



Emergency Nomination of Lake Burley Griffin and Lakeshore Landscape to the National Heritage List

**Prepared by Lake Burley Griffin Guardians
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1 Background

Lake Burley Griffin and Lakeshore Landscape is within the Australian Capital Territory (ACT) and forms the physical and symbolic core of central Canberra, Australia's national capital and seat of government. The place is a designed cultural landscape; an integrated lake waters and landscape system with designed vistas within the central area of the National Capital of Australia.

The lake's water is impounded by Scrivener Dam and its water source is primarily the Molonglo River and Jerrabomberra Creek. The lake waters interface with the suburbs of Fyshwick, Kingston, Barton, Parkes, Acton and Yarralumla.

There is no formal, nor all-encompassing, heritage protection for Lake Burley Griffin and Lakeshore Landscape because of the complex heritage legislation, dual planning systems and fragmented management regime for central Canberra, demonstrated by the multiple different heritage listings noted under Associated heritage records, Section 9. The lack of all-encompassing heritage protection has led to the proposed encroachment of major apartment proposal onto lakeshore landscape involving the infilling of 2ha of lake waters.

Lake Burley Griffin and Lakeshore Landscape Emergency Nomination to the National Heritage List commences with a description of Likely and Imminent Threats. A Statement of Significance (SOS), Section 3 is followed by a table of likely and imminent threats to the SOS values at Section 4. An Assessment of Heritage values derived from evidence noted in the Description and History Sections 6 and 7, is at Appendix A.

A separate Emergency Nomination of Lake Burley Griffin and Lakeshore Landscape to the Commonwealth Heritage List based on the report *Lake Burley Griffin and Adjacent Lands* by Godden Mackay Logan 2009 has been prepared.

There have been a number of unfortunate developments on the lakeshores of Lake Burley Griffin that have been concerning local citizens and instigated the formation of Lake Burley Griffin Guardians a group with 79 members concerned about the lack of heritage protection for the lake.

There have several lakeshore developments over recent years that were adverse impacts of varying degrees on lakeshore. However it is the proposal set out in the report *City to the Lake* (CttL), *Strategic Urban Design Framework 2015* has been causing great stress to the public. This is a major development set up to bridge in Parkes Way for easy access to the lake. It involves a sequence of developments over several years. The dates for Stages 1 and 2 were provided on a plan released by the former Land Development Agency early 2017. Information provided in a letter to the Guardians dated 13 December 2017 from Mr Malcolm Snow, Chief Executive of the City Renewal Authority, noted the Authority's intention to progress with the stages.

Stage 1 is the 150 metres of the West Basin boardwalk, including the new lake wall and a sculptural marker of the 1918 Griffin Plan, parklands (now called Henry Rolland Park) adjoins the boardwalk. Stage 1 is scheduled to be completed by January 2018.

Stage 2 is the associated lake reclamation works, the construction of the lake wall, construction of the waterfront promenade, including concession pavilions and vehicular access road. Stage 2 is scheduled to run from February 2018-December 2019.

Additional works that are proposed to progress from Stages 1 and 2 include:

- the upgrade of the Corkhill and Albert Streets intersections with Commonwealth Avenue to facilitate access into the West Basin precinct and the removal of Barrine Drive through Point Park, not dated
- the release of land in the Acton Park area of West Basin for the building estate development is scheduled to commence in 2020.
- the realignment of Parkes Way and the bridging of Parkes Way —not dated.

The 2ha of lake infill is to the northern side of West Basin that will extend approximately 80m into the existing lake waters and the appropriation of a well loved lakeshore parkland with beaches for a building estate is currently of serious concern to the public. Works on Acton Peninsula proposed in the *City to the Lake (CttL) Strategic Urban Design Framework 2015* have been superseded by proposals in the National Capital Authority's 2017 *Acton Peninsula Precinct Draft Structure Plan*.

The Guardians note that the area proposed for the building estate is an area of high public prominence and threatens a number of the outstanding national heritage values of the Lake and its foreshore. The development area abuts the northern end of Commonwealth Avenue and will permanently block key views of, and across the Lake, from the Avenue, which is the iconic route to Parliament House. It is a strategically significant area for all Australians.

2 Significant Adverse Threats that are Likely and Imminent

- 2.1 The ACT Government's *City to the Lake* project includes infilling 2 ha of Lake Burley Griffin extending 80m into the lake waters is **imminent** as that work is to commence on the lake infill early in 2018.
- 2.2 The development of the building estate for apartments and commercial uses is **likely**. It will become **imminent** once the Stage 2 works are completed,
- 2.3 Acton Peninsula Precinct Draft Structure Plan that proposes approximately a further 6 buildings on the western side of West Basin along with additional lake infill (approximately 10m) into the lake waters. This threat is **likely** in the future.
- 2.4 The ACT Government's gazettal of Grevillea Park into 4 boat club sites that when all are conveyed to boat clubs, the people's parkland and recreational beach area will be obliterated. This threat is **likely** at a future time.

3 Statement of Significance

The statement of significance has been prepared as a synthesis of the assessment of heritage values against National Heritage Criteria at Appendix A.

1 Criterion A — Historic, Natural

The place has outstanding heritage value to the nation because of the place's importance in the course, or pattern of Australia's natural or cultural history

- 1.1 Lake Burley Griffin and its lake shore landscape is of outstanding significance to the nation as an iconic designed landscape of lake waters and lakeshore landscape featuring three central basin based on the composition set by Walter Burley Griffin and following technical hydrological, geological and engineering research modified in the 1960s by the Menzies' National Capital Development Commission (NCDC) with a naturalistic shoreline, reshaping

to the south side of the Central Basin and exclusion of the large East Lake water feature.

- 1.2 A major feature of outstanding significance is how the lake respects the initial design in lying astride the intersection of the main 'land axis' of the city that extends from Mount Bimberi to Mount Ainslie and the 'water axis' that extends from Black Mountain across the three central water basins approximately aligned with the water course. The combination of the spatial lake waters the hills and ranges beyond, the importance of Black Mountain as vista terminus was set by Griffin and brought to life by the NCDC with the water planes, the setting landscape, and the vistas from many view.
- 1.3 The pattern of history conceived by Griffin was to have a perimeter of parkland that in the Central Basin had scattered cultural buildings on the northern side of the Central Basin instead cultural buildings were developed on the southern side of the basin and on Acton Peninsula. The NCDC executed lake works retaining the lakeshore parklands without buildings to the lakeshores of the basins, Prospect Parkland that ran from a casino at the base of Mt Ainslie, became Anzac Parade extending from the Australian War Memorial and the linear parkland of Telopea Park was retained.
- 1.4 In the course of history the Lake is outstanding to the nation as the centrepiece of the central national area of Canberra, creating an important part of the immediate foreground of the Parliamentary area and the city's main recreation zone. Its parklands are major features that have been sequentially upgraded as formal and informal parklands extending almost entirely around the Lake with the exception at Kingston Foreshore, and Yarralumla Bay.
- 1.5 As the large naturalistic East Lake was deleted, the naturalistic edging to the East and West Basin was a sound design approach. The lake design as completed provides the spatial setting for Australia's national capital there is no other comparable designed lake landscape system with a perimeter parkland landscape in Australia.
- 1.6 Significant features are the Lake landscape particularly Kings Park, Commonwealth Park, and Patrick White Terrace that have become venues for national memorialisation, While the lakeshore landscape is constantly used for national and local events and citizen recreation. The Carillon and Captain Cook Jet are major memorial features in the Lake.
- 1.7 In terms of the course and pattern of the natural environment although the Lake system is originally artificial it has evolved to provide a richness of birdlife and associated breeding, feeding and nursery habitat that now occur on the naturalistic areas of the Lake. Waterfowl that use the Lake's wetlands such as Latham's Snipe (*Gallinago harwickii*), the common Greenshank (*Tringa nebularia*), the Red-necked Stint (*Calidris ruficollis*) and the Sharp-tailed Sandpiper (*Calidris acuminata*) that are protected under the Japan Australia Migratory Bird Agreement and the China Australia Migratory Bird Agreement.
- 1.8 Lake Burley Griffin is important for holding the memory of the Ngambri people who at the time of colonial settlement were living in the area and harvesting fish from the Molonglo River. The Ngambri name for their region Kamberri, later altered to Canberra is from the original people. Lake Burley Griffin is important for holding the memory for 100 years of colonial settlement. Settlers took over the Molonglo River flats in the early 19th Century when Joshua Moore established a station on Acton Peninsula in 1823.

2 Criterion B— Rarity

The place has outstanding heritage to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.

- 2.1 Lake Burley Griffin and Lakeshore Landscape, is outstanding to the nation for its rarity as a designed urban lake system that brings together the outstanding works of planning, engineering design and works and landscape development to create the magnificent urban lake that is the centrepiece of Australia's national capital.

3 Criterion D— Representative

The place has outstanding heritage to the nation in demonstrating the principal characteristics of:

- 1) a class of Australia's natural or cultural places; or**
- 2) a class of Australia's natural or cultural *environments*.**

- 3.1 Lake Burley Griffin and Lakeshore Landscape, is outstanding to the nation as a class of designed landscapes from the early 20th Century with an integrated later 20th Century design execution, embodying a system of water features of formal basins, inlets and islands in a physical significant expression of nature and design.
- 3.2 As a mid-20th Century designed landscape, the lake system embodies contemporary ideas on the importance of organic landscape as urban design with social and environmental elements established in America towards the end of the 19th Century with a rich variety of public landscapes including arboreta, parks, gardens, naturalistic landscapes, wetlands and landscape features creating a whole coherent effect to give people greater enjoyment of scenery. The executed works with the green landscape perimeter to the Lake reflect Griffin's vision, enhanced by the NCDC to retain some character of the natural landscape.
- 3.3 The Lake landscape is important for its rich variety of public landscapes reflecting Griffin's emphasis on continuous parklands around the Lake as shown in all his plans and his desire for natural plant colours and tree forms for design effect. The executed NCDC design of the surrounding parklands contains a series of landscape expressions incorporating the grey green of the natural vegetation while retaining a sense of landscape unity.
- 3.4 The Lake landscape demonstrates the transcendence of a flood plan into magnificent ornamental waters; with the gentle slopes of the foreshores transformed into parklands, natural gathering places for the enjoyment of spectacles on the water, enjoyment of the national imagery and high quality scenic vistas in the heart of a city that capture a major segment of the impressive land axis view.
- 3.5 Compared with other countries there are few natural urban lakes in Australia with the success of the design of Lake Burley Griffin with its length and a width scale enabling the important feature of visual appreciation across the Lake.

4 Criterion E— Aesthetic

The place has outstanding heritage to the nation in exhibiting particular aesthetic characteristics valued by a community or cultural group.

- 4.1 Lake Burley Griffin and Lakeshore Parklands is outstanding to the nation for its beauty and other aesthetic properties that are highly valued for the range of aesthetic experiences enjoyed by the Australian community. Aesthetic qualities, spaces and horizontality were key elements of Griffin's plan reflected in Marion Mahoney Griffin's renderings that demonstrate the unbroken horizontal plane of the lake waters and the vegetation line at the lake edge.
- 4.2 Lake Burley Griffin and Lakeshore Parklands is outstanding for providing a central green city oasis that captures the many naturalistic vistas of landscape, water and distant mountain ranges. The Lake and its parklands provide a reflective setting for the national monumental architecture along the southern side of the Central Basin. The lake waters and dark rim of water edge plantings along much of the landscape perimeter add a reflective dimension to the scenic property of the lake waters. At times misty weather provides an ethereal aesthetic dimension to the Central City beauty.
- 4.3 An outstanding feature of the aesthetic value of the lake landscape are the range of

aesthetic experiences from around the basins and lake shores such as: formal hard landscapes of the southern Central Basin, decorative garden and cultural garden features, natural landscape areas and wetlands and the serial views and vistas loved by the community (Pipitone 2009). The enjoyment and appreciation of the spectacle on the water, the national imagery of the parliamentary triangle and scenic vistas provide rare relief in the heart of a city, valued by visitors and the public. Bird life on the lake waters adds interest and ephemeral qualities, such as the iconic and graceful black swan (*Cygnatus atratus*), also recognised in the ACT's coat-of-arms.

- 4.4 The scale of the lake basins remains perfectly in harmony with the surrounding natural environment. The comparatively narrow width allows for landscape appreciation on opposite lakeshores with the water foreground.
- 4.5 Valued vistas admired by citizens and visitors and are experienced from the National Arboretum, Black Mountain and Mount Ainslie and from all the lakeshore walks. The open Rond Terraces designed as a low open auditorium by Griffin, provide a visual sweep to the Land Axis Vista as it leads the eye from the lake plane the Lake to Mount Ainslie, and provide an open area for experiencing the vista to Parliament House. The valued vistas when travelling along Commonwealth Avenue, the symbolic route to Parliament House, when leaving City Hill extend across West Basin and the lake waters to the Bullen and Brindabella mountain ranges beyond, at times snow capped.
- 4.6 The high regard for aesthetic and other lake and landscape values held by the community was demonstrated at a public meeting in 2016 and in a Petition to the ACT Government in late 2017.

5 Criterion F — Creative/ Technical

The place has outstanding national heritage significance in demonstrating a high degree of creative or technical achievement at a particular period.

- 5.1 An outstanding creative achievement is how the original international prize winning plan by Walter Burley Griffin for Canberra with its central Lake system that won the international design award for the City of Canberra was brought to life by the NCDC with a naturalistic lake edge and other modifications providing aesthetic beauty, climate amelioration and a recreation resource.
- 5.2 An outstanding feature of the lake system is significant achievement by the NCDC that respected the Griffin visionary plan and developed the system to link and unify the land and water axes and vistas to tree covered hills and distant mountains while retaining Griffin's lake Griffin's composition of 3 basins and the land and water axes.
- 5.3 The Lake and the lakeshore landscape, the critical component of Griffin's central vista expanse are Australia's outstanding landscape design achievement that has been respected and safeguarded during Canberra's one hundred years of planning and development. Griffin's creativity is demonstrated in the way the constructed lake waters embody the water axis that intersects at right angles with the land axis in the Central Basin. On the western slopes of West Basin, the Water Axis vista can be appreciated extending through the 3 basins and beneath Commonwealth and Kings Avenues to the Jerrabomberra Wetlands.
- 5.4 The success of constructed lake system is underpinned by the research undertaken by the NCDC and the several technical achievements that collectively are of outstanding national significance; the hydrological water flow research that led to modifications in the shape of Lake Burley Griffin particularly the open shapes of East and West Basins and the bevelled corners to the south side of the Central Basin, the structural engineering of the dam, the bridges, the retaining walls and the dam were all contemporary technical achievements.

- 5.5 The technical and creative achievement of the landscaping is outstanding as a very large Australian landscape design project undertaken by the NCDC with works that included the shaping of the Lake and its islands, creation of terraces, retention and reinforcement of native plantings, water edge plantings, and mass plantings for seasonal and contrasting colour, form and spaces. The enlarged West Basin in its the horseshoe shape, balances the scale of the more open basins in the combined form of the lake system. Under the direction of Richard Clough and implemented by the Parks and Gardens Section of the Department of the Interior, the NCDC was awarded the Australian Institute of Landscape Architecture Award of Landscape Excellence in 1986 for its Lake Burley Griffin entry.
- 5.6 The structural features of Lake landscape, Scrivener Dam, and Commonwealth and Kings Avenue Bridges are individually outstanding achievements of design of technology. The Carillon and Captain Cook Water Jet provide vertical eye-catching features within the Central Basin. The many landscape features that together create the outstanding perimeter lakeshore landscape include the developed parks of Commonwealth Park, Kings Park, the Sculpture Garden of the National Gallery of Australia, the Nara Garden, the Peace Park and the Beijing Garden. West Basin's Acton Park, Grevillea Park, Yarramundi Reach, Bowen Park retain a naturalistic environment allowing mixed recreation activities and 'loose space' for informal use while Jerrabomberra Wetlands Nature Reserve, Yarrumundi Grasslands and Stirling Point have significant natural importance.
- 5.7 The creative technical outstanding achievement is that all of these major features linked by landscaped foreshore open spaces form the diverse lakeshore parkland that interacts with the structural and landscape features to contribute to the greater landscape masterwork of Lake Burley Griffin and Lakeshore landscape.

6 Criterion G— Social

The place has outstanding national significance in strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons.

- 6.1 For Australians, Lake Burley Griffin is outstanding in representing the image of Canberra to the nation and its symbolic and landmark value as part of the national capital's landscape is well recognised and widely valued. For Australians, Lake Burley Griffin is a well-recognised symbol of Canberra, forming the centre point of the national capital's designed landscape. For the Canberra Community Lake Burley Griffin is highly valued by the Canberra community as a unifying element and an iconic cultural landscape that helps define their city as the nation's capital, and contributes significantly to their identity, lifestyle and sense of purpose (Godden Mackay Logan 2009).
- 6.2 The Lake Burley Griffin and Lakeshore Landscape is a popular nucleus of the city attracting countless visitors to its walks, cycle paths, picnic grounds and wetlands with the recently established R.G. Menzies' walk extending from Commonwealth Avenue Bridge to Kings Avenue Bridge being a most popular and well utilised recreation resource. The landscape area of Rond Terraces due to its openness to enable the major land axis vista is a significant space that is the venue for national and international events such as triathlons and where celebratory events such as night fireworks, monument lighting, and social cultural entertainment events such as 'Stopera' operas several of which have been held.
- 6.3 The outstanding social importance valued by community members and visitors is recreation opportunities on water and land, promenading, enjoying celebratory local events, biking, rowing, picnicking, the Sri Chinmoy Marathon swimming, national and national international events such as triathlons. Sandy beach areas created at Grevillea Park, Black Mountain Peninsula, Weston Park and West Basin are important recreation resources for national events and public use. The value of the Lake and its landscape to citizens substantiated by the reports by Pipitone 2009, Godden Mackay Logan 2009 and Marshall et al 2010.

- 6.4 The high regard this social value is held by the community was demonstrated:
- (i) at a public meeting in 2016 when all participants (over 250) unanimously agreed to a motion condemning the appropriation by the ACT Government of ACT public parks and dedicated open space areas surrounding Lake Burley Griffin and including West Basin for commercial and residential development and called for the ACT Government to suspend the proposed commercial and residential developments at West Basin. The meeting also called for complete heritage protection of Lake Burley Griffin and Lakeshore Landscape
 - (ii) by a petition to the ACT Government submitted in December 2017 from Canberra citizens urgently calling for heritage protection for Lake Burley Griffin and its surrounding landscapes.

7 Criterion H— Associative

The place has outstanding heritage significance to the nation in the place’s special association with the life or works of a person, or group of persons, of importance in Australia’s natural or cultural history.

- 7.1 Lake Burley Griffin and Lakeshore Landscape is most famously associated with Canberra's eminent designer, Walter Burley Griffin and was named in his honour when Prime Minister Robert Menzies inaugurated the Lake in 1964. It has a strong association with Griffin's wife and partner, the architect Marion Mahoney Griffin who shared Griffin's love of nature and was responsible for the exquisite renderings of the international prize-winning plan.
- 7.2 The Lake as a water impoundment also has a strong association with Charles Robert Scrivener, the surveyor who investigated and recommended the Molonglo River and Limestone Plains for the site of Canberra and after whom Scrivener Dam is named.
- 7.3 Lake Burley Griffin has a strong association with Sir Robert Menzies who played a pivotal role in the implementation of the lake construction. The Lake has an association with the English urban planner, William Holford, commissioned to finalise the plan of the lake and lakeshore parklands and John Overall along with the National Capital Development Commission team who managed the implementation of the lake and landscaping works.
- 7.4 Thomas Charles Weston and Lindsay Pryor also have a strong association for their role in afforestation of the parklands prior to the lake works and its filling. Peter Harrison, Chief Town Planner, and Richard Clough chief landscape architect for the NDC were responsible for directing the design and implementation of all the landscaping works during the construction of the lake. Dame Sylvia Crowe provided some of the landscape design for Commonwealth Park.

All the associations are of outstanding national value.

4 Table of Heritage Values and with likely and imminent adverse threats

Threatened Heritage Values, Numbered Items refer to statements in Statement of Significance (SOS)	Adverse Threats that to values and attributes that are Likely and Imminent
The lake waters, naturalistic shoreline and perimeter parklands described in the following SOS statements: Items: 1.1, 1.2, 1.3 and 1.5 Items: 3.1, 3.2 and 3.3	The threat to Lake Burley Griffin and Lakeshore Landscape is likely and imminent as the 2 ha infill of the Lake at West Basin, is scheduled to commence early this year (2018).

<p>Items: 4.1- 4.6 Items: 5.2 -5.6 Items: 6.2 and 6.3</p>	<p>The integrity of the way the NCDC kept the Griffin design composition but modified the shoreline to be naturalistic with the shape of West Basin being open and of comparable scale with East Basin, will be adversely affected by the proposed lake infill that is likely and imminent (due to commence early 2018).</p> <p>The picturesque-naturalistic lake edge at West Basin will be changed to a retaining wall that will obliterate an existing beach area created when the park was developed. This threat is likely and imminent.</p>
<p>Significant vistas across the Lake that will be adversely affected are described in the following SOS Statements: Item: 4.5 Item: 5.2</p>	<p>The apartment estate, scheduled to proceed with land releases in 2020 in West Basin, following the foreshore infill in 2018, will completely cover the existing Acton Park area as well as part of the proposed lake infill area. The proposal will block the vistas of the lake from the iconic route to the Australian Parliament House along Commonwealth Avenue (between Vernon Circle and Albert Street). The threat is likely.</p> <p>The building estate will permanently, adversely affect views to West Basin from the south side of the lake, with building developments over the parkland perimeter on Acton Park, West Basin and Acton Peninsula in West Basin. As the building estate development is scheduled to commence following land releases in 2020. The threat is likely.</p>
<p>The significance of the parkland perimeter that will be adversely affected is noted in the SOS statements: Item 3.2, Items: 4.1, 4.2, 4.3, 4.5</p>	<p>The parkland perimeter will be affected by the solid intrusion of a building estate onto the perimeter lakeshore landscape in West Basin. As the building estate development is scheduled to commence following the lake infill works 2018 and land releases in 2020 it is likely.</p>
<p>The significance of the retained Griffin vision and Griffin elements that will be adversely affected are noted in SOS statements: Item 1.1 Items: 3.3 and 3.4 Items: 5.1, 5.2, 5.3 and 5.4</p>	<p>The lake infill and reclamation of land followed by a building estate on the parkland will not realise Griffin's 1911, 1913 or 1918 plan as claimed in the development proposal as Griffin did not show urban extension to the lakeshores of West Basin. He showed parklands. The proposal is urban encroachment on Canberra's greatest asset, Lake Burley Griffin and is a threat that is likely.</p> <p>By inserting an anomalous segment of Griffin geometry to the lake edge of West Basin and not elsewhere in the lake, the lake infill and new retaining wall will adversely impact the</p>

	<p>design pattern that was followed in the post war years. The post war work now exists in the lake delineation along as the naturalistic-picturesque lake edge that was the constructed masterwork of the 1960s. The threat to the naturalistic lakeshore is likely and imminent.</p> <p>The proposed retaining wall in West Basin has been noted as following the Griffin's lake edge geometry, an interpretation that has no validity as the Griffin lake edge was not constructed due to essential modifications. Griffin did not intend a built up city with apartment and commerce in West Basin near the lake edge. Instead he placed great emphasis on the perimeter parkland in all his plans. <i>Refer Figures 1 and 2.</i> The proposed retaining wall threat is likely and imminent.</p> <p>The likely and imminent threat of infill of 2ha of Lake Burley Griffin to enable the future construction of an apartment estate will unbalance the composition of the urban form of the Lake Burley Griffin basins that were constructed in the 1960s. <i>Refer Figure 2.</i></p> <p>The lake infill, land reclamation and the extension of the building estate of the <i>City to the Lake</i> will permanently destroy the aesthetic vista qualities experienced from north and south sides of the lake. It is likely this will establish a dangerous precedent for urban encroachment in other areas of the lake. <i>Refer figures 3 and 4</i></p>
<p>The significant lakeshore parklands valued by the local and national community are noted in the SOS statements: Items: 6.1, 6.2, 6.3 and 6.4</p>	<p>The proposed development at West Basin will adversely affect lake landscape areas used for recreation and public enjoyment by obliterating public parklands valued by Canberra citizens and visitors to Canberra. The threat is likely.</p> <p>The proposed 2 ha of infill at West Basin that covers the public lakeshore beach area as well as the existing West Basin parklands of Acton Park and Acton Peninsula will diminish a valuable open space environment that is now and will become more important for Canberra citizens with the increasing number of urban apartments in central Canberra.</p> <p>The infill will permanently obliterate parkland that could be upgraded to create a venue for visitors and tourists for meetings, picnics and crowd events. The threat to West Basin is likely as the 2 ha infill of the Lake is due to commence early this year (2018).</p>

5 Images

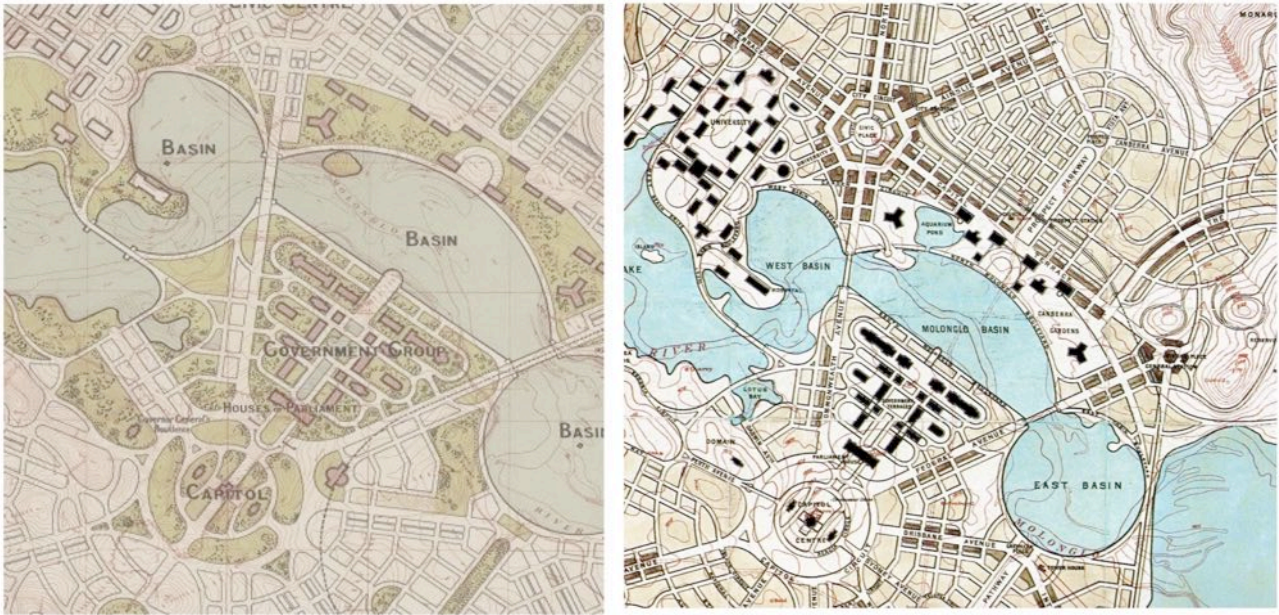


Figure 1: The 1913 and 1918 plans by WB Griffin showing the perimeter parklands of the lake



Figure 2: Image taken by Richard Clough 1964 from Black Mountain after the lake filled, showing the horseshoe shape of West Basin and the changed delineation of Central Basin with the bevelled edges to the southern shore to ensure water flow. (Image courtesy of the National Library of Australia)



Figure 3: Proposed development at West Basin as part of the City to the Lake project that includes a total of 2. ha lake infill in the northern area and .8ha of infill at the park near Commonwealth Bridge. (image from the former ACT Land Development Authority)

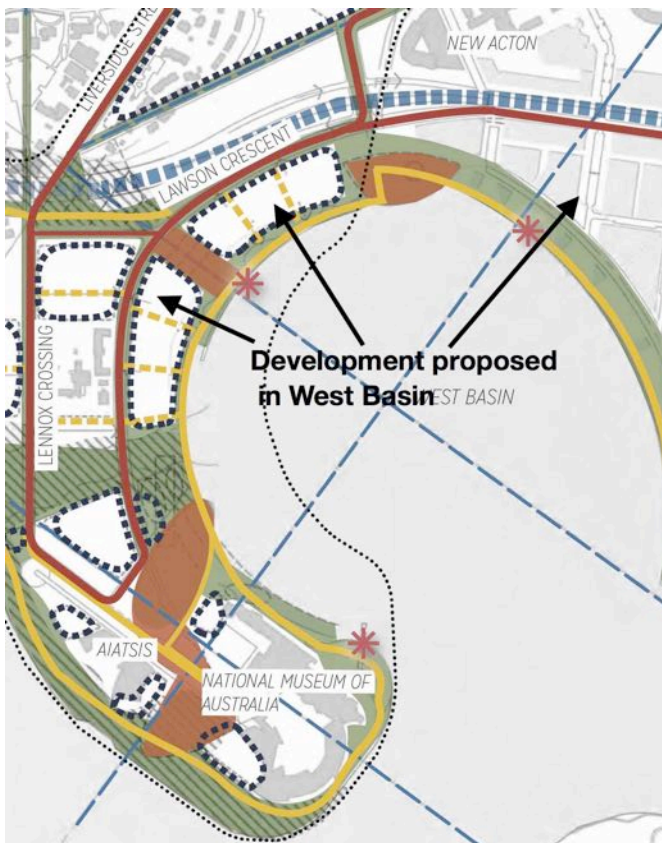


Figure 4: Proposed Development at Acton Peninsula that includes 10m extended lake infill into West Basin . (Base image from the Acton Peninsula Precinct Draft Structure Plan)

6 Description of Lake Burley Griffin and Lakeshore Landscape

(The following place description is updated from the 2015 National Heritage List nomination).

Lake Burley Griffin and Lakeshore Parklands is a designed landscape that includes three formal Commonwealth Avenue and Kings Avenue Bridges, and the lakeshore parklands. Several heritage listed places in the National Heritage List, the Commonwealth Heritage List or Register of the National Estate are adjacent to, within the immediate visual catchment or are included within this proposed heritage area, these are Parliament House Vista (CHL), The Australian War Memorial and Memorial Parade, Blundells Farmhouse (CHL), the Carillon (CHL), the High Court - National Gallery Precinct (NHL), the National Library of Australia (CHL), Weston Park (RNE 17934, ACT Heritage Register), Westbourne Woods (RNE 1337), Yarralumla and Surrounds (CHL) and Stirling Ridge (RNE 13359).

Lake Burley Griffin covers an area of some 634 hectares and has a total volume of about 33,000 mega litres. It has a length of about 11 kilometres, an average depth of 4.5 metres and a maximum depth of 20 metres. Shore length is approximately 40.5 kilometres. The Lake surface is maintained at 556 metres (1825 feet) above sea level subject to temporary variations due to flood management requirements and other catchment inflow effects. The Lake is also a sediment trap that helps protect the Murrumbidgee River and Burrunjuck Reservoir from excessive siltation. The flooding of Lake Burley Griffin has resulted in the creation of wetland habitats importantly the Jerrabomberra Wetlands.

Lake management is a Commonwealth responsibility administered by the National Capital Authority, with day-to-day management undertaken by arrangements with various agencies within A.C.T. Territory Government. Catchment protection in NSW was undertaken until 1998 under a Commonwealth -State Agreement.

Scrivener Dam is a concrete gravity dam, 33 metres high and 235 metres long. Three sluice valves at the base of the dam are used to maintain the lake level. During low flow periods, water is released from Googong Dam to maintain the lake within .25 metres of its normal level (NCPA 1995). Its spillway consists of 5 bays of free overflow crest, controlled by hydraulically operated "fish belly" flap gates, with capacity of 8,500 cubic metres per second (Smith and Coltheart, and C.J. Price). The dam structure incorporates a roadway that provides one of three crossings of the lake.

Commonwealth and Kings Avenues, are major bridges. Each is a twin structure, with separate parallel carriageways. Kings Avenue parallel structures use longitudinal precast pre-stressed concrete T beams forming separate carriageways, each of 7 spans totalling 270 metres. Underpass roads for exit and entry are provided at the south end only within the bridge spans. Kings Avenue Bridge was designed with wide piers to block out East Basin,

Commonwealth Avenue bridge structures are of 5 spans totalling 310 metres, of fully continuous pre-stressed design. It has a higher camber than Kings Avenue Bridge, a design feature to allow for yachts to sail beneath. The end pylons give added importance to the bridge as the main route to Parliament House. To provide an exit and entry clover leaf layout, separate structures are built on the main bridge's south approaches, totalling 49 metres each, in 4 approximately equal spans.

Original woodland trees and pre-Canberra plantings from pastoral properties remain in scattered locations in the lakes parklands. These include *Eucalyptus blakeli*, *E. melliodora* (Yarralumla), *E. bridgesianna* (Acton Peninsula), *Pinus radiata* and *Salix* spp. (Duntroon), *P. radiata* and *Cedrus deodara* (Yarralumla), *Cupressus macrocarpa* (Yarralumla and Lennox Gardens), *Populus nigra* 'Italica' (near the Hyatt Hotel), *Salix babylonica* (near Blundells Cottage and at Molonglo Reach).

The lakeshore landscape retains much of the tree structure planning executed by the National Capital Development Commission. These planting are documented in a report by Richard Clough and John Gray (1964). Several of the groups of trees planted for the lake edge have been recognised as notable trees Pryor and Banks 1991) and include *Taxodium distichum* (Weston

Park, Black Mountain Peninsula and Nerang Pool) and *Salix fragilis* (Acton Park). Within Commonwealth Park are several commemorative trees and a number of notable trees, some of which are locally rare in Weston Park and the lakeshore arboretum (Pryor and Banks 1991).

The Lake's foreshores contain extensive parklands that offer a range of passive and active recreation opportunities, some of which is developed as designed gardens and formal landscaping such as Commonwealth Park, Kings Park, the Sculpture Garden, the Peace Park, Parkes Place foreshore area, Lennox Gardens, Yarralumla (the Governor General's Residence). Parklands and recreation areas with designed but more informal landscaping such as Aspen Island, Bowen Park, Weston Park, Yarramundi Reach, Springbank Island, Spinnaker Island, Grevillea Park, Molonglo Reach. Black Mountain Peninsula has naturalistic landscapes, and Jerrabomberra Wetland, Acacia Inlet, Yarramundi Inlet and Warrina Inlet have been developed as wetlands for native fauna. West Basin offers an important space for parking for events such as Floriade and open space use.

The Lake waters have defined sailing and rowing courses and the water is also used to irrigate some of the nearby parklands and the Royal Canberra Golf Course.

Natural environment description

In ecological terms, the lake has created valuable wetland habitats, offers some protection against excessive siltation downstream, and the Dam fills an important flood control function. However, Lake Burley Griffin does not provide the necessary environmental conditions for the successful breeding of many introduced and native fish species and as a result does not maintain viable fish populations without regular restocking (Environment ACT 2000). Although the 1995 Lake Burley Griffin Management Plan recognises that despite being artificial in origin, the lake has become one of the most significant aquatic ecosystems in the ACT, many of its natural values are contained with the Jerrabomberra Wetlands Nature Reserve.

Despite the presence of exotic plants, the margins of the main water bodies of Jerrabomberra Wetlands provide significant aquatic habitat with a mix of rushes and sedges growing in conjunction with mainly exotic tree species such as willows *Salix* spp. and poplars *Populus* spp. Some amenity plantings of native species have been undertaken around the public use areas. Key habitat features of the area include large parts of Dairy Flat (a depositional floodplain of the Molonglo River), as well as open water areas such as Jerrabomberra Pool, Jerrabomberra Reach, Kelly's Swamp, Shoveller Pool and Molonglo Reach. The wetlands also provide areas of reed beds, marshlands, mudflats, gravel beaches, grasslands and drowned trees, all of which add to the area's high level of habitat diversity.

Seventy seven species of waterbird have been recorded within the Nature Reserve. This represents most of the waterbird species that are found in south-eastern Australia. Sixteen of these species use the area to breed. Notable amongst the waterbirds to use the area are the Latham's snipe *Gallinago hardwickii*, the common greenshank *Tringa nebularia*, the red-necked stint *Calidris ruficollis* and the sharp-tailed sandpiper *Calidris acuminata*, all of which are protected under the Japan Australia Migratory Bird Agreement and the China Australia Migratory Bird Agreement. Also present is the iconic black swan (*Cygnatus atratus*).

Ninety six species of terrestrial birds have also been recorded within the wetland area. They generally utilise the reed beds on the shores of the open waterbodies.

In addition, platypus *Ornithorincus anatinus*, eastern snake-necked tortoises *Chelodina longicollis*, and eastern water-rats *Hydromys chrysogaster* have also been recorded in the area.

Social and Aesthetic Qualities

The Lake unifies the central precincts and national areas of Canberra and gives central Canberra a high aesthetic quality. It successfully expresses the water axis - a major component of the Walter Burley Griffin design concept. It provides a system of linked water bodies and recreation parklands.

The lake waters and lake shore parklands of the Central Basin capture the base of the land axis vista landscape designed by Griffin and perpetuated by subsequent planners as a visual aesthetic masterpiece that combines plantings, spaces, the water plane, hills and tree canopies to lead the eye from Parliament House to Mount Ainslie and vice versa. Commonwealth Park and Kings Park are extremely popular for active and passive recreation. Commonwealth Park with Nerang Pool and tiered water features, gardens, tree plantings and open lawn areas is a highly valued recreation and aesthetic resource. The grassed areas between the two parks is the nexus of the parklands and land axis vista and its open space is important for experiencing the vista. The low curved forms of the bridges and the vertical features of the Carillon and Captain Cook Jet assist in delineating and focusing the vista space.

The Central Basin is the centrepiece of the National Area in the immediate foreground of the Parliamentary Zone, and unites the wider cityscape and public spaces on its foreshores, which provide settings for major national buildings. The completed project brings into focus the natural beauty of distant mountains and adjacent hillsides and visually unites them with a landscape setting for public institutions, complemented by low profile graciously curved bridges. Bird life on the lake and foreshores is greatly enjoyed by Lake visitors.

The lake is a most admired component of the Canberra plan providing a reflective setting for public buildings, a tranquil nucleus for Canberra City. It provides extensive ephemeral and at certain times ethereal aesthetic qualities. It is a major feature of Canberra's viewpoints at Black Mountain, Mount Ainslie and Red Hill and vistas across the lake to background hills and ranges.

Buildings enhanced by the lake setting include the National Library, Commonwealth Place, the High Court and the National Gallery. Cultural landscape features that enhance the lake's aesthetic qualities include Commonwealth and Kings Avenue bridges, Captain Cook Jet, the Carillon, all the water edge plantings including the poplars at Yarramundi Reach, the Swamp Cypresses at Weston Park, the Cypresses at Acton Peninsula, Weeping Willows, and planted and existing eucalypts.

Jerrabomberra Wetlands Nature Reserve continues to provide an important environmental education resource. Bird hides and paths have been constructed near Jerrabomberra Pool and Kelly's Swamp for community recreation and education. Dairy Road, the main access point for the Jerrabomberra Wetlands, was altered to prevent through-traffic. This has greatly reduced the amount of background noise in the immediate area and has enhanced the wildlife experience for visitors to the wetlands.

The water surface and foreshores provide the city with many venues for recreation, social and public events and community gathering and present easy access to national buildings set in adjacent landscape. A great range of water sports is conducted on the lake and boat sheds or clubhouses are located at Yarralumla Bay, Orana Bay, Lotus Bay and Black Mountain Peninsula and there is a ferry terminal at Acton.

Commonwealth Park is used for celebratory events and festivals such as the Canberra Day, fun runs, the hugely successful Floriade, Australia Day citizenship ceremonies, and fireworks displays events and contains many arts works. The Carillon on Aspen Island, a gift from the British Government to commemorate the Golden Jubilee of the National Capital of Australia. A display centre has been developed at Regatta Point. The recently completed R.G. Menzies Walk is most popular for walking, cycling, jogging. The Rond Terraces following Griffins vision are a place for gatherings, celebratory events viewing vistas, fireworks and monument lighting, recreation and entertainment activities.

West Basin, north side provides a naturalistic interface between Commonwealth Park and the Australian National Museum. It provides space for overflow parking for national events and transmits vistas viewed from the symbolic route of Commonwealth Avenue across the lake to the Brindabella and Bullen Ranges. The West Lake area of Lake Burley Griffin and its lakeshore parklands is particularly an area of naturalistic landscape with tree-lined foreshores and water-bird life that extends around the northern and western edges of West Lake. Black Mountain Peninsula

is a significant central landscape feature of the West Lake naturalistic area. As a narrow strip of land it is entirely devoted to recreation activities within the naturalistic landscape setting.

Black Mountain peninsula is a foreground feature of vistas to Black Mountain landscape from the southern shores of the lake and from Weston Park and Black Mountain Peninsula Park. Some of the lakeshore plantings at Black Mountain Peninsula such as the *Taxodium distichum* and the *Alnus glutinosa* are species that were historically researched by Dr Betty Phillips and Professor Lindsay Pryor and subsequently planted as water edge plantings in the 1950s while the eucalypt plantings at Nara Grove developed in 1996, is considered a place of significance by the ACT Government that has an annual festival and continuing plantings. Lake Burley Griffin and Foreshores were noted by the National Capital in 2006 as intending to provide a range of recreational, educational and symbolic experiences of the National Capital, both formal and informal parkland settings with particular landscape character or themes.

7 Lake Burley Griffin and Lakeshore Landscape History

The Godden Mackay and Logan, *Lake Burley Griffin Heritage Assessment Report 2009* (prepared for the National Capital Authority), Item 3 (The Environment Context: 33-42), Item 4 (the Indigenous Cultural Landscape: 43-57) and Item 5 (The Historical Context: 59-78), covers in detail contextual history of the heritage place.

Planning history

(The following history is from the National Heritage List nomination of 2015).

In 1901, following the opening of Parliament, the first congress of engineers, architects and surveyors advocated that the site for a Federal Capital city should have an abundant water supply to furnish the creation of lakes, gardens and fountains (Reid, 2000: 13). At that same congress, Charles Bogue Luffman stressed the need for parks and woodlands while botanist Joseph Maiden through the Royal Society of New South Wales, also advocated an ornamental arboretum as the foundation for the national capital (Gray 1999: 58). In the instructions from the Minister for Home Affairs to the surveyor Scrivener, noted, 'the potentialities of the site will demand most careful consideration from a scenic standpoint, with a view to securing picturesqueness, and also with the object of beautification and expansion.' (Gray 1999: 80).

The government surveyor Charles Scrivener investigated a number of possible sites for Australia's federal capital and recommended the Canberra site on the Molonglo River because of the ability to utilise waters of the Molonglo and Queanbeyan Rivers for ornamental waters for the city. This site for the city was agreed by the Prime Minister and the Premier of New South Wales. The Commonwealth then negotiated rights over the Molonglo and Queanbeyan Rivers. In order to incorporate a lake in the city planning, gauging weirs were established on the Molonglo near Yarralumla Dairy and on the Queanbeyan River near Bradley's Creek.

In 1911 a design competition for planning the federal capital city in the Molonglo Basin, was launched with requirements for ornamental water, parks and gardens. Locations for weirs and river gauging flow stations were included. A thousand copies of the conditions and design material were sent to 10 cities around the world and 137 design entries were received, including 42 Australian entries.

At the time of the competition, two major urban planning philosophies 'City Beautiful' and 'Garden City' coincided. The City Beautiful style consisted of a conceptualised city with integrated classical style urban buildings, public parks and tree lined streets building as a campaign against city ugliness. The style was a mix of natural beauty, formality, axes neo-classicism and the Beaux Arts

in its combination of architecture, landscape, sculpture and water features (Freestone p160-163). Garden City planning was initiated by Ebenezer Howard to combine the best features of town and country and interpretations of the style were implemented in Australia's early Twentieth Century suburbs. The engineer, JA Smith, was one of the majority of judges and awarded first prize to Walter Burley Griffin in 1912 for his entry in the Federal Capital Design Competition. The other two judges (an architect and a surveyor) were divided about Griffin's entry, and Minister King O'Malley accepted the majority view.

Walter Burley Griffin was awarded first prize for his design for Canberra that embodied the existing landscape as a major feature. Griffin's plan was superior to other competitors, blending the mountains and hills as features of the geometric layout, and incorporating his philosophy of equality, democracy and progress. The water feature of the lake crossed a grand triangle which linked the functions of the city and had three minor hills as its vertices (Firth, 2000).

Griffin, having worked in the Chicago offices of Frank Lloyd Wright was knowledgeable about natural geography and botany and in his American landscape work he used indigenous plants and sought 'to rehabilitate landscapes to recapture primeval nature (Vernon1998:91). Griffin was known to have been inspired by the 1898 World's Columbian Exposition, Chicago and its planner Daniel Hudson Burnham and landscape architect Frederick Law Olmsted. The major natural feature of the Chicago Exposition was water as a system of basins, canals and a lagoon. By the time Griffin was entering his professional life, Olmsted was renowned for his major landscaping achievements such as Central Park, New York and the Boston Park System, promoting overall naturalistic landscapes with variety of scenery, including arboreta, woodlands, picturesque interludes, open meadow like areas and the restoration of fens (wetlands) with their waving reeds. In the late 19th Century the 'gardenesque' style was at its heyday but its excesses were an anathema to Olmsted and the style never employed in his landscapes (Zaitzevsky, 1982:21).

Though from Chicago, the city which founded the skyscraper, Griffin's view was that Canberra should be a 'horizontal city; he proposed conscious use of landscape space as a design element. The planner, Peter Harrison noted in 1995 that 'the great accomplishment of Walter Burley Griffin, and of the Australian nation which selected and up to now has supported the Griffin plan, was the capacity to conceive space itself as the basic design issue (Harrison 1995).

The original design for the lake presented in Walter Burley Griffin's award winning plan for Australia's capital city of 1912, was modified slightly in 1913 after he had seen the site. It consisted of a formal central water basin of curved edges, two circular formal basins to the east and west of the central basin and larger lake water bodies further to the east and west. The water system of basins lakes formed part of Griffin's geometry for the Canberra Plan. The east basin was at a higher level and was planned to be fluctuating so that the central basins levels could be maintained.

Reid (2002: 73) notes how Griffin described the central Canberra area as 'a theatre with the lake as the orchestra pit, separating the Government Group on the triangular stage from the audience on the lower slopes of Mount Ainslie. The front row of the Recreation Group of buildings for the populace'. The recreation group buildings were cultural buildings to be arranged on either side of the land axis vista.

The Department of Works commenced implementing the city plan but greatly modified Griffin's design. In 1913 Griffin was invited to Australia by Prime Minister Joseph Cook and appointed Federal Capital Director of Design and Construction. Griffin's 1918 plan shows the lakeshore landscape mostly unannotated except for arboreta on the western shores of West Lake, the open auditorium at the central northern lakeshore, an esplanade on West Lake and boulevards on the shores of the three basins (NCA 2004:110). Investigation and planning for the lake commenced with Percy Owen, Director General of Works. In 1915 they recommended that the eastern lake be postponed. After World War I, the Federal Capital Advisory Committee was established chaired by Sir John Sulman. As an advocate of the Garden City principles, Sulman focused on the development of suburbs to accommodate public servants. Griffin left his position in Canberra in

1920 (Harrison,1983).

From 1925 the Federal Capital Commission headed by Sir John Butters took control of development of Canberra with greater statutory powers. A proposal to construct a dam in 1926 was postponed. Extensive planting under the office of Parks and Afforestation was undertaken, and Griffin on a visit to Canberra in 1926 pleaded for more native flora planting. Issues regarding the development of the lake were managed by Owen, the first Director General of Works.

Engineering research and analyses over the next 50 years considered how to implement Griffin's concept of central unifying bodies of water in the Molonglo flood plain. The Depression delayed the development of Canberra.

In 1938 the Minister for the Interior announced in Parliament, the appointment of a board of architectural experts, the National Capital Development and Planning Commission (NCDPC) to monitor the development of Canberra. The development of the lake was suggested on a few occasions. The NCDPC removed the East Lake basin and the railway connection to North Canberra as designed by Griffin, from the plans for the Lake.

By the 1950s, Canberra had a generation of residents and consisted of well spaced suburbs that included extensive gardens and tree planting, with the north and south areas separated by the Molonglo river flats. A number of schemes for Canberra's lake were proposed such as the Ribbon of Water Scheme in 1953 and the Molonglo Lakes in 1953 as an alternative to West Lake with a dam at Acton (Hince p.183, 1994). The Senate Inquiry 1954 - 55 'to inquire into and report upon the development of Canberra in relation to the original plan and subsequent modification and matters incidental thereto' reversed the decision for a chain of lakes and West Lake was found to be desirable, and the racecourse and golf links in the flood plain were removed. The Inquiry Committee also recommended a single authority to control Canberra headed by a Commission with guaranteed funding, a central park to be developed, access to Canberra's vistas and look-out points, and a body of experts to advise on aesthetic standards (Reid 2002, p.134).

Prime Minister Robert Menzies, during the 1950s, appointed Sir William Holford, a British planner to advise on how to proceed with the planning and building of Canberra. William Holford was invited by Menzies in 1957 to review the Griffin plan (Firth p.145). Holford proposed a slight reduction in the size and formality of Griffin's plan for the lake, in order to follow the natural contour. The National Capital Development Commission (NCDC) Act was passed in 1957 and John Overall was appointed the Commissioner in 1958 (Reid 2002, p.249).

With regard to civil engineering design, Australians were greatly influenced by American schemes for harnessing water to achieve soil conservation, irrigation, flood control and hydro power. The Snowy River Scheme had a significant effect on Canberra. It provided considerable technical expertise and the organisation of the Snowy Mountains Hydro Electric Authority was used as a model for the statutory authority of the NCDC. The NCDC had full responsibility for the lake and the planning team consisted of Clive Price, Executive Engineer (Design), Bill Minty, Lakes Project Engineer, Peter Harrison, Chief Town Planner and Richard Clough, Landscape Design. During 1959 contracts were let for Scrivener Dam and work had commenced on the bridges. The main agencies for the design of the Lakes Scheme were William Holford and Associates, Guy Maunsell and Partners, the Department of Works, and Rankine and Hill.

The lake earthworks and dam were commenced in 1960 and works proceeded at great speed. By July 1962 the work on the dam was almost completed, the lake edge construction was nearly finished, top soiling and grassing of the parkland progressing, the ponds and footbridge in the Central Park, and the Rond Point Pool and jets completed (Altenburg 1993, pp 39). Cutting and filling in the West Lake area was used to form an island where Springbank homestead once stood. Another island was formed by cutting through a finger of land at Yarralumla, and an island in the Central Basin was formed near Kings Avenue Bridge. Extensive tree planting was undertaken with native and exotic species.

Kings Avenue Bridge was opened in 1962. Commonwealth Avenue Bridge incorporating stones from Waterloo Bridge, a gift from Britain, was opened in 1963. Despite encountering some difficulties in the dam foundations in 1962, Scrivener Dam was completed with the gates being officially closed on 20 September 1963 and the official impounding begun. The water reached the final level of 556 metres on 29 April 1964 and in April 1964; it was officially inaugurated by Prime Minister Menzies.

The Lake was named to commemorate the original designer of the city, Walter Burley Griffin. By giving Griffin's name to the most visually prominent element in the city the Government confirmed its confidence in the NCDC to interpret Griffin's plan (Firth p183). The cost of lakes scheme was given as \$5,039,050 for the cost of the dam, the crest gates, control building and ancillary services, the relocations of power lines, tree removals for the lake floor, the formation of lake basins and edge construction.

At the official inauguration of Lake Burley Griffin by the Rt. Hon. Sir Robert Menzies in October 1963 conveyed his vision for the Lake in his opening speech:

I see this lake ultimately not as something purely artificial in its surrounding but as a haunt of birds, as a haunt of wild life. Indeed, I am optimistic enough to think the day will come when tourists coming through will be able to feed the swans and this will be quite a feature of the city...

It is what is around the sheet of water that helps to set the beauty of the lake, and all the work that has been done on the foreshores, in the surrounds of -this lake, all the additions of beauty that have been made will, I think, put us under permanent debt to those who have been responsible for their design and their execution (Menzies, R. 1963).

After the Lake filled, recreation developments including a tourist ferry terminal, picnic facilities were constructed. In 1966/67 the Water Police Headquarters building was completed. A report 'An Open Space System for Canberra' in the 1970s resulted in increasing the recreational use of the lake. Two vertical memorials were installed in the Lake a mile apart on either side of the land axis. The water jet is a memorial to James Cook (completed in 1969) and the Carillon (RNE 018373) completed in 1970, was a gift from the British Government to mark the 50th Jubilee of the founding of Canberra.

Hydrology

Although it had been suggested 1908 that the Commonwealth secure the water catchment for Canberra's proposed water features that never occurred. The Lake Burley Griffin Catchment Protection Scheme was established in the early 1960s due to concerns that the new lake could be subject to high levels of sedimentation due to the degraded state of much of its rural catchment. A tripartite scheme between the Commonwealth and State governments was designed to reduce siltation and ran from 1965 - 1998 covering the Molonglo and Queanbeyan River catchments and tackled the degradation of rural land which began in the 1820s with the destruction of the 'chain of ponds' drainage networks and continued with tree clearing and overstocking.

Between and 1920's and 1950's, a number of reports to parliament were prepared on the form of future development of Canberra and hydrological data was collected about the Molonglo River flows with input from engineers. The NCDC recognized the importance of the lake, and was able to draw on the earlier studies and on the technical resources and hydrological data available through Commonwealth departments and authorities regarding the behaviour of the Lake in terms of floods and droughts and of scour and siltation. Other studies provided information on water quality, effects of climate and health, hazards of unsightly margins, mosquitoes and midges and the possible disbenefits from changes in land uses.

Following the construction of and filling of the Lake, work began to realign the Jerrabomberra Creek Waterway in 1968-69 to provide a bed load trap to minimise saltation into the Lake. In 1978 the Lake reached a critical condition of water quality with a major pollutant being Queanbeyan

sewage effluent.

The regulation of flow into Lake Burely Griffin was improved with the construction of Googong Dam on the Queanbeyan River, inaugurated in 1979. However, the original proposal for a regulating Dam on the Molonglo River has never been implemented.

Landscape Development History

Although Griffin brought new ideas in terms of landscape design to Canberra these were in terms of broad concepts such as utilising natural topographic features and the careful use of spaces. When Griffin came to Australia, the Molonglo River flats contained eucalypts, grasslands, exotic trees and pasture grasses with the slopes extensively cleared. Black Mountain was the only area that had retained natural woodland. Charles Weston, Superintendent of Parks, Gardens and Afforestation (1913-16) commenced lake edge planting with plantings along the shores of the future lake. Weston was given power to choose the nature of the trees to be planted and the style of planting. From 1922, he established a framework of trees on the western ridge behind what is now known as Regatta Point, using exotic and indigenous conifers. The Federal Capital Commission in 1923 recommended that tree planting should be in clumps to create the effect of copses (Gray, 1999:186) and Weston undertook informal tree plantings in other lakeshore areas, including clumps of trees and windbreaks in Weston Park above the 1825 ft contour. Tree plantings around the lake were continued by Lindsay Pryor and David Shoobridge. Plantings by Pryor included the Westlake area, now known as Yarramundi Reach where advanced stock of deciduous trees was planted on the extensive grassland (Hince 1994).

Harry Oakman was appointed the first Director of Landscape, with an aim to provide facilities and landscapes at the suburban level in playgrounds, open spaces street trees, sport centres and roads, and at the Capital City level in lookouts, Lake and Parliamentary surrounds. Oakman was succeeded by Richard Cough who regarded broad landscape issues such as relating urban edges to landforms and the natural landscape of great importance (Altenburg 1993 pp.32-33).

The design of the central area was essentially a formal composition in which the lake basins, ridges, avenues and buildings were to be framed and embellished by a strong pattern of planting. The NDCDC accepted that: the character of natural landscape should be maintained; the existing brown-grey colour of the landscape should predominate but light fresh green should be used around the lake margins and darker conifers for boundaries and backgrounds; autumn colours should be fully exploited for the formal and dramatic parts of the landscape; flowering trees and shrubs should be massed in small enclosures; the Central Axis and Kings and Commonwealth Avenues should be planted formally; the scale of the planting of open spaces should be related to the expected use; and while preserving a sense of unity, the design should aim at creating recognizable character in specific areas (Altenburg 1993 p. 37).

The landscape around the Lake was planned as a huge recreation park. Richard Clough using Holford's recommendation and his own studies produced an overall plan showing the extent and treatment of the lakeside parklands. It was the largest landscape project undertaken by the NDCDC and implemented by the Parks and Gardens Section of the Department of the Interior. It was done in two stages; the first involved the establishment of major planting in more than 400 ha of lakeside parklands in conjunction with the engineering construction of the lake. Quantities of topsoil were removed from the river flats and spread on sports grounds, streets verges and stockpiled. The second stage involved the development of public and service facilities, landscape design around buildings, aquatic planting, installation of lawn irrigation and horticultural park development (Altenburg 1993 p. 37).

The western basin was most suitable for boating activities and recommended as an area that should be kept free of any non-conforming features. Activities proposed for the Lake included a triangular sailing course for West Lake, an Olympic rowing course, starting in East Basin near the Power house and finishing in the Central Basin, water skiing in East Basin and a boat harbour near Kingston. Lotus Bay and Yarralumla Bay were thought to offer the best facilities for yacht anchorage and related activities. In addition, boat hire, toilets, kiosks and restaurants, ramps,

jetties and wharves were proposed.

Scientific aspects of aquatic plants and marine life were also investigated with the assistance of CSIRO. Water edge experimental plantings were commenced by Dr Betty Philips, who had been an ecologist with the Snowy Mountains Hydroelectric Scheme in the 1950s and was appointed Botanist at the Canberra Botanic Gardens in June 1960.

The concept of the Central Park (later renamed as Commonwealth Park) was set in the Holford report, including the shape of the shoreline and the Aquarium Pond. In 1964 Dame Sylvia Crowe advised the NCDC on Commonwealth Gardens and presented 'Recommendations on the Development of the Lakeside Landscape'. Within the park are 200 cherry trees donated by the Japanese Prime Minister Ohira in 1980. A spring floral event named Floriade was developed as a Bicentennial celebration in 1988 and was such an outstanding success it has been an annual festival since that occasion.

The Rond Terrace open space amphitheatre of the Griffin plan was reduced in size by the intrusion of Parkes Way, but its design as landscaped terraces and purpose for community gatherings was retained in the Holford plan of 1958, as well as subsequent NCDC planning and works (Reid 2002, p.269-273).

Structural works description

The original concept of Burley Griffin's series of formal basins with informal bodies of water up-stream and down-stream, became one large lake (with surface level as suggested by Scrivener 50 years before), impounded and controlled by a single dam structure, and crossed by two major bridges.

Maunsell and Partners(?) in association with William Holford and Partners were the engineering consultants for the supervision of the Ponds area, all the central road works and the fountains at the rond point. Messrs. Rankine and Hill were the consultants on the West Lake and West Basin areas. The Department of Public Works were responsible for the lake dam and East Basin. The contract for the dam was awarded to Citra.

Faults in the foundation bed-rock of the river-bed at the dam site could have greatly delayed or increased the cost of the structure, but for post-tensioning techniques recently developed. The control of the water at the 556 metre level (1825 feet) determined by the model test, was only possible with the new "fish belly" crest gates built in Germany. These gates also freed the dam from an awkward superstructure treatment, and allowed a road to run over it.

Apart from the dam wall, Commonwealth and Kings Avenue bridges, constructed to span the Lake, were feats of engineering accomplishment. Both were constructed with an elevation of a single geometrical arc formed by a continuous prestressed concrete box girder having a uniform depth of nine feet. Commonwealth Avenue Bridge as the major route to the Parliamentary Triangle, included design features of pillars in an Art Deco style. Kings Avenue Bridge was opened by Prime Minister RG Menzies, 10 March 1962. Commonwealth Avenue Bridge was opened to traffic in November 1963 and formally opened by Prime Minister RG Menzies, October 1964.

An artificial wall was needed on the south bank with splays at right angles to Kings and Commonwealth Avenue bridges to facilitate the flow of the river through the half-circle it made from Fyshwick to Acton.

The Aquarium Pond (later Nerang Pool) footbridge was constructed as a two span in-situ concrete beam continuous over central pier this was replaced when the Menzies Walk was constructed in 2013.

Despite the success of the lake, the design for East Lake by Griffin has never been implemented, and the flood plain at Jerrabomberra wetland has been difficult to control although a wetland with rich bird life has developed from the series of natural and artificial drainage channels when the

creation of Lake Burley Griffin obstructed and regulated the flow of the Molonglo River and Jerrabomberra Creek. It was designated as a Nature Reserve in 1990. The causeway included in the Griffin Plan that separated the East and Central Basins has never been developed.

In 1995, the Federal Government and the ACT Government agreed in principle to swap ownership of National Land at Kingston Foreshore with Territory Land at Acton Peninsula. This agreement was formalised in the designation of National Land under Amendment 29 to the National Capital Plan approved in April 2000, which included the following addition to 'Section 4.5 Special Requirements for Urban Areas' of the National Capital Plan: *Development in the Kingston Foreshore area . . . is to retain a working boat harbour and lake maintenance facility* (Weirick 2013: 34).

8 Boundary

The heritage area includes:

- All the waters of Lake Burley Griffin including the upstream waters of Molonglo River to Morsehead Drive and Jerrabomberra Creek from the boundary of Jerrabomberra Wetlands to Scrivener Dam and the islands within the lake.
- East Basin lakeshore parklands of Grevillea Park, the river edge landscape between the river and Morsehead Drive, Jerrabomberra Wetlands Nature Reserve including Jerrabomberra Creek and ponds within the Jerrabomberra Wetlands Reserve, the lake fronting Kingston Foreshore Estate, Bowen Park and the strip landscape from the lake edge to Bowen Drive.
- The Central Basin north side lakeshore landscape from Commonwealth Avenue Bridge to Kings Avenue Bridge that includes parklands of Commonwealth Park, Regatta Point, Rond Terraces and Kings Park. On the south side of Central Basin, the foreshore landscapes bounded by the lake edge and Flynn Drive and the National Library of Australia property, Parkes Place, the National Gallery of Australia property and Bowen Drive.
- Kings Avenue Bridge and the fingers of landscape beneath it, Commonwealth Avenue Bridge and the fingers of land beneath it and Scrivener Dam.
- West Basin lakeshore landscape between the lake edge, Commonwealth Avenue, Parkes Way, Lawson Crescent, and the National Museum of Australia property. On the south side the land from the lake edge to Flynn Drive inclusive of Flynn Place and Lennox Gardens.
- West Lake landscape from Scrivener Dam and the lake edge the western lakeshore landscape from the lake waters to and including the road reserve of Lady Denman Drive to the eastern edge of Tuggeranong Parkway including the Lindsay Pryor National Arboretum, Yarramundi Reach, Yarramundi Grasslands and Acacia Inlet. From the western lakeshore landscape and the Lake waters to and including Lady Denman Drive to the junction of Lady Denman Drive and Parkes Way at Sullivans Creek, including all of Black Mountain Peninsula park, from the lake edge to Parkes way and the property of Australian National University and the National Museum of Australia. On the south side, the landscape from the property of the National Zoo and Aquarium the Molonglo River to meet Lady Denman Drive following the boundary and inclusive of the Governor General's property. From the lake edge to the property boundary of the Royal Canberra Golf Course, inclusive of Weston Park. From the lake edge to Brown S le Clubtreet and Alexandrina Drive and inclusive of the all of the landscape of Stirling Park.
- Exclusions that are within the nominated area include the buildings of the Claire Holland House Hospice, the Boatshed Restaurant, the ACT Yacht Club, Capital Lakes Rowing Club,

Rowing Club properties adjacent to Yarralumla Bay, Jerrabomberra Wetlands Education Centre.

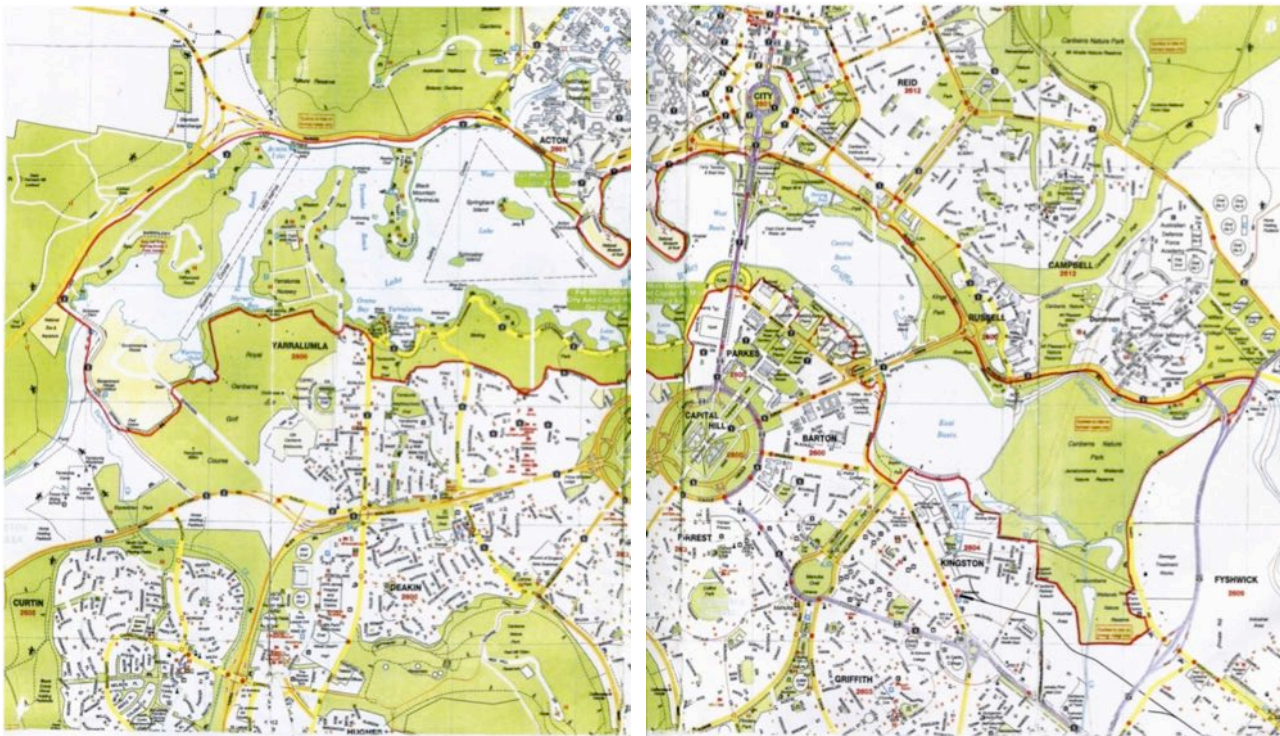


Figure 5: Boundary of Lake Burley Griffin and Lakeshore Landscape West and East sections outlined in red.

9 Associated heritage records

- Australian Heritage Data Base
- 2006 Lake Burley Griffin Conservation Area, Register of the National Estate Indicative Place
- 2009 Lake Burley Griffin and Adjacent Lands nomination to the Commonwealth Heritage List
- 2009 *Lake Burley Griffin and Adjacent Lands Heritage Management Plan Volume 1— Lake Burley Griffin Final Report*, prepared for the National Capital Authority.
- 2015 Lake Burley Griffin and Lakeshore Landscape nominated place to the National Heritage List
- 2015 Lake Burley Griffin and Lakeshore Parklands, Parkes Way, Parkes, ACT, Australia, National Heritage List Nomination. Not selected for in 2017
- Central Basin, Lake Burley Griffin is included in the Parliament House Vista Commonwealth Heritage List.
- Acton Peninsula Trees and Acton Peninsula Limestone Outcrop are entered in the CHL and have protection under the EPBC Act;
- *Canberra and Surrounding Areas* and *Canberra - Central National Area and Inner Hills*, assessment for the National Heritage List in which Lake Burley Griffin is a key feature (<http://www.environment.gov.au/cgi-bin/ahdb/search.pl> accessed 20.12.2017)
- Jerrabomberra Wetlands Nature Reserve has conservation protection as a component of Canberra Nature Park, managed by ACT Parks and Conservation Service (PCS) under the *Planning and Development Act 2007 (ACT)* and policies in the National Capital Plan (Commonwealth) and the Territory Plan (ACT). The reserve is managed in conjunction with Canberra Nature Park, for which there is a separate management plan;
- Weston Park, a lakeside parkland, is listed in the ACT Heritage Register and has protection under the *ACT Heritage Act 2004*;
- Lake Burley Griffin Heritage Assessment Report, Godden McKay Logan (GML) 2009.

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Assessment of National Heritage Significance for Lake Burley Griffin and Lakeshore Landscape

The following is an assessment of values considered against the National Heritage Criteria. The threshold for National Heritage significance is believed to be met in the statements for Criteria A, B, D, E, F, G and H.

Criterion A— Historic, Natural

The place has outstanding heritage value to the nation because of the place's importance in the course, or pattern of Australia's natural or cultural history

- In the course and pattern of Australia's history, Lake Burley Griffin and Lakeshore Parklands exists as a major component of the Griffin plan that Australians had the foresight to accept and implement as the national capital. Walter Burley Griffin conceived the masterly plan for the lake system that was beautifully illustrated by his wife Marion Mahony Griffin in the award winning Canberra plan. Lake Burley Griffin and Lakeshore Landscape are of outstanding significance in Australia's history as major components of the international prize winning plan for Canberra, the Federal Capital, a city written into the nation's founding Constitution.
- The Lake was designed to create an ornamental water feature using the Molonglo River, which passes through the centre of Canberra covering a flood plain with some karst features. Griffin's practical motive was the control of the flood plain for climatic amelioration and he designed the system to ensure water quality. 'To protect the ornamental waters of his central lake, Griffin planned a two level lake system with a higher level East Lake and associated wetlands upstream from the formal central basins and West Lake to manage sedimentation and pollution from the rivers draining the cleared grazing lands, settlements and mines to the south-east of the ACT' (Fischer and Weirick 2014: 352).
- Griffin used the combination of the spatial lake waters and the vista terminii of the design with Black Mountain a reflective feature while the hills and ranges beyond provided the setting landscape from many view points. The lake, developed from its initial design, lies astride the intersection of the main 'land axis' of the city extending from Mount Bimberi to Mount Ainslie and the 'water axis' that extends from Black Mountain across the three central water basins approximately aligned with the water course. The work was strongly encouraged by the Prime Minister, the Hon Robert Menzies who respected Griffin's visionary design and was advised by the eminent British planner William Holdford to commence construction of the Lake. In the 1960s the Lake and extensive lake landscape was developed by surveyors, bureaucrats, urban planners, engineers, architects, horticulturalists, landscape architects, hydrologists and scientists under the direction of the National Capital Development Commission (NCDC). The NCDC used the design principles of Griffin's Water Axis to organise the lake system.
- Modifications were made to some of the formal elements of the Griffin plan for a more naturalistic setting resulting from hydrological and geologic research that required changes to the Lake for water-flow; the bridges were moved further south, the long straight extent of the southern side of the Central Basin was shaped with bevelled ends, the precise Griffin outlines of the Central, East and West Basins were changed to a more open basins with a naturalistic lake edge while retaining most of the original three basin composition set by Griffin. The large East Lake with a naturalistic edge was expunged from the plan to save costs and to enable continued dairy grazing and crop production in the alluvial soils. As the large naturalistic East Lake was deleted, the naturalistic edging to the East and West Basin was a sound design approach. The lake design as

completed provides the spatial setting for Australia's national capital there is no other comparable designed lake landscape system with a perimeter parkland landscape in Australia. The NCDC developed the Jerrabomberra Wetlands as a bird life sanctuary over part of the area of the upper east lake.

- The construction of the two bridges Commonwealth Avenue Bridge and Kings Avenue Bridge in the 1960s crossing the 11 km long lake area and the impoundment of the lake waters by Scrivener Dam completed in 1964 were engineering design accomplishments of the era.
- West Basin was developed without the causeway in Griffin's plan and enlarged into a horseshoe shape formed by the approach to Commonwealth Bridge, the existing Acton Peninsula and a curved northern edge. With the removal of the West Basin causeway and the horseshoe shape, West Basin achieved a comparable scale with East Basin providing balance in the form of the lake basins and retaining the composition of the three basins in lake system.
- The inauguration of the Lake was held in 1964 when Prime Minister the Hon Robert Menzies noted:

I see this lake ultimately not as something purely artificial in its surrounding but as a haunt of tourists coming through will be able to feed the swans and this will be quite a feature of the city.
This is of the essence, this is the heart of the city, and I hope it will be a heart that will be quietly beating, not noisy, not uproarious – a quietly beating, restful heart for the rest of our lives.
- From its design inception to its final construction, the Lake has been the centrepiece of the central national area of Canberra, forming an important part of the immediate foreground of the Parliamentary Zone and the city's main recreation zone. Its parklands have been sequentially upgraded. The formal and informal parklands extend almost fully around the Lake with the exception at Kingston Foreshore, and Yarralumla Bay. The Lake landscape particularly Kings Park, Commonwealth Park, and Patrick White Terrace have become venues for national memorialization, While the lakeshore landscape is constantly used for national and local events and citizen recreation. The Carllion and Captain Cook Jet are major memorial landmarks in the Lake.
- In terms of the course and pattern of the natural environment although the Lake system is originally artificial it has evolved to provide a richness of birdlife and associated breeding, feeding and nursery habitat that now occur on the naturalistic areas of the Lake. Waterfowl that use the Lake's wetlands such as Latham's Snipe (*Gallinago harwickii*), the common Greenshnk (*Tringa nebularia*), the Red-necked Stint (*Calidris ruficollis*) and the Sharp-tailed Sandpiper (*Calidris acuminata*) that are protected under the Japan Australia Migratory Bird Agreement and the China Australia Migratory Bird Agreement.
- Lake Burley Griffin holds the memory of the Ngambri people who at the time of colonial settlement were living in the area and harvesting fish from the Molonglo River. The Ngambri name for their region Kamberri, later altered to Canberra is from the original people. Settlers took over the Molonglo River flats in the early 19th Century when Joshua Moore established a station on Acton Peninsula in 1823. Settlers had their land acquired to provide the Australia's National Capital with a beautiful central lake water system.

**Conclusion on assessment of national heritage significance:
In the course and pattern of cultural history and natural history Lake Burley Griffin
and Lakeshore Landscape meets threshold for Criterion A**

Criterion B— Rarity

The place has outstanding heritage to the nation because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.

- Lake Burley Griffin and Lakeshore Landscape, is outstanding to the nation for its rarity as a designed urban lake system that brings together the outstanding works of planning, engineering design and works and landscape development to create the magnificent urban lake that is the centrepiece of Australia's national capital. There is no other city lake in Australia that has such a central designed, lake landscape system of such outstanding design.

(There are several Commonwealth heritage values recorded against this Criterion B.

Criterion D— Representative

The place has outstanding heritage to the nation in demonstrating the principal characteristics of:

- i) a class of Australia's natural or cultural places; or**
- ii) a class of Australia's natural or cultural environments.**

- Lake Burley Griffin and Lakeshore Landscape, as a class of designed landscapes from the early 20th Century, embodies a system of water features of formal basins, inlets and islands in a physical significant expression of nature and design. As a lake system central to Canberra's urban plan, Lake Burley Griffin and Lakeshore Landscape provide a water spatial dimension to carry the vistas to the naturally vegetated hills, reflect the sky and reflect significant architectural features in its Central Basin. The Lake is spanned by two graciously curved mid- twentieth century style bridges, Kings Avenue Bridge and Commonwealth Avenue Bridge, the later was given pillars at either adding importance of the Commonwealth Avenue as a symbolic route from City Hill to Capital Hill.
- As a 20th Century designed landscape, the lake system embodies contemporary ideas on the importance of organic landscape as urban design and a social and environmental element. The Lake and lakeshore landscape complex reflects landscape water systems established in America towards the end of the Nineteenth Century, particularly in the works of Frederick Law Olmsted, with the inclusion of arboreta, parks, gardens, naturalistic landscapes, wetlands and landscape features with strong evergreen planting at the Eastern and Western lake horizons, views that stemmed from the creation of a composition in which all parts were subordinated to a single, whole coherent effect with a strong purpose to give people greater enjoyment of scenery.
- Similar to Olmsted's work the lake landscape was to have a rich variety of public landscapes within which was a diversity of colours, arboreta, trees and water forms flowing through a city with formal and naturalistic character (Vernon 2005:4-6). Griffin placed strong emphasis on continuous parklands around the Lake as shown in all his plans. He used natural plant colours and tree forms for design effect with intended dark evergreen green features to terminate the lake's western and eastern extent with a cluster of *Cupressus* spp., known as Roman Cypress Hill at its western terminus and a plantation of *Sequoia sempervirens* at its Eastern extent, a relict of this plantation remains.
- The outstanding merit of Griffin's design is the attention he paid to the natural landform. The natural terrain of the Molonglo flood plain needed only a little help from the hand of its designer for its transcendence into magnificent ornamental waters; likewise the gentle slopes of the foreshores for transformation into parklands, natural gathering places for the enjoyment of spectacle on the water, enjoyment of the national imagery of the parliamentary triangle and scenic vistas of rare relief in the heart of a city. The Lake waters and parklands is a major segment of the captured land axis view that engages the eye, sweeps down from Parliament House, fans out at the Lake and then sweeps up at

the Rond Terraces to terminate in the now forested conical Mount Ainslie with the war memorial nestled at its base, and the return vista, from Mount Ainslie to Parliament House is equally impressive.

- The in the 1960s, National Capital Development Commission (NCDC) executed the landscape plan for the entire Lake lakeshores reducing the formality of the East and West Basins. The landscape development built on Griffin's original lake composition of basins but provided a contemporary picturesque naturalistic style to the Lake system with selected plantings to retain the character of the natural landscape with predominantly natural colour, with light fresh green on the lake margins with dark conifers for background, autumn colours for dramatic parts, flowering trees massed in small enclosure. While retaining a sense of unity, the design also encouraged recognisable character areas (Clough and Gray 1964:2). The developed lakeshore landscape also provides a green landscape perimeter to the Lake that enhances the scenic quality of the Lake, the vistas from Commonwealth Avenue, Australian Parliament House (APH), The Museum of Australian Democracy (Old Parliament House), the National Museum of Australia, the High Court of Australia and National Gallery of Australia and the National Library of Australia. (Although Kingston foreshore and to a lesser extent Yarralumla Bay have developed over the lakeshore landscape, the significant vistas from south to north remain.)
- The surrounding parklands with continual upgrading since 1964 contain a series of landscape expressions that range from formal areas with a predominance of hard landscaping, to intimate planted gardens, particular character gardens designed in international style, a 1970s styled sculpture garden of local native plants, recreation and horticultural parks, naturalistic landscape areas, wetlands, arboreta, native grasslands, and lawns that flow to the lake waters. It has a few small islands, parks extending to the waters and a Governor General's estate. By the beginning of the 21st Century many memorials had become features in the lakeshore landscape.
- Compared with other countries there are few natural urban lakes in Australia. Lake Wendouree in Ballarat is a designed cultural lake landscape system of a smaller size to Lake Burley Griffin. There are other but smaller urban lakes as ornamental waters in Canberra but it is apparent that success of the design of Lake Burley Griffin with its length and a width scale enables the important feature of visual appreciation across the Lake. The two bridges masterfully assist in creating the Central Basin as the central focus while East and West Basin extend from the bridges as water forms that allow the Griffin composition to be read but with the softer edged delineation that adopted the naturalistic style. As the large naturalistic East Lake was deleted, the naturalistic edging to the East and West Basin was a sound design approach. The lake design as completed provides the spatial setting for Australia's national capital there is no other comparable designed lake landscape system with a perimeter parkland landscape in Australia.

Conclusion on assessment of national heritage significance:

The designed lake and landscape water system of Lake Burley Griffin and Lakeshore Landscape meets threshold for Criterion D

Criterion E— Aesthetic

The place has outstanding heritage to the nation in exhibiting particular aesthetic characteristics valued by a community or cultural group.

- Lake Burley Griffin and Lakeshore Parklands is outstanding to the nation for its beauty and other aesthetic properties that are highly valued for the range of aesthetic experiences enjoyed by the Australian community. It provides a tranquil place, a central city oasis and a landscape setting for the many naturalistic vistas of landscape and water and distant mountain ranges. It is the central core of waters and landscape that is linked to tree

covered hills and distant mountains by the city's fundamental geometry of its land and water axes. The Lake and its parklands provide a reflective setting for the national monumental architecture along the southern side of the Central Basin. The lake waters and dark rim of water edge plantings along much of the landscape perimeter add a reflective dimension and add to the scenic property of the lake waters. At times misty weather provides an ethereal aesthetic dimension to the Central City beauty.

- Griffin demonstrated in his design for Canberra that water, spaces and horizontality were key elements. Marion Mahoney Griffin's renderings aesthetically demonstrate the unbroken horizontal plane of the lake waters, retaining walls and vegetation in the lake edge space. The aesthetic expression of the lake in its completed form essentially follows the basin arrangement set by Griffin but with the fine detailing for the naturalistic lake edges, spaces and planting developed and executed by the National Capital Development Commission is of outstanding importance.
- At a time almost a century after the initial design, and half a century after the lake works were researched and the Lake constructed, the lake shore offers serial views and vistas loved by the community, documented in the Study of the Social Value of Lake Burley Griffin and its Setting (Pipitone 2009). The enjoyment and appreciation of the spectacle on the water, the national imagery of the parliamentary triangle and scenic vistas provide rare relief in the heart of a city, valued by visitors and the public.
- The scale of the lake basins remains perfectly in harmony with the surrounding natural environment. Lake edge plantings, and visual diversity of the lake and lakeshores from the formal designed landscapes to the more natural and 'organic' areas at the eastern and western extents are valued. Bird life on the lake waters adds interest and ephemeral qualities, such as the iconic and graceful black swan (*Cygnatus atratus*), also recognised in the ACT's coat-of-arms.
- The Lake parklands provide various landscapes that offer a range of aesthetic experiences that extend around the basins and lake shores such as: formal hard landscapes of the southern Central Basin, decorative garden and cultural garden features of Lennox Gardens (including the Nara Garden and the Beijing Garden); the arrays of mature tree plantings, gardens, spaces and tiered water features of Commonwealth Park; the natural landscape of Black Mountain Peninsula and the West Lake shores; the arboreta plantings, mature trees of horticultural plots and windbreaks at Weston Park; naturalistic plantings of Grevillea Park and Kings Park, the river environment of Molonglo Reach and the bird habitat area and wetlands of Acacia Inlet, Yarramundi Inlet, Warrina Inlet and Jerrabomberra Wetlands. The lake edge landscape spaces are the intentional interface between the city and the waters which apart from Kingston foreshore retain the predominantly intact landscape perimeter promoting a flowing horizontal visual expression.
- The open Rond Terraces designed as a low open auditorium by Griffin, provide a visual sweep to the Land Axis Vista as it leads the eye from the plane the Lake to Mount Ainslie, and as well, provide an open area for experiencing the vista to Parliament House. The valued vistas when travelling along Commonwealth Avenue, the symbolic route to Parliament House, when leaving City Hill extend across West Basin and the lake waters to the Bullen and Brindabella mountain ranges beyond, at times snow capped. Valued vistas of the lake, admired by citizens, are a major feature experienced from the National Arboretum, the National Botanic Garden, Black Mountain and Mount Ainslie and from all the lakeshore walks. The vistas are highly valued by the community and visitors (Pipitone 2009).
- Key landscapes that provide naturalistic backdrops that contribute to the aesthetic image of the entire perimeter landscape space include Black Mountain, Mount Ainslie, Mountoutline with bays and peninsulas as well as small islands that contribute aesthetic interest. The low arches and gentle structural forms of the Commonwealth and Kings Avenue Bridges

visually create ties holding the basin forms and are in keeping with the overall lake aesthetic quality.

- The lakes aesthetic value is demonstrated in how tourism advertising uses lake imagery and how images of Lake Burley Griffin expressing aesthetic value are highly regarded. The high regard this value is held by the community was demonstrated
 - (i) at a public meeting in 2016 when all participants unanimously agreed to a motion condemning the appropriation by the ACT Government of ACT public parks and dedicated open space areas surrounding Lake Burley Griffin and including West Basin for commercial and residential development and called for the ACT Government to suspend the proposed commercial and residential developments at West Basin. The meeting also called for complete heritage protection of Lake Burley Griffin and Lakeshore Landscape
 - (ii) by a petition to the ACT Government submitted in December 2017 from Canberra citizens urgently calling for heritage protection for Lake Burley Griffin and its surrounding landscapes.

(There are several more Commonwealth heritage values recorded against this Criterion E and although they unlikely to reach the threshold for National Heritage significance the Commonwealth Heritage assessment strengthens the evidence of 'valued by a community or cultural group')

Conclusion on assessment of national heritage significance:

The designed lake and landscape system of Lake Burley Griffin and Lakeshore Landscape meeting threshold for Criterion E.

Criterion F — Creative/ Technical

The place has outstanding national heritage significance in demonstrating a high degree of creative or technical achievement at a particular period.

- Lake Burley Griffin and Lakeshore Parklands is outstanding for its creative achievement that is of significance to the Australian nation. The creative achievement is demonstrated in the original plan by Walter Burley Griffin for Canberra with its central Lake system that won the international design award for the City of Canberra from 137 entrants. The Lake being perceived as an essential component of the visionary plan linking and unifying the land and water axes and vistas. Combined with the naturalistic lake edge and other modifications that were a feature on the NCDC execution of the Lake works, the evolved lake system is a reflective and aesthetic beauty to the heart of the city, and provides climate amelioration.
- Griffin's creativity is demonstrated in the way the lake waters embody the water axis that intersects at right angles with the land axis in the Central Basin. On the western slopes of West Basin, the Water Axis vista can be appreciated extending through the 3 basins and beneath Commonwealth and Kings Avenues to the Jerrabomberra Wetlands. The Lake and the lakeshore parklands are a critical component of Griffin's central vista expanse and are Australia's outstanding landscape design achievement that has been respected and safeguarded during Canberra's one hundred years of planning and development (Marshall et al 2010).
- While outstanding features in their own right, the two bridges masterfully assist in creating the Central Basin as the central focus while East and West Basin extend from the bridges as water forms that allow the Griffin composition to be read but with the softer edged delineation from the NCDC design overlay (completed in 1963) are defining features of the Parliamentary Triangle crossing the Lake and leading to Parliament. Although similar in appearance they employed different construction techniques (Baker 2013:133). The bridge structures along with the Carillon and Captain Cook Jet help focus the vista within the

Central Basin. The impoundment dam, Scrivener Dam utilised post-tensioning concrete technique and operated by fish-belly flap gates.

- Although major planning modifications were undertaken by NCDC following recommendations by the planner William Holford in 1955 that reduced the size of the Lake from the original larger Griffin delineation, the revised plan respected the open landscape space and the perimeter landscape.
- The Lake is underpinned by a several technical achievements that collectively are of outstanding significance; the hydrological water flow research that led to modifications in the shape of Lake Burley Griffin particularly the open shapes of East and West Basins and the bevelled corners to the south side of the Central Basin, the structural engineering of the dam, the bridges, the retaining walls and the dam are all of contemporary achievements. The landscape design and works including the shaping of the Lake and its islands, creation of terraces, retention and reinforcement of native plantings, water edge plantings, and mass plantings for seasonal and contrasting colour, form and spaces was the largest landscape project undertaken by the NCDC under the direction of Richard Clough and implemented by the Parks and Gardens Section of the Department of the Interior. The NCDC was awarded the Australian Institute of Landscape Architecture Award of Landscape Excellence in 1986 for its Lake Burley Griffin entry.
- The structural features of Lake landscape, Scrivener Dam, and Commonwealth and Kings Avenue Bridges are individually outstanding achievements of design of technology. The Carillon and Captain Cook Water Jet provide vertical eye-catching features within the Central Basin. Commonwealth Park, Kings Park, the National Gallery of Australia Sculpture Garden, the Nara Garden, the Peace Park and the Beijing Garden are designed perimeter landscapes of merit. West Basin, Grevillea Park, Yarramundi Reach, Bowen Park retain a naturalistic environment allowing mixed recreation activities and 'loose space' for informal use while Jerrabomberra Wetlands Nature Reserve, Yarrumundi Grasslands and Stirling Point have significant natural importance. The enlarged West Basin in its the horseshoe shape, balanced the scale of the basins in the combined form of the lake system.
- The achievement is that all of these major features linked by landscaped foreshore open spaces to form the diverse lakeshore parkland that interacts with the structural and landscape features to contribute to the greater landscape masterwork of Lake Burley Griffin and Lakeshore Parklands that is outstanding to the nation for its technical and creative achievement.

Conclusion on assessment of national heritage significance:

Lake Burley Griffin and Lakeshore Landscape demonstrate outstanding heritage value and meeting the threshold for Criterion F.

Criterion G— Social

The place has outstanding national significance in strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons.

- For Australians, Lake Burley Griffin plays an important role in representing the image of Canberra to the nation—and potentially internationally. Its symbolic and landmark value as part of the national capital's landscape is well recognised and widely valued . For Australians, especially those who have visited Canberra, Lake Burley Griffin is a well-recognised symbol of Canberra, forming the centre point of the national capital designed landscape. For the Canberra Community Lake Burley Griffin is highly valued by the Canberra community as a unifying element in an iconic cultural landscape that helps define their city as the nation's capital, and contributes significantly to their identity, lifestyle and sense of purpose. The achievement of creating the Lake has been, and continues to be, regarded with pride by the Canberra community (Godden Mackay Logan 2009).

- The Lake Burley Griffin and Lakeshore Parklands is a popular nucleus of the city attracting countless visitors to its walks, cycle paths and picnic grounds with the recently established R.G. Menzies' walk being a most popular and well utilised recreation resource. The landscape area of Rond Terraces links Commonwealth Park and Kings Park and due to its openness to enable the major land axis vista it is a significant space that is the venue for national and international events such as triathlons and is the gathering area for visitors and the local community enjoying celebratory events such as night fireworks, monument lighting, and social cultural entertainment events such as 'Stopera' operas several of which have been held at Rond Terraces.
- Griffin's planned purpose for the Lake was that the waters would be used for rowing activities, the Rond Terraces to be a gathering place for recreation and entertainment as well as the West Lake naturalistic and public recreation area while Commonwealth Park was designed for horticultural displays. At the inauguration of the Lake, Prime Minister the Hon Robert Menzies noted:
 - I see this lake ultimately not as something purely artificial in its surrounding but as a haunt of tourists coming through will be able to feed the swans and this will be quite a feature of the city.
 - This is of the essence, this is the heart of the city, and I hope it will be a heart that will be quietly beating, not noisy, not uproarious – a quietly beating, restful heart for the rest of our lives.
- The array of landscapes offers a variety of scenery and aesthetic experiences valued by Australian citizens. Commonwealth Park is the venue for the annual Floriade festival (since 1988) that brings thousands of visitors annually to Canberra and in 2008 a lake side walk, the RG Menzies walk, was completed extending from Commonwealth Avenue Bridge to Kings Avenue Bridge.
- The social heritage importance covering attachment by community members and visitors, the use of the lake and parklands for recreation, promenading, enjoying celebratory local, biking, rowing, picnicking, the Sri Chinmoy Marathon swimming, national and national international events such as triathlons. Sandy beach areas created at Grevillea Park, Black Mountain Peninsula, Weston Park and West Basin are important recreation resources for national events and public use. The value of the Lake and its landscape to citizens substantiated by the reports by Pipitone 2009, Godden Mackay Logan 2009 and Marshall et al 2010.
- All of the Lake landscape offers venues for recreation and occasional events while Commonwealth Park and Rond Terraces also offer much used venues and spaces for celebration, recreation and games, and as such have an aesthetic ambience of joy and fun as well as social importance.
 - The high regard this social value is held by the community was demonstrated:
 - (i) at a public meeting in 2016 when all participants (over 250) unanimously agreed to a motion condemning the appropriation by the ACT Government of ACT public parks and dedicated open space areas surrounding Lake Burley Griffin and including West Basin for commercial and residential development and called for the ACT Government to suspend the proposed commercial and residential developments at West Basin. The meeting also called for complete heritage protection of Lake Burley Griffin and Lakeshore Landscape
 - (ii) by a petition to the ACT Government submitted in December 2017 from Canberra citizens urgently calling for heritage protection for Lake Burley Griffin and its surrounding landscapes.

Conclusion on assessment of national heritage significance:

Lake Burley Griffin and Lakeshore Landscape demonstrate outstanding heritage value and meets threshold for Criterion G

Criterion H— Associative

The place has outstanding heritage significance to the nation in the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.

- Lake Burley Griffin and Lakeshore Landscape is most famously associated with Canberra's eminent designer, Walter Burley Griffin and was named in his honour when Prime Minister Robert Menzies inaugurated the Lake in 1964. It has a strong association with Griffin's wife and partner, the architect Marion Mahoney Griffin who shared Griffin's love of nature and was responsible for the exquisite renderings of the international prize-winning plan.
- The Lake as a water impoundment also has a strong association with Charles Robert Scrivener, the surveyor who investigated and recommended the Molonglo River and Limestone Plains for the site of Canberra and after whom Scrivener Dam is named.
- Lake Burley Griffin has a strong association with Sir Robert Menzies who played a pivotal role in the implementation of the lake construction. The Lake has an association with the English urban planner, Sir William Holford, commissioned to finalise the plan of the lake and lakeshore parklands and John Overall along with the National Capital Development Commission who managed the implementation of the works.
- Thomas Charles Weston and Lindsay Pryor also have a strong association for their role in afforestation of the parklands prior to the lake works and its filling. Peter Harrison, Chief Town Planner, and Richard Clough chief landscape architect for the NCDC were responsible to directing the design and implementation of all the landscaping works during the construction of the lake. Dame Sylvia Crowe provided some of the landscape design for Commonwealth Park.
- All the associations are of outstanding national value.

Conclusion on assessment of national heritage significance:

Lake Burley Griffin and Lakeshore Landscape demonstrate outstanding heritage value and meets threshold for Criterion G.

9 Conservation policies set out in the approved *Lake Burley Griffin and Adjacent Lands Heritage Management Plan Volume 1— Lake Burley Griffin Final Report*, prepared for the National Capital Authority, 2009.

The values that led to the following policies being documented in the conservation management plan are under adverse threat that is imminent and likely.

- Conserve and manage the integrity of the formal design elements of the study area that derive from the Griffin plan and the later design and construction of the lake and its foreshores, influenced by Holford and the NCDC.
- Conserve the integrity of the axes, vistas and visual links with the surrounding landscape (including Black Mountain, Mount Ainslie and Red Hill) and conserve the visibility of the lake from public open spaces and public institutions. This will support the continued appreciation of the lake as a unifying and linking element for the close and distant topography in the landscape and as the setting of the surrounding buildings and open space areas.

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