



Max Bourke

## *The National Arboretum Canberra: an historic concept with an Australian twist*

The opening of the National Arboretum Canberra on 1 February 2013 represented a magnificent revival of an older concept in gardening, with its 250-hectare site fulfilling—in part—the Griffins' objective to have an international arboretum near this site in their original plan.

The concept of an arboretum is itself 180 years old. But its roots are tangled with those of botanic gardens, public parks, and forestry research stations. And to continue the tree metaphor, its trunk and branches relate to public amenity, personal vanity, and simple curiosity.

A form of mania to own and grow—and boast about—one's collections of 'exoticks' began roughly in the middle of the eighteenth century and accelerated into the nineteenth century. Initially this was often for the curiosity value of flowering plants, but as 'big' men with big estates became more involved in the race it included

big trees. The idea collided with the beginnings of concepts embodying city amenity, parks and tree-lined streets, quite novel ideas until the late eighteenth century. By the end of the nineteenth century arboreta as forms of research stations, were embraced by the newly developing professional scientific foresters.

The word 'arboretum', though derived from the Latin *arbor* for tree, is only relatively recent. According to the *Oxford English Dictionary* the first usage was in 1833, by John Claudius Loudon in his *Gardener's Magazine* meaning generally 'a place grown with trees', but more specifically 'a place devoted to the cultivation and exhibition of rare trees; a botanical tree garden'.

Early botanical gardens, as we know them today, emerged from the concept of 'physick' or medicinal plant gardens usually associated from the twelfth to fifteenth centuries with European universities or monasteries. In an attempt to make ordered collections of all known plants,

Cork oak plantation at the National Arboretum Canberra showing signs of having been harvested for a number of uses since the early 1920s.

Photo: Linda Muldoon



View across the National Arboretum Canberra.

Photo: Linda Muldoon

during the fifteenth and sixteenth centuries 'systematic gardens' were developed by those studying plants. The idea of public botanical gardens really only emerged in the late eighteenth century and especially during the early nineteenth century. Private gardens with specialised garden

compartments were popularised by British garden designer Humphry Repton, who in 1815 for example, designed gardens for Ashridge Park, Hertfordshire, including a 'pomarium' (apples) and 'rosarium' (roses). In 1838 Loudon published his eight-volume *Arboretum et Fruticetum Britannicum*, which included four volumes of plates depicting specimen trees.

The concept of a pleasure ground or a park for recreation by ordinary people became conceivable for the non-aristocratic classes, when they in fact had leisure time. The industrialist Joseph Strutt wished to create a public park for the people of Derby and in 1840 the Derby Arboretum, commissioned from Loudon, was opened to the public. This small site (14 acres or just under 6 ha) had a major impact on the concept of public parks not only in Britain but around the Western world. Frederick Law Olmsted for instance, the designer of New York's Central Park, visited it in 1859 before creating his grand works. In correspondence between Loudon and Strutt during the design, Loudon suggested that an arboretum (of trees only) would be easier to maintain and more beneficial than a garden with many bedding plants.

Arboretums (or arboreta) found ready acceptance in both private and public domains during the nineteenth century. Their widespread creation coincided with a great age of plant exploration when plant hunters roamed the remote regions of North America and Asia sending enormous cargoes of new plants (new to them at least) back to nurseries like Loddiges and Veitch in London, but also to major nurseries in Australia. It became highly fashionable for wealthy owners to collect trees and plant not only outdoors, with specialised collections such as



The Derby Arboretum, designed by J.C. Loudon and illustrated here in his *Gardener's Magazine* (October 1840).



pinetums, but also in sheltered environments for plant groups such as palms (palmetums).

But by the end of the nineteenth century, as forestry went from a trade to a scientific-based profession, the idea of arboreta moved into a new phase. Arboreta became research stations for public and private forestry enterprises. In 1925 this concept became codified when Dr Thomas Chipp, Deputy Director of the Royal Botanic Garden Kew and Secretary to the British Empire Forestry Conference, published a manual for this purpose. Chipp emphasised that arboreta were places where tree research should take place. Later the International Union of Forest Research Organisations attempted to develop a standard format for trials in arboreta.

Many Australian arboreta were created for these purposes. Among the oldest was that created in 1875 in the dry country of central South Australia, near Jamestown, to test suitable tree species. Australian species such as *Eucalyptus* were trialled at Bundaleer Forest alongside exotic ashes, oaks, sycamores, elms, walnuts, poplars, and willows. Most colonial and later state forestry departments and commissions created arboreta around Australia—some still exist though most have become amenity spaces rather than trial grounds. Around Australia many private and public arboreta thrive.

Walter Burley Griffin and Marion Mahony Griffin's winning design for Canberra included an arboretum, very close to that now opened, at the foot of Black Mountain. Walter Burley Griffin had attended a major science congress at which the concept of Gondwana was discussed and so the layout of his arboretum was to reflect that

idea. Meanwhile Charles Weston, who had been appointed Afforestation Officer, had begun to plant out an arboretum to assist him in species selection for the new plantings for Canberra. The two argued at some length about Australian versus introduced species. Weston's central arboretum is now Westbourne Woods (leased by Royal Canberra Golf Club) and one hundred years on still reflects the character of its early plantings. As well as Weston, his successors up to Lindsay Pryor's time in the 1940s and 1950s, created a number of specific 'species plots' and minor arboreta, in their search for useful trees for public and private spaces in and around Canberra. Some of those still survive like the Californian redwoods (*Sequoia sempervirens*) at Pialligo near Fairbairn Airport.

Another interesting example is the cork oak (*Quercus suber*) plantation which Griffin urged Weston to plant. Early seed sources were from the Melbourne Botanic Gardens and the University of Melbourne. Between 1917 and 1921 different consignments (one lost through torpedo attack during World War I) were planted at the northern end of what is now the National Arboretum. They have been harvested for a number of different uses since that time, a story well told elsewhere by Susan Parsons.

Beginning in the 1920s, the Commonwealth Government, through the Australian Forestry School and the Forestry and Timber Bureau, also created 23 arboreta. All of the Australian Capital Territory sites except Bendora were destroyed in the 2003 fires. After these horrific fires there was much discussion about the future use of the 250-hectare site between Black Mountain



and Mount Stromlo, a former pine plantation destroyed in the fires of 2001 and damaged again in 2003. Eventually the Chief Minister, picking up on suggestions from the Committee established to shape Canberra after the fires, adopted the idea of developing an arboretum on this site. An international competition led in 2005 to the winning entry '100 Forests 100 Gardens' by the Melbourne landscape architects Taylor Cullity Lethlean (TLC) in association with the Sydney architects Tonkin Zulaikha Greer. TCL is well known for its garden design work at the Royal Botanic Gardens Cranbourne among other major projects. The design features a large Visitor Centre with interactive displays designed by the creative team Thylacine of Queanbeyan, who have done many museum displays.

Following the selection of designers, experienced forestry advisers sorted through many species that might grow in this relatively dry (and drying) climate of 600+ mm annual rainfall, on these soil types (which vary from old volcanics and limestone ridges to granites), and with these differing aspects (hill slopes facing all points of the compass).

*The site is a spectacular lookout over the long axis of Griffin's design, above the Lake and looking down on Government House and the Westbourne Woods Arboretum*

The site itself is a spectacular lookout over the long axis of Griffin's design, above the Lake and looking down on Government House and the Westbourne Woods Arboretum. It is six minutes from the centre of Canberra and continues the green open space from Black Mountain south to Mount Stromlo.

The National Arboretum Canberra continues the core concepts of such institutions with public amenity and enjoyment, education and scientific research all part of the mix of uses. The design of the arboretum allows for around 100 tree species (the number will be slightly flexible) to be planted out. They have been selected on the basis that they will probably thrive on the site (but this is to be tested of course) and other selection criteria include conservation status (endangered in the wild), their iconic status (to various nations), and for simple beauty and colour at different times of the year. Of the 104 species so far selected, 66 are



Chinese evergreen magnolia (*Magnolia delavayi*), flowering here for the first time.

Opposite (clockwise from top left): Wollemi pine (*Wollemia nobilis*), giant sequoia (*Sequoiadendron giganteum*), Chinese tulip tree (*Liriodendron chinense*), monkey puzzle tree (*Araucaria araucana*), weeping snow gum (*Eucalyptus lacrimans*), and Californian fan palm (*Washingtonia filifera*).

Photos: Linda Muldoon

rare or threatened and on the Southern Tablelands Ecosystem Park site (a forest within the arboretum) is a representation of an endangered ecosystem.

The Fenner School of Environment & Society at Australian National University is conducting a major experiment on site while citizen science, led by professionals, is providing well-documented studies of tree growth, and bird and frog populations. Educational programs are being programmed into the Arboretum's daily running along with guided walks and the site is already performing a major amenity function for horse and bike riders, joggers, and walkers. A major project of this nature, for the centenary of Canberra, seems wholly appropriate in this garden city.

### Further reading

Max Bourke, 'Trees on trial: economic arboreta in Australia', *Garden History*, 35 (Suppl. 2), 2007, pp.217–26.

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Paul Elliott, Charles Watkins, & Stephen Daniels, "'Combining science with recreation and pleasure": cultural geographies of nineteenth-century arboreta', *Garden History*, 35 (Suppl. 2), 2007, pp.6–27.

Henry W. Lawrence, *City Trees: a historical geography from the Renaissance through the nineteenth century*. University of Virginia Press, Charlottesville, VA, 2006.

Susan Parsons, 'On the story of the cork oaks' [http://www.nationalarboretum.act.gov.au/resources/tree\\_stories/cork\\_oaks](http://www.nationalarboretum.act.gov.au/resources/tree_stories/cork_oaks), accessed 4 March 2013.

Max Bourke is a member of Friends of the National Arboretum Canberra.