
**Appendix 3 - Arboricultural
Assessment**

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Birds Tree Consultancy

Consulting Arborist AQF5 • Horticultural Consultancy • Project Management • Resistograph Testing



Moore Park Master Plan 2040

ARBORICULTURAL ASSESSMENT REPORT

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Prepared for
HASSELL

Prepared by

Birds Tree Consultancy
Glenn Bird Dip. Hort (Arboriculture) (AQF5)
PO Box 3244 ROUSE HILL NSW 2155
PH 0438 892 634
glenn@birdstrees.com.au
www.birdstrees.com.au
ABN 31 105 006 657



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1.0 Introduction/ Scope of Works

This report has been commissioned by HASSELL to provide arboricultural advice regarding the existing conditions of the Moore Park trees. This report is supplementary to the Moore Park 2040 Future Directions Report, Volume 1, prepared by HASSELL.

Trees are the critical asset and defining features of Moore Park. The Tree planting forms the structure of the Park defining Avenues and framing sporting fields and pathways. These plantings have Heritage significance with specimens surviving from original 1867 plantings. The tree plantings outline the history of the Parks development and provide a gallery of landscape styles over the life of the Park. The development of the Park has meant that tree plantings have been incremental with the character of the Parks tree groves developing as the Park grew. In 2002 this development character was focused within the 2002 Tree Master Plan for Centennial Parklands. This document detailed the condition of the existing trees and outlined the Tree Management Principles for the future. This 2002 Tree Master Plan promoted minimal changes to the tree population and emphasised tree replacement. This report addresses the ongoing performance of this 2002 Tree Master Plan and identifies opportunities to incorporate the directions of this 2002 Tree Master Plan into the Moore Park Master Plan 2040.

Due to the large number of trees within the Moore Park Master Plan area, individual trees have not been assessed and this report identifies tree species summaries, landscape and functional character of tree plantings (avenue plantings and pathway plantings).

2.0 Existing Tree Planting Character

2.1 Federation Way/ Lang Road

The tree planting along the northern side of Lang Road consists primarily of a mono specific stand of *Ficus microcarpa* var. 'Hillii' (Hills Fig). These trees are in good condition with minimal deadwood. These trees arch over Lang Road and form avenue planting with the trees of Federation Way.

Federation Way Tree plantings consist of avenue planting with species including *Ficus rubiginosa* (Port Jackson Fig), *Quercus ilex* (Holly Oak), *Araucaria heterophylla* (Norfolk Island Pine). These trees form a dense canopy over an enclosed avenue. This avenue was planted between 1887-1896.



Figure 1 - Federation Way

2.2 ANZAC Parade

The eastern side of Anzac Parade consists of an Avenue of *Ficus macrophylla* (Moreton Bay Fig) and *Ficus rubiginosa* (Port Jackson Fig). This avenue is continuous and in good condition. These trees were planted between 1870 and 1896 and are large mature trees. A number of trees along the original Fig Avenue and secondary plantings are threatened by removal as required to construct the Light Rail. Refer to attached Tree Revegetation Strategy

There is a secondary line of planting forming an avenue along the existing bus lane. These trees are significantly younger and consist of species *Podocarpus falcatus* and *Lophostemon confertus*.

2.3 Eastern Distributor/South Dowling Street

This avenue was originally planted at the same time as the Anzac Parade plantings in 1870-1896 however has had significant disturbance due to construction of infrastructure including the Eastern Distributor. As a consequence this planting has lost its avenue nature and now has a disrupted character.

The northern and southern ends of this section have remaining *Ficus macrophylla* and *Ficus rubiginosa* in good health and condition. The central section has a combination of native planting including *Corymbia maculata*, *Banksia* spp.

2.4 Dacey Avenue

Dacey Avenue tree planting forms a mature avenue with enclosed canopies. The majority of these trees consists of *Ficus macrophylla* with *Quercus robur* at the eastern end of the avenue. These trees are in good condition and have been planted since 1945.

2.5 Cleveland Street

Cleveland Street tree planting forms a mature avenue with enclosed canopies with the exception of a break in the canopy adjacent to Sydney Girls High. The majority of these tree species consist of *Ficus macrophylla*. These trees are in good condition and were planted in approximately 1879.

2.6 Entertainment Precinct

The Entertainment Precinct has diverse plantings with relatively young Avenue planting of *Corymbia maculata* and large mature *Ficus macrocarpa* var. 'Hillii' and *Ficus Rubiginosa*.

2.7 Moore Park East Precinct

The north western corner of The Moore Park East Precinct has a woodland grove planting consisting of *Araucaria cunninghamii*, *Angophora costata*, *Corymbia maculata*, *Melaleuca quinquenervia*, *Eucalyptus punctata*, *Casuarina*, *Callistemon* spp, *Banksia integrifolia* and *Eucalyptus robusta*. This relatively young planting is in good health and condition.

The northern section of the precinct has planting of large mature *Ficus macrophylla* and *Ficus rubiginosa*.

The western perimeter of the Moore Park East Precinct is bound by the plantings of *Podocarpus falcatus*, *Angophora costata* that make up the avenue along the Anzac Parade Bus Lane. Transverse pedestrian pathways including the Albert Tibby Cotter Bridge are defined by recent plantings of *Agathis robusta* (Qld Kauri Pine) with *Phoenix canariensis* palms at the western ends. Generally pedestrian entry points are defined by *Phoenix canariensis*.

Kippax Lake is bound by a ring of large Figs that were planted between 1870 and 1896. This ring consists predominantly of *Ficus rubiginosa* on the western side of the lake with *Ficus macrophylla* on the eastern side. The edge of the lake are dotted with *Schinus areira*.

The western Driver Avenue perimeter consists of an established avenue of *Ficus macrocarpa* var. 'Hillii'. The majority of these Figs have been recently planted with a small number of large established trees from the original planting during the 1920's. As a result this avenue planting is not strongly defined.

Centrally located within this precinct are recently planted geometric groves of *Araucaria cunninghamii* and *Lophostemon confertus*. At the southern perimeter of the Moore Park East Precinct, an arc of *Lophostemon confertus* peels away from the *Ficus macrocarpa* var. 'Hillii' avenue planting of Lang Road.



Figure 2 - Kippax Lake

2.8 Moore Park West Precinct

The Moore Park West Precinct consists of sparse open grasslands bound by avenue planting of *Ficus Macrophylla* and *Ficus rubiginosa* on Anzac Parade and South Dowling Street.

2.9 Moore Park Golf Course Precinct

The Moore Park Golf Course Precinct has a more diverse planting character than the other parts of Moore Park. The northern perimeter includes plantings of *Ficus rubiginosa* and *Ficus macrophylla*. The golf course section contains pockets of native planting including *Corymbia maculata*, *Banksia integrifolia*, *Casuarina* spp, *Angophora costata*.

2.10 Robertson Road Precinct

Bound by the avenue plantings on Federation Way and Anzac Parade, this precinct is sparsely planted with two large *Ficus rubiginosa* within the recently constructed carPark west of the netball courts and one large *Ficus macrophylla* adjacent to the existing pavilion building adjacent to the tennis courts.

3.0 Future Strategies / Design opportunities

Since the creation of Moore Park in 1867, the tree planting has evolved in incremental stages with the ongoing development of the Park and the adjoining land uses. With this development, Moore Park has evolved with individual characteristics that establish the significant heritage and cultural value of the tree planting. These characteristics are to be preserved and the 2002 Tree Master Plan for Centennial Parklands requirements adapted to meet the future strategies for Moore Park.

3.1 Tree Lined Boulevards

One of the central concepts of the Moore Park Master Plan 2040 is “Uniting the Park Through Tree Lined Urban Boulevards”. This concept seeks to maintain the existing avenues and strengthen tree lined boulevards to unite the different precincts of the Park.

The most distinguishable characteristic of the Parkland is strong avenue and boulevard plantings, particularly along Anzac Parade, Federation Way, Cleveland Street and Dacey Avenue. The preparation of the Moore Park Master Plan 2040 provides the opportunity to strengthen the existing avenue plantings and expand the concept through the Park.

Currently the existing Avenue Plantings are in good condition and are well established. Areas where opportunities exist to strengthen the existing avenue plantings include:

- Connection of north and south Fig Avenues along South Dowling Street. The central native plantings may be maintained with supplementary planting of *Ficus rubiginosa*.
- Connection of Fig Avenues along the north of Cleveland St, adjacent to Sydney Girls High School.
- Addition of a secondary row of succession planting to the south of Cleveland St.
- Increase planting of Fig Avenue along Anzac Parade, adjacent Golf Course, where the planting decreases in density.
- Replacement of *Quercus robur* at eastern end of Dacey Avenue. These trees may be replaced with natural attrition to create a mono specific Fig Avenue of *Ficus macrocarpa* var. ‘Hillii’.

Opportunities within the Moore Park Master Plan 2040 may exist to create new tree lined avenues and boulevards, particularly for pedestrian accessways.

- Tree lined accessways would strengthen the existing but fragmented planting themes. Vehicular and Primary pedestrian accessways are predominantly north south and are lined with *Ficus macrophylla* and *Ficus rubiginosa*. Axillary accessways and arterial pathways running from these primary accessways are generally east west and defined by monospecific boulevard plantings with existing planted species including *Agathis robusta*, *Araucaria heterophylla*, *Araucaria cunninghamii*, *Lophostemon confertus* and *Phoenix canariensis*. Strengthening this schematic planting may be used to improve wayfinding and further integrate elements of the Parklands which are currently differentiated.
- The original plantings along Anzac Parade in honour of the ANZAC servicemen were plantings of *Populus spp.* A small stand of these trees remain. Subsequently the avenue planting of *Ficus macrophylla* and *Ficus rubiginosa* have been established. These trees have also been established within the public consciousness as a link to the ANZAC servicemen as evident in the recent publicity regarding the removal of a number of these Figs in order to accommodate the Light Rail project. The Moore Park Master Plan 2040 provides the opportunity to strengthen and reinforce meaningful links to the ANZACs. This may be provided by strong accents of tree plantings in the vicinity of Anzac Parade. Intersection nodes where transverse accessways meet the main arterial route of the Fig lined Anzac Parade may be defined by plantings of species endemic to New Zealand in order to honour the New Zealand partnership within the ANZAC. Node planting of *Meterosideros exelsa* which is a hardy coastal tree with an attractive arched domed habit with striking red flowers consisting of a mass of crimson stamens flushing the trees over summer.



Figure 3 - *Meterosideros exelsa* Source: Wikipedia

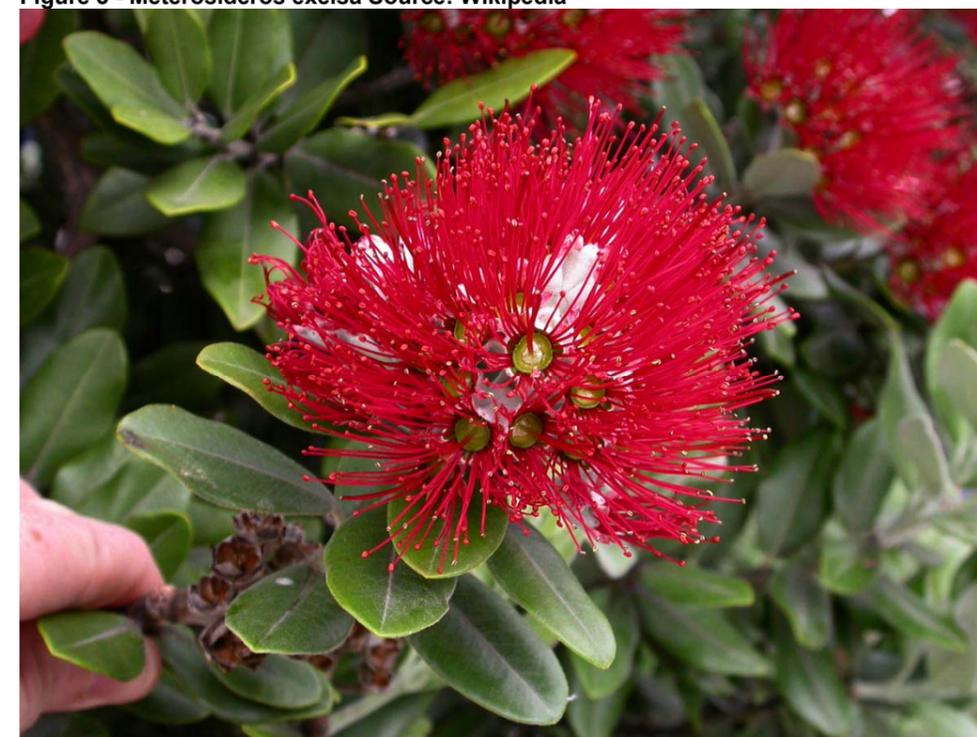


Figure 4 - *Meterosideros exelsa* flower

- The precincts of Moore Park have significantly contrasting characteristics which are reinforced by the existing tree plantings. This contrast is in part due to the progressive nature of the development of the Park. The most striking example of this contrast is the Entertainment Quarter Complex which has a strikingly different planting character. Big Idea 1 of the Moore Park Master Plan 2040 is the provision of Tree Lined Boulevards. These lined accessways will by nature provide linking tendrils of mono specific tree

plantings. These avenues will link the currently disparate sections of the Moore Park precincts and enable continuity of plantings throughout the Park.

3.2 Park Entry Statements / Wayfinding

The sprawling nature of the Park and the many and varied land uses has meant that the Park has developed without clear and defined entry points for vehicular or pedestrian traffic. The Moore Park Master Plan 2040 will unite the Park and in doing so allow the definition of defined and distinct Park entry points. This definition will be strengthened and reinforced with signature tree plantings at entry nodes and key locations. Entry node tree planting species will be consistent throughout the Park. Species selection will require a suitable species with distinctive form and habit and may include *Araucaria cunninghamii* which is currently used at the north eastern corner of Moore Park East or *Phoenix canariensis* which is currently defining the entry of the main pedestrian walkway to the Albert Tibby Cotter Bridge.

3.3 Species Diversity

Moore Park precincts have a relatively narrow range of species planted. The reasons for this relative lack of diversity include:

- Adverse physical and biological conditions such as poor soil, harsh climate and high water table,
- Concentration of species for avenue planting along major traffic arteries.

Species diversity is critical in order to protect the Park from the impact of potential pest or disease attacks that may act on one species. This has previously impacted within Centennial Park with the iconic avenue of *Phoenix canariensis* significantly impacted by *Fusarium wilt (Fusarium oxysporum)*.

The preparation of The Moore Park Master Plan 2040 provides an opportunity to increase this species diversity by means of planting of new tree plantings and species. With the development of new planting areas including new soil and ground preparation, it will be possible to include new species to the Moore Park species mix.

Opportunities for increasing species diversity include new plantings within the Golf Course Precinct, Moore Park East Precinct and Moore Park West Precinct. Hardy and suitable species may include:

- *Allocasuarina distyla*
- *Meterosideros exelsa*,
- *Acmena smithii*,
- *Eucalyptus tereticornis*

3.4 Repopulation of Locally Indigenous Species

The nature, design and topography of Moore Park has been significantly altered since the creation of the Park in 1867 and as a result many of the natural conditions of the Park have been altered. The Park has been constructed in place of swampy marshes and sandy heaths. As a result there is limited opportunity to repopulate the area with locally indigenous species. Indigenous species that currently populate the Park include *Melaleuca quinquenervia*, *Angophora costata* and *Banksia integrifolia*.

Species that have been underutilised and may be re-introduced include:

- *Acmena smithii*,
- *Allocasuarina distyla*,
- *Banksia ericifolia*,
- *Leptospermum laevigatum*,
- *Melaleuca nodosa*
- *Eucalyptus tereticornis*

Suitable locations for this indigenous native planting would include Moore Park Golf Course Precinct, Robertson Road Precinct, Moore Park West Precinct.

3.5 Succession Planning

Moore Park was established in 1867 with tree planting in stages as the Park developed. The general summary of the staged planting is as follows:

1867-1868	-	Anzac Parade avenue planting to Cleveland Street and Lang Road
	-	Northern section of South Dowling Street Fig planting
1879	-	Cleveland Street Fig Avenue
1870-1896	-	Kippax Lake planting
	-	Southern section of Anzac Parade avenue planting
	-	Northern section of Moore Park East Precinct
1887-1896	-	Federation Way avenue planting
1920's	-	Driver Avenue Fig avenue planting
Post 1945	-	Dacey Avenue planting

The staging of this planting means that these trees may reach the end of their safe useful life during the lifespan of the Moore Park Master Plan 2040. Within the Park these trees may be removed by natural attrition and replaced once these trees decline to a critical stage. This is not practical for the tree plantings that form avenues or boulevards as the characteristic form of these avenues will be lost. In order to retain the avenue, boulevard planting will be required to be removed and replaced in blocks to ensure the uniform growth habit of the replacement trees to retain the avenue form.

The Tree Master Plan for the Centennial Parklands 2002 identifies that the expected safe useful life expectancy of the Fig Trees that comprise the majority of existing avenues to be approximately 150-200 years. This indicates that the Figs along Anzac Avenue are likely to be required to be replaced within the next 30-40 years.

3.6 Light Rail Impact

The current planning and construction of the Light Rail system adjacent to Moore Park is expected to impact upon the existing Fig avenue planting on the eastern side of Anzac Parade and these trees have been identified as being required to be removed due to the Light Rail construction. Replacing these trees with the same species is preferable however planning and ongoing tree management may be required in order to ensure that the mature tree canopies do not interfere with light rail infrastructure.

Transport for NSW have published a Tree Revegetation Strategy which outlines the following proposed tree replacement commitment:

- 8 trees for every large tree removed
- 4 trees for every medium tree
- 2 trees for every small tree.

Tree replacement strategy requires integration between the parameters of the Moore Park Master Plan with monospecific avenue and boulevard planting of major and transverse pedestrian, vehicular and public transport accessways, and the practical requirements of the interface between the Sydney Light Rail and tree plantings. Consideration is required of the ongoing, short and long term maintenance requirements of the trees adjacent to the Sydney Light Rail. The requirement of these trees is to continue the existing avenue nature of the planting and also to provide screening between the light rail and the Park as well as residences within Robertson and Martin Road.

The existing planting of which a number of which are required to be removed due to the Sydney Light Rail construction, consist of predominantly *Ficus macrophylla* (*Moreton Bay Figs*) and *Ficus rubiginosa* (*Port Jackson Fig*). These Fig species have a significant spreading form with a horizontal branching habit. As a result these species would be required to be planted

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approximately 20m from the light rail in order to prevent the mature tree from overhanging the light rail. Tree species with conical, columnar, upright and pyramidal form such as *Araucaria spp.*, *Agathis robusta* would be suitable for planting in closer proximity to the light rail however trees with these forms would not typically provide sufficient screening for the Park and residences. Trees with round, oval or open forms would be most suitable and provide increased screening. Suitable species would include *Lophostemon confertus*, *Podocarpus falcatus*.

3.7 Community Awareness and Consultation

As the Moore Park Master Plan 2040 is implemented, a strong and integrated program of community information and consultation will be required in order to inform the community of tree management plans and requirements. In particular, proposed block replacement of figs as part of succession planning would require an extended period of Community Discussion.

9.0 References

- Benson, D. Howell, J. 1991, Taken for Granted – The Bushland of Sydney and its Suburbs.
Tree Master Plan for the Centennial Parklands – Context Landscape Design 2002.