

Australian Association of Friends Conference 30.04.2016
Securing Geelong Botanic Gardens Future. Annette Zealley, Director, Geelong Botanic Garden

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CITY OF GREATER GEELONG

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Geelong Botanic Gardens

Vision

- Geelong Botanic Gardens is an innovative and leading regional Botanic Garden connected to its community.

Role

- The Geelong Botanic Gardens primary role is to hold plant collections for the purposes of conservation, education, research and display.

Its' secondary role is a public garden as a place for

- plants and people
- discovery and learning
- ideas and innovation
- community engagement and pride
- conservation and the environment
- and quiet contemplation

CITY OF GREATER GEELONG

We're here this weekend to talk about 'Relevance and Survival' I believe our vision and role sums this up well. Our focus on what I call the 'high moral ground' of Botanic Gardens is well balanced with our role in engaging the community.

Because if the community determines that a garden isn't relevant to their life then the political forum will decide whether we survive or not. The fact that you are all here as community members passionate about Botanic Gardens tells me that our chances are pretty good. It would be folly to rest on our laurels; we need to keep adapting and initiating change if we are to survive.

Today I'm going to talk about some of the key projects at the GBG which will secure a positive future for the gardens.

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In 1851 Geelong was in its infancy with a bustling Shipping port and a fast developing town. The influential people of the day had the foresight to set aside land for the development of the Botanic Garden. The land had what we would consider today as much coveted 'water views'.

The site was gazetted and the challenge of developing a garden began. GBG was gazetted 1851, making it 165 years old.

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This slide shows the considerable change to a treed landscape. Over time the development of the garden and changes in recreational use has seen the original site become defined as Geelong Botanic Gardens and Eastern Park.

In my mind though, the boundary of the garden remains as it was in 1851. So despite changed perceptions and different recreational uses we continue to develop a plant collection across the whole site.

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'City in a Park' is a vision for how we can **green** Geelong. A high priority is placed on green space and 'livability' – also known as walk or ride your bike like the good old days!

For the Botanic Gardens it means a greater appreciation of the value of green space close to the city centre. Potentially we will have a green link between Johnstone Park along Malop St into Eastern Park. There are various ideas of how this might happen- as long as there are more plants growing in our urban environment it makes sense to us.

The image shown is of a trial 'pop up park' in the city centre which has changed the face of the city. Needless to say it has presented many challenges for our gardeners. It has been positively received by the community and has illustrated how a greener city might work in the future.

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We've heard from Greg Moore this morning about Urban Trees- we're all for them here in Geelong! The Urban Forest Strategy has been adopted and outlines a series of actions which will green up the city over time.

One project which has commenced is 'The Greenway' and 42, 000 trees have been planted to date with community and school planting days. At the gardens we are developing a new primary school education program subject on Urban Forests. This program will enhance the hands on experience of tree planting with learning about trees at the Botanic Gardens. Students will learn what an urban tree is, why they are important and how to look after trees.

We hope that schools participating in the program will develop an ongoing partnership and develop their own urban forest in their schoolyards. That would be more than a measure of success!

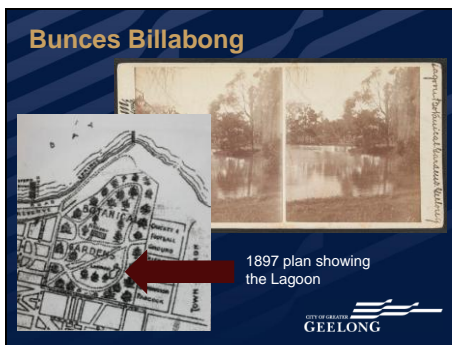
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The last piece of the contextual jigsaw is our Strategic Plan for Eastern Park and the Geelong Botanic Gardens.

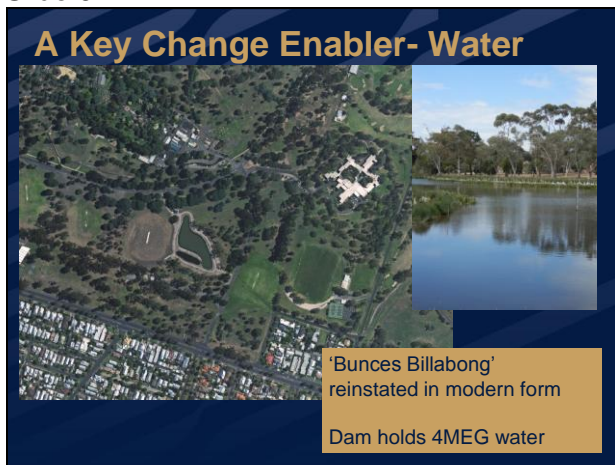
Signed off in 2008 it contains 32 key actions relating to the development and management of the landscape and facilities. It is a long term vision which we are actively delivering. A number of actions have been completed or are underway which help to secure the future of the gardens.

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This 1897 plan of the garden shows a lagoon, commonly called 'Bunces Billabong' thought to be an ephemeral wetland.

It was filled in during the late 1920's and turned into an oval- reflecting the changing focus on recreational facilities. Action 20 of the Master Plan was to create a wetland to reinterpret Bunces Billabong.



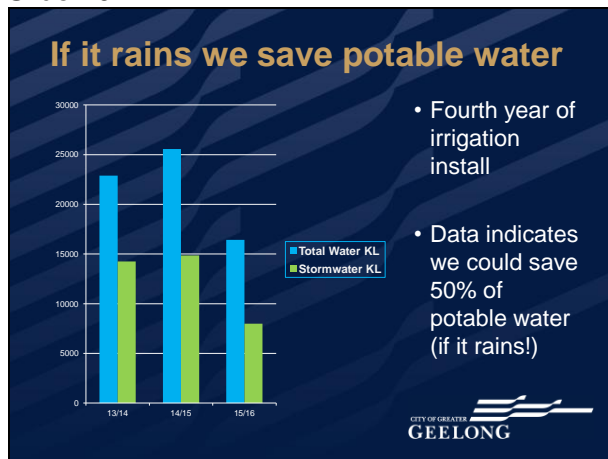
In 2011 the City of Greater Geelong was successful in being awarded joint funding from the Australian Government's *Water for the Future* program. The total budget from both organisations was \$930,000. This funding was used to develop a storm water storage dam in Eastern Park. The reused water will reduce the Geelong Botanic Gardens reliance on potable water for irrigation.

The dam collects storm water from the 47 hectare suburban area of East Geelong, to the south of the park. This water used to go out a pipeline which runs through the park and discharges into the bay. Now only if the dam reaches capacity will the water go out to the bay; so the park isn't flooded. A standpipe services tree watering in Eastern Park and urban Geelong.

The dam has been successful in:

- Reinterpreting the early landscape. The dam was sited to fit into the existing partial ring of Red Gums- resulting in a more mature looking landscape
- Planting design surrounding the dam used local plants and has increased the diversity of birdlife and frogs.
- Paths were designed for pedestrian access linking the southern boundary of Eastern Park to the tan track. This has activated visitor use of the Ryrie St Playground. A more recent link has been made with the installation of the bike path which runs along the historic Sugar Gum Avenue.

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The garden can use up to 28 Meg of water per annum depending on rainfall. We need to irrigate the international plant collection, although many areas, like the 21st Century Garden receive minimal irrigation.

The dam holds 4 Megalitres of water and we only draw down to 1 m. This maintains the bentonite liner and as a side benefit the birds and animals that now use the dam have some water. On this graph the figures to date indicate that we can potentially save half our potable water consumption.

The dam water is treated through sand and UV filters and is then pumped up to 250,000 litre storage tank. The second tank holds potable water which continues to be used in where either people have potential to come into direct contact with spray from water. These areas include the fernery, nursery and glasshouses.

Once we had water from the dam we needed to be able to use it more effectively so we committed capital funding over a four year period to install a new irrigation system. We began in 2013. The irrigation system is a major undertaking and the project continues. The computer controlled system has the ability to determine water requirements in conjunction with our weather station, soil sensors and programming for plant requirements.

The finalisation of this project, good rainfall, steady budgets and effective water management should see our ability to irrigate the heritage garden securely into the future.

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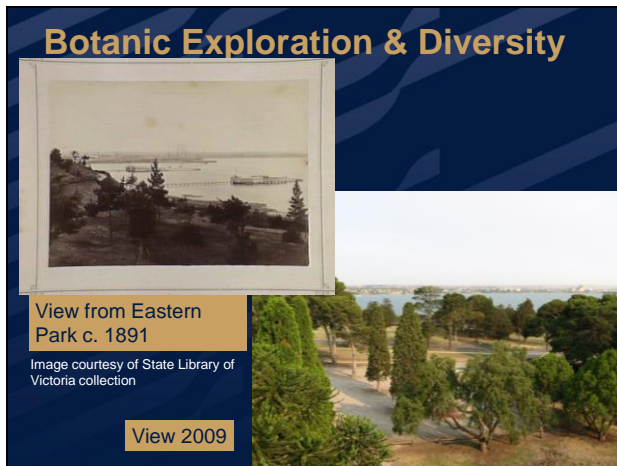
- We've spoken about Geelong's 'City in a Park' concept and Eastern Park is a significant park in a city
- It has a high level of recreational and event use. Increasing demands are placed on the park as the surrounding residential density and the diversity uses of open space increases
- **We remain focused on the original intent to create a place of beauty for the community while quietly conserving plants from around the world**



The value of the plantings in what is now known as Eastern Park is confirmed by the inclusion of Geelong Botanic Gardens and Eastern Park in the **Victorian Heritage Register**.

The predominance of conifers is highlighted in the statement of significance which notes the 'signature plants' of the parkland: *Pinus canariensis*, Canary Island Pine, *Pinus radiata* Monterey Pine, and *Cupressus macrocarpa* Monterey Cypress. Also noted is *Eucalyptus cladocalyx* Sugar Gum which are also used extensively as avenue plantings and tree circles. Not included in this listing, and in my opinion overlooked, is *Pinus halepensis* Aleppo Pine, which is represented in two tree circles and specimen plantings and is a long lived tree performing very well during drought years.

The image showing *Pinus halepensis*, tree circle by the western BBQ shelter. There are three Aleppo pine circles in the Park. There were also Sugar Gum circles, only one partially remaining in the north eastern section of the park.



The Geelong Botanic Garden was developed when exploration was a thrilling occupation. Geelong is a port so the early curators had a significant advantage- the opportunity to negotiate with ships captains and travelers to obtain new plants.

The parks exposed conditions provided a significant challenge and the establishment nursery, now the GBG, was given the most protected position- in a natural dip.

Initial plantings of Eucalypts and Acacias created a more protected planting site. This foresight gave the second Curator, John Raddenbury 1872- 1896 a site for the development of the Pinetum. His collection of conifers planted as avenues along the carriageways and as specimen plantings in the Pinetum are an impressive collection of dry climate species

Development of the plant collection is ongoing. Plant selection remains 'international' for historic reasons and is based on bioclimes- choosing species which come from areas with similar climatic conditions and soil types.

It is a challenge to manage existing species when deciding whether to replace them for the future. For example we are no longer replacing Elms- their ability to survive on available water, pests and diseases make them a poor choice now. We have implemented an avenue of *Pinus halepensis* to replace a number of elms along Holt Road.

We continue to experiment opportunistically- planting location in the park plays a part and we integrate plant selection with choices for the Botanic Garden 'proper' which offers a more protected site as it is in a 'dip' with a high level of maintenance and regular irrigation.



The northern edge of the park is on Corio Bay –salt laden winds buffet new plantings. South-westerly winds are also common. Many trees grow in the direction of prevailing winds.

Soil is very alkaline- lime kilns were established here in the early 1840s. Soils are classified as Rendiza- in practical terms alkaline, sea mineral deposits, cracking clay. The site has been disturbed on the northern side- it was used as a tip.

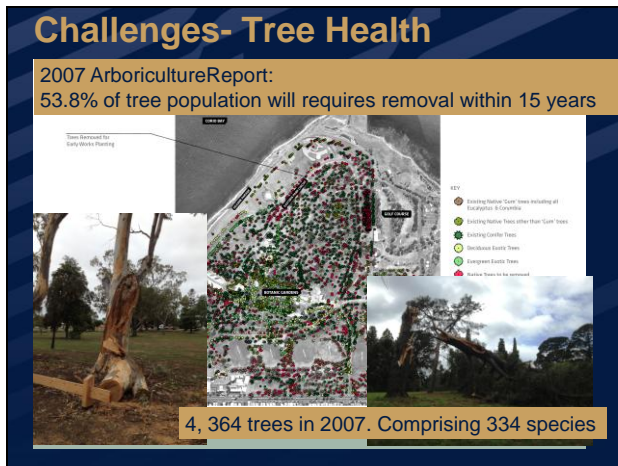
At the time we wrote the tree planting plan we were in year 8 of a drought. Locals would say it had been dry a lot longer than that!

This image is a planting of over 200 trees on northern part of Eastern Park Circuit

Eucalyptus leucoxylon 'Elite'

Pinus pinea, Stone Pine

It was the first major replanting of trees since the bicentennial planting in 1985. The image shows the difference in growth as the line of trees on the left is competing with existing plantings. The line on the right and closer to the road is doing better- probably due to getting a little extra water as we graded the road to drain towards them.



The 2007 Eastern Park & Geelong Botanic Gardens Strategic Planning process included an arboricultural report.

As context- at this time we were in drought which accelerated decline. During 2007 we had removed over 100 dead standing trees from the Parks ageing tree population. The Arboricultural Management Plan which identified significant issues with the condition of the trees in Eastern Park and made recommendations for ongoing management. A key finding of the report identified that 53.8% of the tree population would need to be removed from the park within the next 15 years.

This important fact galvanised the Council of the day to fund the development of a detailed Precinct Planting Plan which was finalised in 2010. Funding was transferred to enable replanting to commence in 2011 with the implementation of the northern avenue.

The plan continues to guide the replanting and rejuvenation of the treed landscape. The collection themes give guidance for species selection and the avenues are being maintained or reinstated.



Key factors for success are:

- Development of an inter- departmental team. Owner – Maintainer model working for a shared goal.
- A planting plan that zoned the park into planting themes. Flexible plant selection options to enable ongoing botanic experimentation.
- Implementing what the Tree Unit already knew about establishing trees in Geelong's tough environment- its all about after care! We established a good relationship with contractors to plant and water stock for a minimum of 2 years, longer if needed. They grew to understand the difference between a street tree and a botanic specimen- do not uplift!
- Fostering a relationship with Heritage Victoria to develop a shared understanding of the importance of the historic avenues in balance with the philosophies of developing a botanic collection for the arboretum.
- Sensible management of the Flying Fox roost- yes I confess that have been planting *Pinus radiata*! Also a collection of *Pinus sylvestris* (Scots Pine) forms.

Now and into the future:

We are continuing with planting and this year's focus is on the reinstatement of avenues. One avenue in particular only has 20% of its trees remaining.

We are activating a historic Sugar Gum avenue as the carriageway for a new shared pathway to connect commuter cyclists and park visitors to the city centre.

We are propagating important trees from the park for future plantings and distribution to other Botanic Gardens to increase the diversity of plant collections elsewhere.

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We need all generations to care about the garden. Public Programs are a vital part of engaging the community and inspiring an interest in plants and gardens.

We create a lot of opportunities through events & exhibitions, guided walks and professional development tours. And most importantly the delivery of an education program.

Booked School holiday programs are currently attracting around 600 kids each year. We also do self discovery trails during holidays which anecdotally increase the number of families visiting the gardens. During the past financial year we hosted 23 schools with a total of 1154 children

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The Curiosity Cabinet (also known as the sunken glasshouse) has been activated with seasonal displays. These displays are really about Ethnobotany – why are plants important to people?

Themed displays such as the popular 'Plants and Alcohol' teamed with an interpretive trail in the garden encourages people, by stealth, to learn more about plants. We have delivered a

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The Conservatory is being refurbished- as it has a site fence around it I thought I'd share some images of progress;

- Timber salvaged from Sugar Gums removed from Eastern Park last year is being used to make new seating for the for the gardens. 6 large trees which had been assessed as high risk were quite rotten inside but still yielded a small amount of usable timber.
- The seating will provide much needed gathering space for school and tour groups
- The gardens team is landscaping the garden surrounding the building.
- We look forward to sharing our tropical collection with our visitors. Internal themed displays will provide great opportunities for new education programs.
- You'll see the Coconut Monkeys here- I'm sure that you'll all recognise them! So if you have one I'd be really happy to have it for our kids program. We're doing a display on how coconut palms are used for all sorts of things.

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