

More detailed design work needs to be conducted with consideration of the design and technical requirements of the Bendigo Creek Trail bicycle ppath.

6.1.9 Investigate Land Reservations and Zonings

The entire crown land area originally set aside for the botanic gardens should be re-reserved as 'Botanic Gardens'. This should wait until after the existing swimming pool is removed once a new pool is built. This is also one of the recommendations of the Heritage Significance Assessment and Strategy (HAS&S) adopted by Council (Lee Andrews 2008: 12).

Approach should be made to the state government to include the area of crown land (currently uncategorized Public Land) between the existing Gardens' western boundary and the creek reservation (currently crown land class Public Land Water Frontage) into the re-reserved Bendigo Botanic Gardens. The crown land area that was the former acclimatisation area and is now the White Hills Recreation Reserve should remain reserved as Public Parks and Recreation Zone (PPRZ).

Investigations are needed as to whether it is possible or appropriate to include the actual Creek Reserve into the Crown Lands Reservation for the Botanic Gardens.

The entire area of the Bendigo Botanic Gardens (i.e. heritage site, plus new botanic gardens and arboretum), including those areas of the former Hamelin Street road reserve proposed to be part of the Gardens, should be zoned Public Parks and Recreation Zone (PPRZ). The existing White Hills Recreation Reserve should retain its current zoning of PPRZ.

6.1.10 Investigate Land Acquisitions and Sales

Acquisition

It will be necessary to approach the state government to acquire the following land parcels in order to incorporate them into the Botanic Gardens:

- The part of the existing Hamelin Street road reserve between Kennewell St and Raglan St
- The crown land between the creek and the western edge of the heritage section

Once the swimming pool has been removed and on completion of the new aquatic facility the entire site should be re-reserved as 'Botanic Gardens'.

Council should acquire lots near the corner of Hamelin and Kennewell Streets for future development of the Botanic Gardens.

Land Sales

Some of the land in the area south of Hamelin Street should be sold to create improved access to the site and provide security through passive surveillance. In the south-west corner of the site some house blocks should be created which will overlook the arboretum. This will give added security to the site. At the same time a road connection between Sharyn and Louey Streets is created to overcome the two dead ends that currently exist there.

Additional house blocks are created behind Raglan Street in the south-east area of the site. Again these give excellent passive surveillance to the intensive Botanic Gardens area that will be created there .A new connecting road links Hamelin Street and Bosquet Streets and provides parking and the main pick up and drop off location.

It is recommended that all monies raised from the sale of land go into the Bendigo Botanic Gardens project. A specific reserve fund needs to be established to demonstrate a clear and transparent accounting process of ensuring the return of monies into the Gardens' development.

6.1.11 Develop a Management Plan

It is important for the proper operation of the Bendigo Botanic Gardens that a thorough Management Plan (including relevant policies such as Sponsorship) be prepared and adopted. The preparation of the Management Plan should be one of the first tasks of the newly appointed Curator.

6.1.12 Develop a Marketing Plan

The Bendigo Botanic Gardens needs to be well promoted to increase visitation from Bendigo and regional residents, but also to attract tourists from outside the area. This in turn will have considerable economic benefit for the community. A proper Marketing Plan should be developed to guide the promotion and marketing of the BBG and its events.

6.1.13 Develop an Education Plan

An Education Plan should be devised to guide the educational role the Bendigo Botanic Gardens carries out for the local and regional community, as well as those visitors from further afield. The Education Plan would be one of the first tasks of the Botanic Gardens Education Officer. Reference should be made to the Interpretation Strategy (see Volume 2, Interpretation Strategy appendix).

6.1.14 Develop an Events Program

Ongoing events and temporary happenings are an important part of the public programmes of any botanic gardens. An Events Programme, along with appropriate policies should be developed.

See Volume 2 and appendices for more information regarding events planning.



6.0 IMPLEMENTATION

It is essential that a Cultural Heritage Management Plan be prepared for the entire site before works progress on the Bendigo Botanic Gardens. Under the Aboriginal Heritage Act 2006 a Cultural Heritage Management Plan is required for the Bendigo Creek and within 200 metres of it.

6.1.15 Commission a Cultural Heritage Management Plan

It is essential that a Cultural Heritage
Management Plan be prepared for the entire
site before works progress on the Bendigo
Botanic Gardens. Under the Aboriginal
Heritage Act 2006 a Cultural Heritage
Management Plan is required for the
Bendigo Creek and within 200 metres of it.

6.1.16 Establish the Bendigo Botanic Gardens Foundation

Funding the ongoing conservation and development of the Bendigo Botanic Gardens can be greatly assisted by having its own source of funds. This should be done through a charitable trust set up as the Bendigo Botanic Gardens Foundation. This would allow many individuals and businesses to make tax deductible donations to the Gardens. Funds from the foundation could be spent on a range of projects and initiatives that would not be funded under the normal day to day operations of the Gardens. This model is currently very successful for the Bendigo Art Gallery and other similar cultural institutions.

6.1.17 Create a 'Home for Horticulture'

The Bendigo Botanic Gardens should be the centre for horticultural, botanic, natural environment and other related interests within the region. The existing Samuel Gadd Centre is already home to the Friends of the Bendigo Botanic Gardens and their sub-groups, The Growing Friends and The Botanic Illustrators. Many other groups within the City of Greater Bendigo could benefit by having a more formal relationship with the Botanic Gardens. A new building should include space for a horticultural library, meeting rooms, exhibition space, etc. The City of Greater Bendigo's support for the home for horticulture will exemplify its commitment to 'developing the community' which is a stated strategic objective of the current Council Plan (CoGB Council Plan 2009:1). In many ways this is similar to the support the Council currently offers to other community groups, such as sports clubs.





7.0 SEQUENCING AND STAGING

The Bendigo Botanic Gardens development is not a project that is anticipated to be completed in the short term. It is understood that there are many competing demands on the City's resources, and that this project will need to be staged. The construction of such a facility also requires careful consideration to the sequencing and logistical control for construction. There are a number of elements that are required or desirable to be built early, and subsequent elements or gaps can be filled at a later date.

There are a number of logical components of the project that can be completed as 'stand alone' elements. These include items such as restoration of the heritage gardens, the central building, the reconstruction of the Cast Iron Conservatory and others. It is essential however that the ground work be done early in the program to allow the 'stand alone' components to be completed minimising surrounding disturbance. Items such as bulk earthworks and services are required to be done early. While this means that there may not be a marketable sale or public relations component to these early works, they are nonetheless essential.

In addition, there are many elements in the project that are able to be completed in parallel or in overlap with others. The level of funding and resources allocated will determine the amount of parallel work that can be achieved.

A broad outline of the sequence is shown in the table below. This is a preliminary indication of possible works scheduling and can form the basis of further planning and design, however with any complex projects of this nature, it is desirable to have some flexibility in the scheduling to take advantage of possible external funding sources and other opportunities that arise.

There is a possibility that the site has soils contamination washed down from the centre of Bendigo as a result of the historic mining and industrial activities. Before any earthworks are undertaken an Environmental Site Assessment will need to be undertaken to enable knowledgeable decisions about soil management issues.







7.0 SEQUENCING AND STAGING

Anticipated Sequence for development

With indicative sample of tasks in each phase

Preliminary works

Planning and feasibility for new aquatic facility Environmental Site Assessment and Soil testing Subdivision of Lots

Planning Scheme amendment for Gardens Precinct

I Heritage Garden Restoration

Drawings and specifications

Heritage Permit

Heritage Garden Restoration Works

2 Site Wide Bulk Earthworks

Design and Permits

Detailed earthworks and Hydraulic Design

Permits and sign off from

NCCMA and Goulburn Murray Water

Services Installation and re-routing where required

Recycled water line

Other services as identified

Earthworks

Earthworks Drainage

Revegetation

3 Arboretum and Framework Planting

4 New Main Entrance

Purchase Washingtonia Palms Re align Hamelin St East

Underground power lines along Hamelin St

Plant Palms

5 Childrens Garden and Play Space (incl Western Entry)

Design and Spec Consultation

Construct

6 Garden for the Future (Core Works)

Detailed Design and Specification

Works

Pathways

Framework Tree Planting

7 Construction of Event Space

River Path

BBQ's and Picnic Facilities

8 Central Plaza

Design and Spec Construct

9 Central Ponds

Design and Spec Construct

10 Garden for the Future (Finishing Works)

Detailed Design and Specification

Works

Pathways Planting

II Service Area

12 Central Building

Design and Spec Construct

13 Creek Realignment and wetlands (Southern Section)

Design and Spec Construct

14 Aquatic Facility

Design and Spec Construct Demolish existing Reinstate Gardens

15 Reconstruction of Cast Iron Conservatory

16 Creek Realignment and wetlands (Northern Section)

Design and Spec Construct

17 Western Car park

18 New Street at Hamelin - Bosquet

Design and Spec Construct Sell

19 New Street at Sharyn - Louey

Design and Spec Construct Sell



8.0 FUNDING THE PROJECT

It is acknowledged at the outset that this is a very ambitious project, and as such it will take time and resources to ensure its success. It is not however important that the City fund the project entirely from its own coffers, or that the works are done in a designated time period. It is the responsibility of the Councillors of the day to assess the value of the budget on an annual basis, and allocate the Budget they see fit. This is one of the main roles of the elected City Councillors.

The Botanic Gardens is a visionary project that will leave a lasting legacy for future generations in Bendigo and the region. The costs should not be seen as purely a dollar figure, but as an equation about 'return on investment'. The return will be lasting and continuous through education. Children that are inspired and learn in this environment will grow to be valuable members of our community. Improved facilities and economic growth attributed to Gardens through events and tourism will continue after the initial capital cost of the project has been forgotten.

It is important to note that there have been a number of Botanic Gardens that have recently been developed and many of the elements with these have been privately funded. There is an existing appreciation by Government and philanthropic organisations of the value of a quality botanic garden. Examples of this include:

Royal Melbourne Botanic Gardens The Ian Potter Children's Garden

 Royal Melbourne Botanic Gardens cost was \$1.9 million. The entire cost of the development was funded by the lan Potter Foundation – a charitable trust that supports community wellbeing, education, environment and many other fields.

The Volcano – A current project in the SW corner of the Royal Melbourne Botanic Gardens that is being funded by the Myer Foundation

Adelaide Botanic Gardens

Santos has recently announced funding of \$2 Million for the further development of the Museum of Economic Botany, the establishment of a Kitchen Garden project and the Seed Conservation Project.

Ballarat Botanic Gardens

The Robert Clarke Conservatory and Centre (conservatory, offices and shop) was opened in 1995 by the bequest of \$2.0 Million form the Clark family original proprietors of the Ballarat Courier.

These type of private funding opportunities will also be available to the Bendigo Botanic Gardens once the project gains momentum. This will initially require Council funding.

Government Funding Sources

There are many opportunities for funding that lie within State and Federal Government Grants. The Victorian State Government has many grant programs that will be directly relevant to the Bendigo Botanic Gardens. These include areas of funding for environment, sports and recreation, accessibility and others. These include:

Victorian Government

Department of Planning and Community Development (DPCD):

Community Facilities Program: Category Major Facilities, sub-category Building Community Infrastructure: Funding up to \$500,000.00 provides grants to improve places where communities meet and interact. Applications under the Majors should focus on building or upgrading community sport and recreation facilities that are innovative, effectively managed, environmentally sustainable and well-used. This fund could be used to offset the cost of the proposed new play space.

Department of Planning and Community Development (DPCD):

Community Facilities Program: Category Major Facilities, sub-category Aquatic Acces/Better Pools program fund up to \$2,500,000 grants to improve aquatic facilities. Applications under the Aquatic Access / Better Pools category will focus on improving the ability of local government to build or upgrade community aquatic and recreation facilities.

Victorian Heritage Council – Victoria's Heritage Grants are available for 4 categories of funding for listed heritage places:

- repair and conservation of heritage places and objects
- interpretation of heritage places and objects
- local government heritage studies and advice and
- community collections management.

Federal Government

From time to time Federal Government funds are available for which elements of the Bendigo Botanic Gardens would be eligible. The City of Greater Bendigo will maintain contact with federal government departments and a watching brief for federal grant opportunites that may arise.

Over the coming years in which this project is anticipated to be delivered, there will be ongoing opportunities for federal, state and private funding to supplement and compliment the funding put forward by the City of Greater Bendigo.



8.0 FUNDING THE PROJECT

BENDIGO BOTANIC GARDENS

Opinion of Probable Cost - February 2010

The following costing figures have been derived through a thorough estimating process (refer Volume 2, appendices for details).

Nevertheless, they constitute opinion of probable costs only and final costs are influenced by a multitude of factors like final design, price fluctuations, tender results etc.

Item No.	Description of Work	Lower End Estimate	Higher End Estimate
1	Heritage Site	\$1,469,000	\$1,740,000
2	Entry Plaza	\$1,374,000	\$1,859,000
3	Garden for the Future	\$3,242,000	\$4,280,000
4	Creek Works	\$3,068,000	\$4,070,000
5	Arboretum/Botanic Park	\$1,998,000	\$2,670,000
6	Recreation Reserve	\$ 238,000	\$ 310,000
7	Children's Garden and Play Space	\$2,130,000	\$2,660,000
8	Cast Iron Conservatory	\$2,468,000	\$3,090,000
9	Central Building	\$1,513,000	\$1,820,000
10	Service Area	\$ 725,000	\$1,000,000
H	Hamelin St East	\$ 110,000	\$ 160,000
12	Car Parking	\$2,384,000	\$3,000,000
13	Subdivision	\$ 330,000	\$ 620,000
	GRAND TOTAL	\$21,049,000	\$27,279,000
	Swimming Lagoon	\$4,753,000	\$5,280,000

RPRETATIO

9.0 INTERPRETATION

9.1 Introduction

The discovery of gold at Bendigo and the subsequent economic boom brought wealth and prestige to this growing rural township. An impressive Botanic Garden was laid out, and formed part of Victoria's highly significant regional botanic collection. Today this forward thinking and pride are again at the helm of a new project. The redevelopment and expansion of the Bendigo Botanic Gardens at White Hills is an exciting and ambitious project that will bring back the botanic focus of the original garden and unite it with a new contemporary botanic gardens experience.

9.2 The Interpretation Strategy

An exploration into the thematic possibilities of the expanding Gardens was commissioned in June 2009. The objective was to identify themes and storylines that could be incorporated into the development of the Gardens landscape design to enrich the plant collections, the educational possibilities and the overall visitor experience. The interpretation strategy recommends interpretation themes, sub-themes, storylines and trails that inform the plant

collections, landscape design, education

programs, signage, visitor movement,

brochures and special interest events.

9.3 Garden Areas

To better understand the thematic flow of interpretation through the Gardens, the three main development sites have been given titles. They are: The Built on Gold Garden (the heritage garden)
The Garden for the Future (the contemporary garden)
The Arboretum (the arboretum)

9.4 Themes

The Garden Areas also have their own Themes, which are reflected in their titles: Built on Gold Garden Theme Garden for the Future Theme The Arboretum Theme

9.4.1 Built on Gold Theme

The Theme is both a literal and metaphorical reference to the Gardens' beginnings. Gold brought wealth to Bendigo, which built the Botanic Gardens, and gold lies beneath the Bendigo surface. The interpretation explores the evolution of the Gardens from acclimatisation to conservation, Victorian and Edwardian gardening styles and practices, and the significance of the Gardens to the Victorian regional botanic collection.

9.4.2 Garden for the Future Theme

We all need to 'garden for the future' in order to live more sustainably and in better harmony with our natural environments. The Garden for the Future Theme will encourage this with examples of sustainable gardening practices, better plant choices — local and international - and with a particular focus on water conservation.

9.4.3 The Arboretum Theme

This theme explores the changes in geology, forests and landscapes as might be experienced if following a water-course from the hills of Daylesford to the northern plains. Changes that occur to habitats along the way can be traced by looking at the geology of the region. Nutritional differences in the soil encourage the growth of different plants and the Arboretum will tell this story.

9.5 Garden-wide Themes

There are also four major themes that interpret the Gardens as a whole, and move visitors throughout the entire landscape. They are: Touched by Gold Theme Refreshing the Dry Theme Seven Seasons Theme
By Design Theme

9.5. I Touched by Gold Theme

This Theme is about celebrating gold in all its many and varied forms. The Theme brings into focus the ways that gold has influenced plant, animal and human existence in the Bendigo region. There are similarities in thematic content to the Built on Gold Garden Theme. This is unavoidable, given the emphasis on 'gold'. However the purpose for the two themes is different. Built on Gold is exclusively about the heritage of the Gardens with a nod to future sustainable practices, and the Touched by Gold Theme is about Gold, its influences in the colour of plants, and the interrelationship between these plants and animals, as well as its historic references. The Theme is also garden-wide and lends itself to a self-guided trail.

9.5.2 Refreshing the Dry Theme

This Theme explores water; water quality, water harvesting, recycling, and conservation, water tolerant plants, wetlands habitat, our need for water health, and the Bendigo Creek.

There is a major focus on water conservation throughout the Gardens, so this theme has been developed in more detail than others.

This garden-wide theme is also a Trail.







9.5.3 Seven Seasons Theme

With a renewed interest in our climate and environmental change, a theme that focuses attention on the signs that indicate changes in seasonal activity is timely. The Seven Seasons Theme draws on indigenous knowledge that was/is used to know what to eat, where to find it, where to move to, and what weather was on the way. Living sustainably is about reading and understanding nature so that we can live in harmony with our environment. The Seven Seasons Theme will assist us in achieving this. This garden-wide theme is also a Trail.

9.5.4 By Design Theme

This Theme illustrates the various elements, thought and creative expression that produced the landscape design for the Gardens. It will articulate the shapes, pathways, colours, textures, materials, heights, sounds and scents of the Gardens, providing a deeper understanding of the intrinsic value (and beauty) of creative landscape design.

9.6 Garden-wide Trails

The Garden-wide themes influenced three major trails that also move visitors throughout the Gardens, but in a more sequential way:
Touched by Gold Trail
Refreshing the Dry Trail
Seven Seasons Trail

9.7 Education and Education Officer

Education was also investigated and themed programs for prep to school year 10 have been suggested. The programs relate to the curriculum taught at these year levels with the main focus on sustainability education. The appointment of an Education Officer is recommended in the early stages of development. The Education Officer needs to increase the profile of the Gardens by networking with education groups, both regionally and state-wide, promoting the Gardens focus on Sustainability Education, and offering Teacher Professional Development about sustainability education. All this needs to coincide with the development of new education programs.

As the Gardens expand, so can the education programs. These future programs could be cost effective or even cost neutral and be delivered by sessional educators and may be cost neutral. However, the development stage needs a dedicated Education Officer to get things started.

9.8 Visitation

A 'world-class botanic garden would be well supported by visitation according to tourism research. A Bendigo Visitor Profile and Satisfaction Report conducted in Bendigo by Tourism Research Australia, April and May 2007, found that visitors to Bendigo mostly visited friends and family and that 36% of visitors intended to, or did visit a botanic garden in Bendigo. Regional and state-wide tourism findings drawn from the Goldfields Market Profile, Tourism Victoria, 2008, and the Regional Tourism Profiles, Bendigo Loddon Region, Tourism Australia, 2007, supported this visitor profile and indicated that visitors primarily came for nature, culture and heritage, indigenous connections and food and wine. Anecdotal information indicated that local visitation to the Gardens included a wide-range of visitor types, but particularly family groups, and numbers had seasonal highs and lows. They visited casually or as part of organised events.

9.9 Staged Implementation

The Staged Implementation strategy incorporates the latest design information and caters for immediate marketing potential. The strategy follows the Gardens Master Plan but is required to deliver key messages from the beginning. The Gardens will be developed as funding becomes available. The interpretation will be implemented in stages to match the short, medium and long-term development plans. Each of the Garden-wide Themes and Trails have their own mini staged implementation, indicated by PI (part 1), P2 (part 2) and P3 (part 3). Each of the stages will need to be reviewed annually and/or at the completion of each stage. Development plans can suddenly

change if funds become readily available, or unforeseen obstacles emerge. The key is to plan strategically, and review regularly.

9.9.1 Stage One - Short-Term

Built on Gold Theme
Touched by Gold Theme/Trail PI
Seven Seasons Theme PI
Refreshing the Dry Theme PI
Education Officer
Education Hub PI
The Arboretum Theme

9.9.2 Stage Two - Medium-Term

Seven Seasons Theme/Trail P2
Refreshing the Dry Theme/Trail P2
Touched by Gold Theme/Trail P2
Grow your own Adventure

9.9.3 Stage Three - Long-Term

Garden for the Future Theme Seven Seasons Theme/Trail P3 Refreshing the Dry Theme/Trail P3 Touched by Gold Theme/Trail P3 Cast-Iron Conservatory







10.0 CONCLUSION

VONCEUSION C

It is acknowledged that the creation of the Bendigo Botanic Gardens, White Hills will take a considerable amount of time and money. The project can potentially be funded from a number of sources, not only through the City of Greater Bendigo, but also State and Federal Governments and philanthropic organizations and individuals.

The benefits to the local and regional community are many and include all the benefits of a contemporary botanic garden, but also the benefits of a well designed public open space that includes opportunities for all the community, no matter what their abilities or age. In addition, a well designed and maintained botanic gardens is a strong tourist attraction and so offers significant economic benefits.

The draft Master Plan was presented to give the community an opportunity to have input into shaping the final design. However, the community is encouraged to have ongoing involvement with the Bendigo Botanic Gardens well beyond the planning phase. After all, we are creating a lasting legacy for future generations.

Bendigo Botanic Gardens, White Hills Master Plan February 2010

