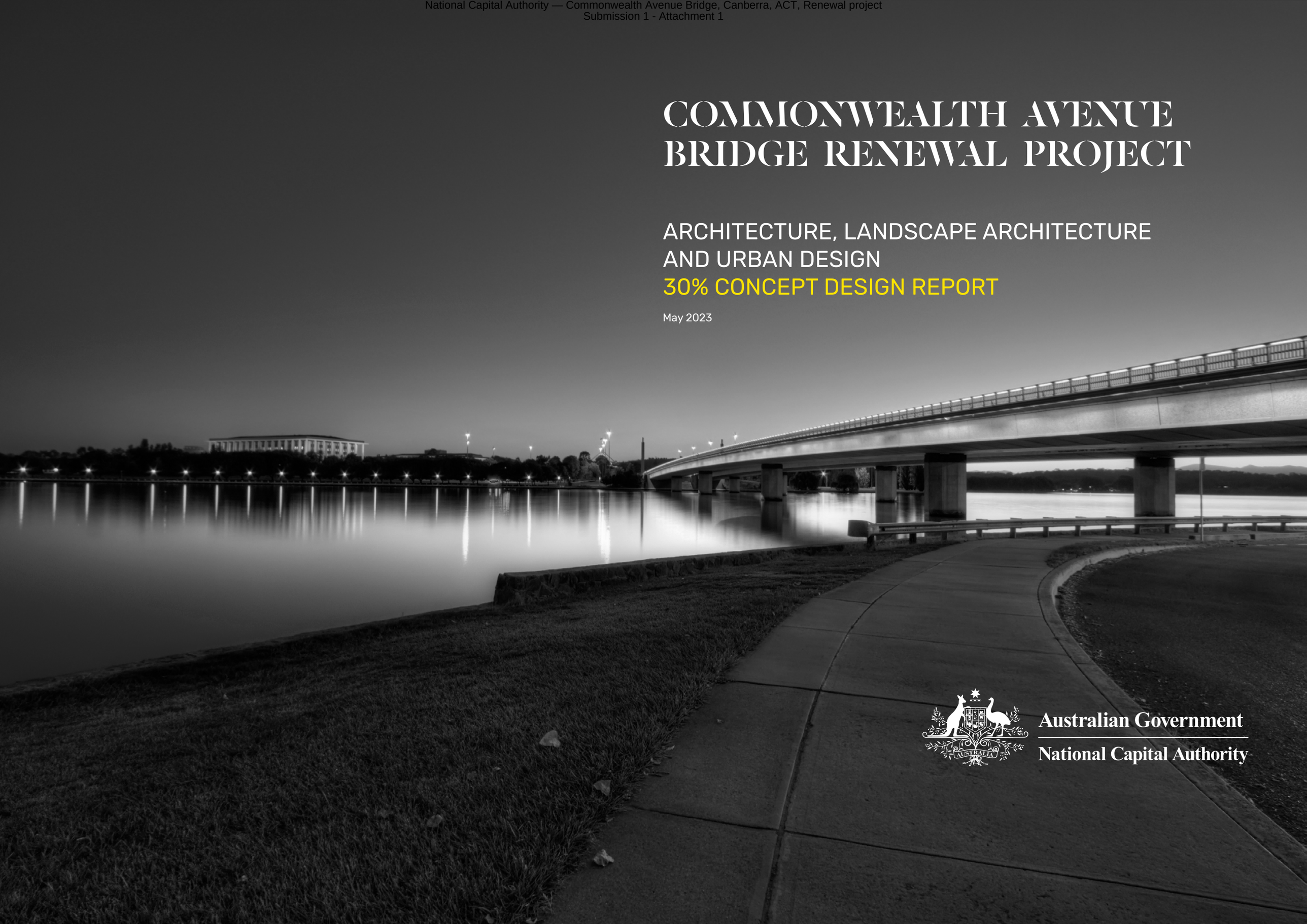
COMMONWEALTH AVENUE BRIDGE RENEWAL PROJECT

ARCHITECTURE, LANDSCAPE ARCHITECTURE AND URBAN DESIGN
30% CONCEPT DESIGN REPORT

May 2023



Australian Government
National Capital Authority

COMMONWEALTH AVENUE BRIDGE RENEWAL PROJECT (CABR)

ARCHITECTURE, LANDSCAPE ARCHITECTURE AND URBAN DESIGN
30% CONCEPT DESIGN REPORT

Prepared for :

Australian Government
National Capital Authority

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On behalf of :

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Member of the Surbana Jurong Group

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INTRODUCTION

1.1 Executive summary

This report presents the design process and 30% architecture, landscape architecture and urban design option for the Commonwealth Avenue Bridge Renewal (CABR) Project, herein referred to as the Project, and is to be read in conjunction with the main report and the Design Options report.

This report provides a comprehensive review of the Project objectives, current context and future conditions, guiding to propose a vision, design objectives and principles which frame the design development. Due to the complexity of the Project, this report has identified the components of the Project to facilitate the readability of the proposal. The combination of all the components identified and described in following sections forms the basis of the final proposed concept design.

The report is structured into several sections, as follows:

Section 1: Introduction - Introduces the Project, its aims and objectives, proposes a Project methodology and reviews relevant policies and supporting documents.

Section 2: Site analysis and context - Offers a brief overview of the planning and policy frameworks relevant to the Project, provides physical analysis of the site at both a broader urban and detailed scale and analyses the active transport routes across the Project site, summarising key insights, site constraints and challenges.

Section 3: Design framework - Provides an overview of the Project vision, objectives and comprehensive design principles developed collaboratively from a multi-disciplinary approach.

Section 4: Design process - Identifies Project components and proposes design options for each component, including discussion on the benefits of each approach.

Section 5: Preferred options design development - describes the design development of the preferred options carried out up to the 30% Detailed Design phase of the project.

The 30% design solution has been achieved through an iterative process of options analysis with key presentations to the National Capital Authority along the way to ensure a design solution that aligns with the key client objectives and project requirements.

1.2 Key project requirements

The Project outlines the design process and 30% concept design solution for the renewal of the Commonwealth Avenue Bridge to widen and strengthen the existing Bridge, upgrade vehicle and pedestrian safety barriers and accommodate improved shared path connections to and from the bridge.

1.2.1 Project aim

The Commonwealth Avenue Bridge Renewal Project will:

- Increase the load-bearing capacity of the Bridge to T44 Bridge loading requirements to meet current and forecast traffic load demands, and to extend the Bridge asset and functional design life (by at least 50 years) and to match the load rating of the road network surrounding the Bridge;
- Widen the shared pedestrian and cycleway paths on both sides of the Bridge to improve safety and comply with Austroads guidelines;
- Replace all barriers on both Bridge spans to meet code requirements and improve safety for all users of the Bridge including consideration of integrated lighting into proposed barrier solutions; and
- Make improvements to the Bridge approach ramps to provide better access to the Bridge for all users and to better integrate with the wider shared path network.

Figure 1: The Bridge was constructed in early 1960s

1.2.2 Key Project objectives

Key Project objectives identified in the Project brief include:

- Renewal of the existing Bridge to cater for current and future traffic loads;
- Ensuring the Project is effectively coordinated and developed with consideration to other strategic Projects in the corridor;
- Meeting the business needs of the Australian Government for the delivery of NCA functions;
- Delivering the best value to the Australian Government for its investment over the asset's whole of life;
- Delivering in accordance with Australian Standards; and
- Ensuring full compliance with relevant Australian government legislation, policies and procedures.

1.2.3 Key design requirements

Key design elements identified in the Project brief include:

- Strengthen the Bridge to accommodate T44 loads to match the load rating of the feeder road network;
- Widen the existing road carriageway to 10.7 metres (comprising two 3.7-metre- wide outside traffic lanes and a 3.3-metre-wide centre traffic lane);
- Widen the shared pedestrian and cycle paths by 2.6 metres from 2.4 metres to 5 metres clear width, consistent with Austroads standards;
- Implement medium performance, low transmitted force barriers, with a design that has negated the need for additional strengthening of the carriageways;
- Upgrade access pathways to comply with the requirements of the DD Act and to integrate into existing path and road networks;
- Upgrade and adjustment of the existing drainage, lighting and utility services that also consider future proofing of a light rail corridor and infrastructure impacts;
- Prepare heritage and urban designs sympathetic to the existing Bridge and urban and landscape design; and
- Prepare temporary works designs that consider traffic management and the minimisation of disruption to users, environmental management, safety during construction, integrity of the existing structure, construction staging impacts and visual amenity impacts during construction.

1.3 Methodology

The Commonwealth Avenue Bridge is a core component of the Parliamentary Triangle and a key landmark in Walter Burley Griffin's plan for Canberra, therefore the Project site has considerable cultural and heritage value. In congruence with the site's context, the Project has a strong commitment to design excellence and a series of design options have been developed through collaboration and consultation with a multi-disciplinary team, including:

- External technical advisers:
  - **SMEC**: road and Bridge/structural design, engineering technical requirements and Project safety risk register (lead)
  - **LAS**: lighting design consultants
  - **Spackman Mossop Michaels**: landscape architecture, active transport and urban design specialist
  - **Tonkin Zulaikha Greer**: architecture and heritage specialist.
- NCA internal stakeholders included:
  - Infrastructure and Transport
  - Planning & Heritage
- Australian Public stakeholders included:
  - Australian Capital Territory Government (ACT)
  - ACT Parliamentary Works Committee (PWC)
- Key stakeholders included.
  - Pedal Power ACT

Project management methodology

The methodology for developing the Project design has involved the following steps (refer to Figure 2):

- Review previous work and identify statutory frameworks
- Explore opportunities and challenges and identify a vision, objectives and principles to guide the design proposal
- Prepare and present options and assess those in light of the identified principles
- Select a preferred option and develop the 30% design
- Present documentation for Parliamentary Works Committee (PWC) Referral and Parliamentary and EPBC approvals.

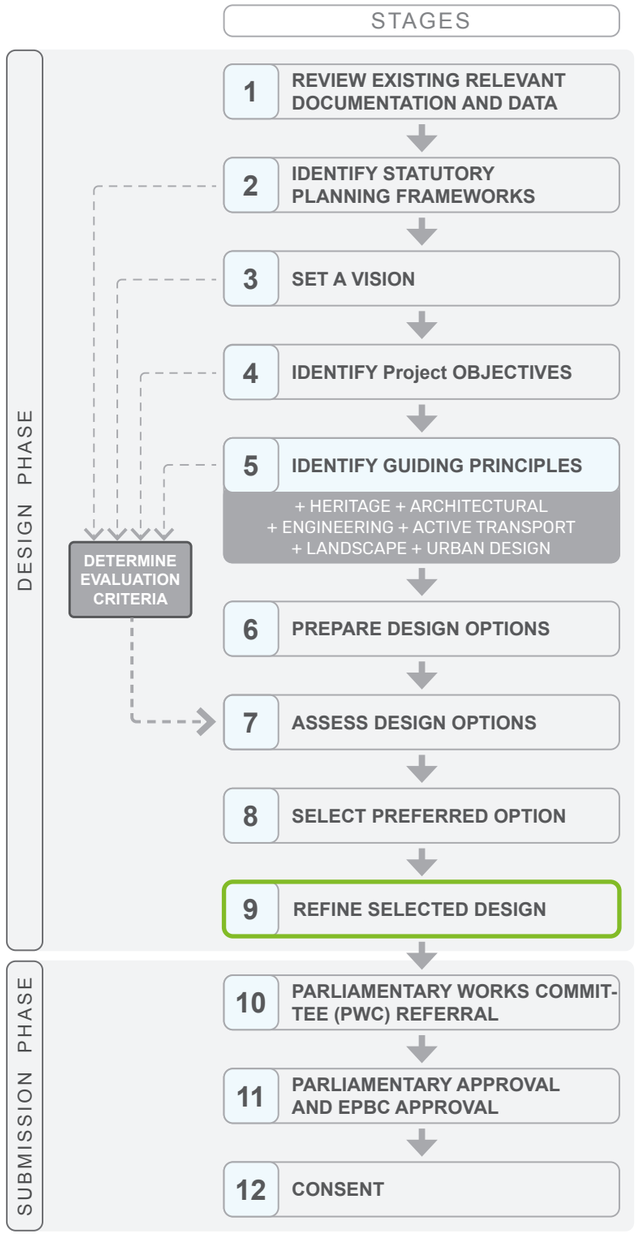


Figure 2: Project management methodology indicating current phase of the project

1.4 Relevant planning policies and supporting documents

A number of existing urban planning and design frameworks are of relevance at this stage. The ACT Government, National Capital Authority (NCA) and Austroads have produced a comprehensive range of policies and guidelines aimed at achieving high quality design outcomes.

In addition, several studies of Commonwealth Avenue Bridge have also been previously prepared by specialist consultants. The design principles and options proposed in this report have been developed to align with or build upon these existing documents, including, but not limited to:

National Policies

- The National Cycling Strategy
- The National Road Safety Strategy
- The National Disability Strategy

ACT Government/NCA Policies

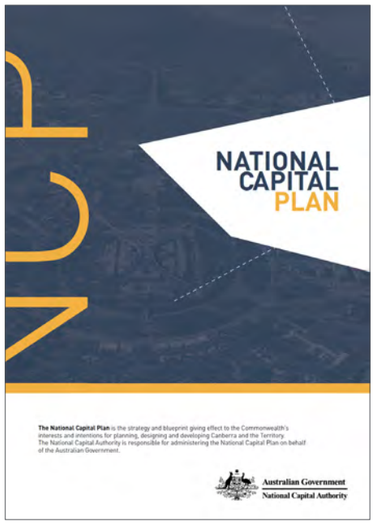
- National Capital Plan (NCA, 2021 Revision)
- ACT Transport Strategy 2020 (ACT Government, 2020)
- Kings and Commonwealth Avenue Draft Design Strategy (NCA, 2017)
- NCA Design Quality Manual (NCA, 2012)
- NCA Outdoor Lighting Policy (NCA, 2012)
- Guidelines for Commemorative Works in the National Capital (NCA, 2002)

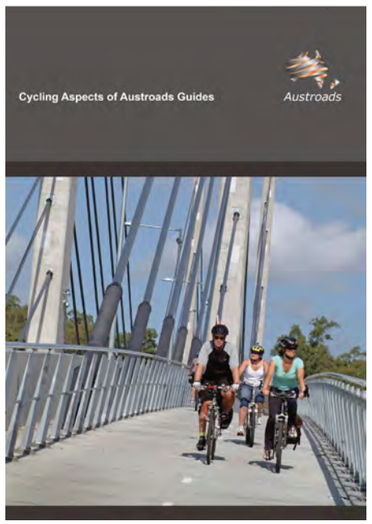
Heritage Management Plans

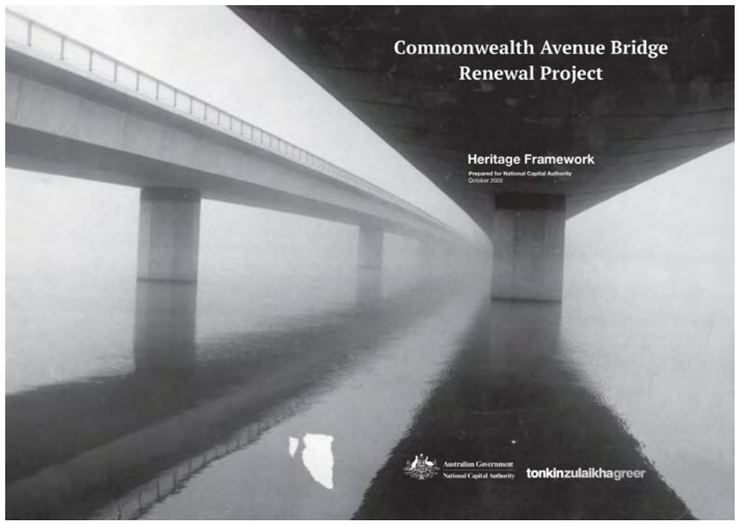
- Commonwealth Avenue Bridge Renewal Project - Heritage Framework (Tonkin Zulaikha Greer, 2022)

Other Relevant Studies and Guidelines

- Commonwealth Avenue Bridges Options Study (Oxigen, 2018)
- Austroads
- Australian Standards







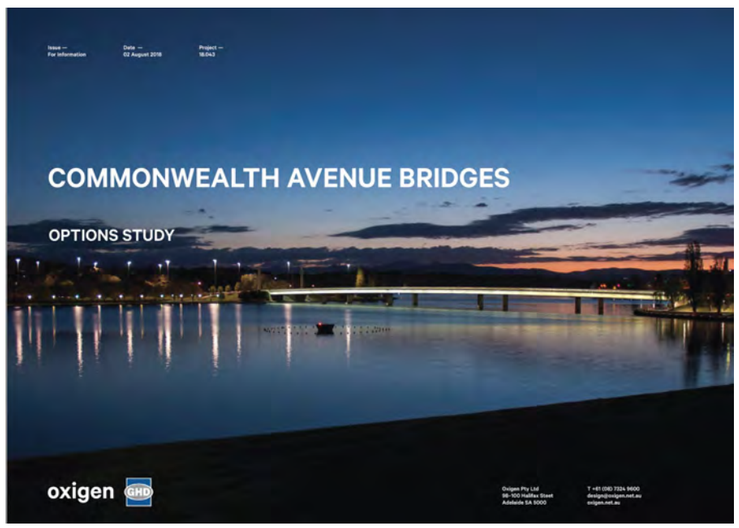


Figure 3: A selection of relevant policies, guidelines and studies

2.

SITE AND CONTEXT ANALYSIS

2.1 Urban planning context

This section provides valuable information to understand the context where the Commonwealth Avenue Bridge sits on and has informed the design process across different stages of the project.

National Capital Plan

The National Capital Plan (NCP) is an overarching statutory document that governs the planning and design of urban space within Canberra. The NCP defines Designated Areas and Precincts with special character along with their corresponding planning objectives and conditions.

Within the NCP, the Parliamentary Precinct (Figure 4) includes the eastern side of Commonwealth Avenue, south of the lake. The entire length of Commonwealth Avenue is also deemed a Main Avenue by the NCP (Figure 5) and forms the western axis of the National Triangle, arising from Walter Burley Griffin's formal plan for Canberra. As such, high standards of design quality are required to reinforce the importance and significance of this avenue.

Kings and Commonwealth Avenues Draft Design Strategy

Commonwealth Avenue, along with Kings Avenue and Constitution Avenue form the structural axes of the National Triangle around which the city is organised. Over time, the formality and significance of these main avenues has become diluted through inconsistent design approaches and a bias towards supporting vehicular traffic. The Kings and Commonwealth Avenues Draft Design Strategy aims to address this concern and offers a long-term strategy for future development within these avenues.

The document provides a clear vision for the avenues, along with four key design principles as follows:

- A unified expression of the National Triangle
- Effective movement and connections for all
- High quality urban streetscapes, befitting their status and use
- A robust landscape character that is consistent and sustainable.

In addition, a series of design templates have been provided that will guide the design of roadways, medians and verges including their spatial arrangements and material treatments. Design guidance has also been provided for park edges, transport crosslinks and the maintenance of views, vistas and axes. These design principles and templates have been incorporated into the Project design principles and objectives.

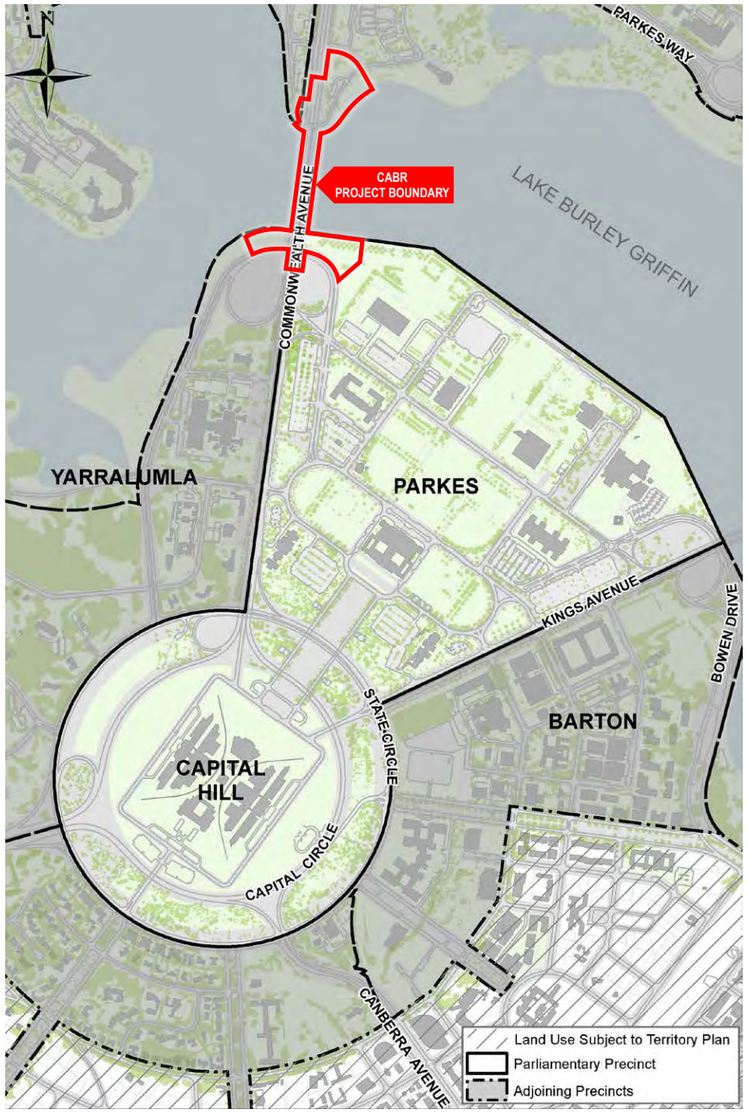


Figure 4: Parliamentary Precinct | Source: National Capital Plan (NCA)

Figure 5: Main Avenues | Source: National Capital Plan (NCA)

2.2 Project site context

Commonwealth Avenue, Kings Avenue and Constitution Avenue form the three major axes of the National Triangle (Figure 6), a core structural component of the Walter Burley Griffin plan for Canberra (Figure 7). Each avenue provides a direct link between key functional zones of Canberra, including Capital Hill (the Parliamentary precinct), City Hill (the Civic precinct) and Russell (the Defence precinct)

Commonwealth Avenue is the western axis of the National Triangle and Commonwealth Avenue Bridge (the Project site) is one of two major crossings over Lake Burley Griffin. Commonwealth Avenue Bridge provides a critical transport link across the lake for motor vehicles, cyclists and pedestrians with connections into the Lake Burley Griffin Circuit and lakeside recreational activities. The Bridge also offers expansive and spectacular views of the city, its heritage and cultural institutions and the surrounding mountain ranges.

Henry Rolland Park and Commonwealth Park straddle the northern approach to the Bridge whilst the southern approach is dominated by the Flynn Drive entry and exit ramps and open space.

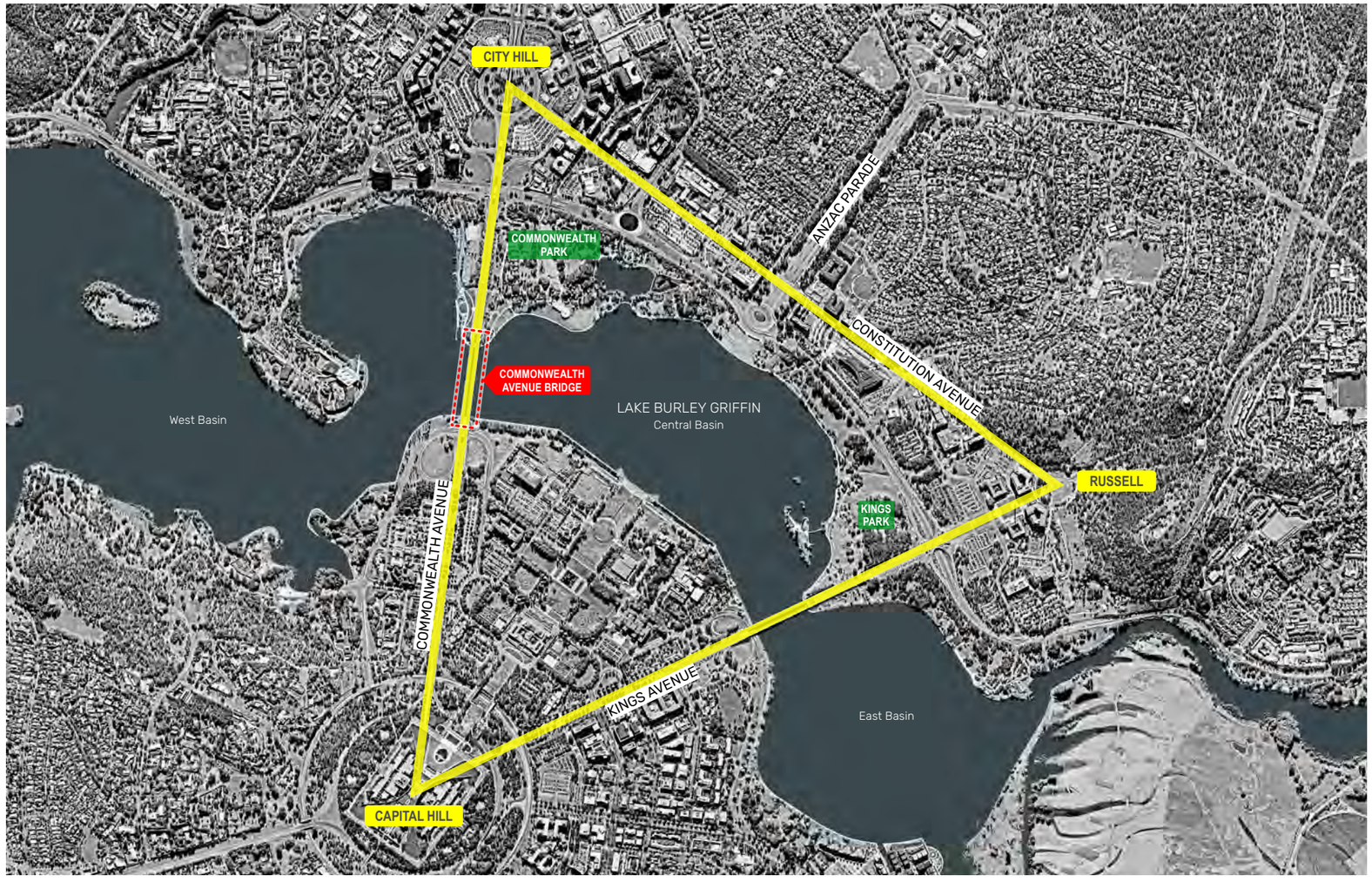


Figure 6: Project site and surrounding context

Figure 7: Griffin plan for Canberra, drawing by Marion Mahony Griffin | Source: National Archives of Australia (NAA: A710, 38)

2.3 Heritage

The Commonwealth Avenue Bridge Renewal (CABR) Project - Heritage Framework (Tonkin Zulaikha Greer, 2022) provides an overview of the heritage status of Commonwealth Avenue Bridge and its surrounds.

The report outlines that Commonwealth Avenue Bridge is not currently listed as an individual heritage item, however it is located within the curtilage of Lake Burley Griffin and Adjacent Lands and forms the western boundary of the Parliament House Vista, both of which are Commonwealth Heritage Listed items. Numerous other heritage items from the National Heritage List and ACT Heritage Register are located within the vicinity of the Bridge including the Australian War Memorial, the High Court of Australia and National Gallery (Figure 8).

The Commonwealth Avenue Bridge has heritage value in its own right. The Heritage Assessment prepared by GML in 2020 concluded that the Bridge meets the criteria for Commonwealth Heritage Listing. According to GML, key factors that promote its heritage value include its significant contribution to "...Canberra's planning history, landscape design and development" and its contribution to rare architecture being an early example of a "precast, post-tensioned, concrete Bridge, embodying multiweb box segments".

The Commonwealth Avenue Bridge and its surrounding setting are rich in cultural significance. In response, the Heritage Framework provides Design Principles which aim to guide the renewal of the Bridge with minimal heritage impacts. The heritage design principles are outlined in Section 3.2.1 and have been adopted within the design options described in Section 4.

For further details on heritage recommendations for the Project, refer to the CABR Project - Heritage Framework document.

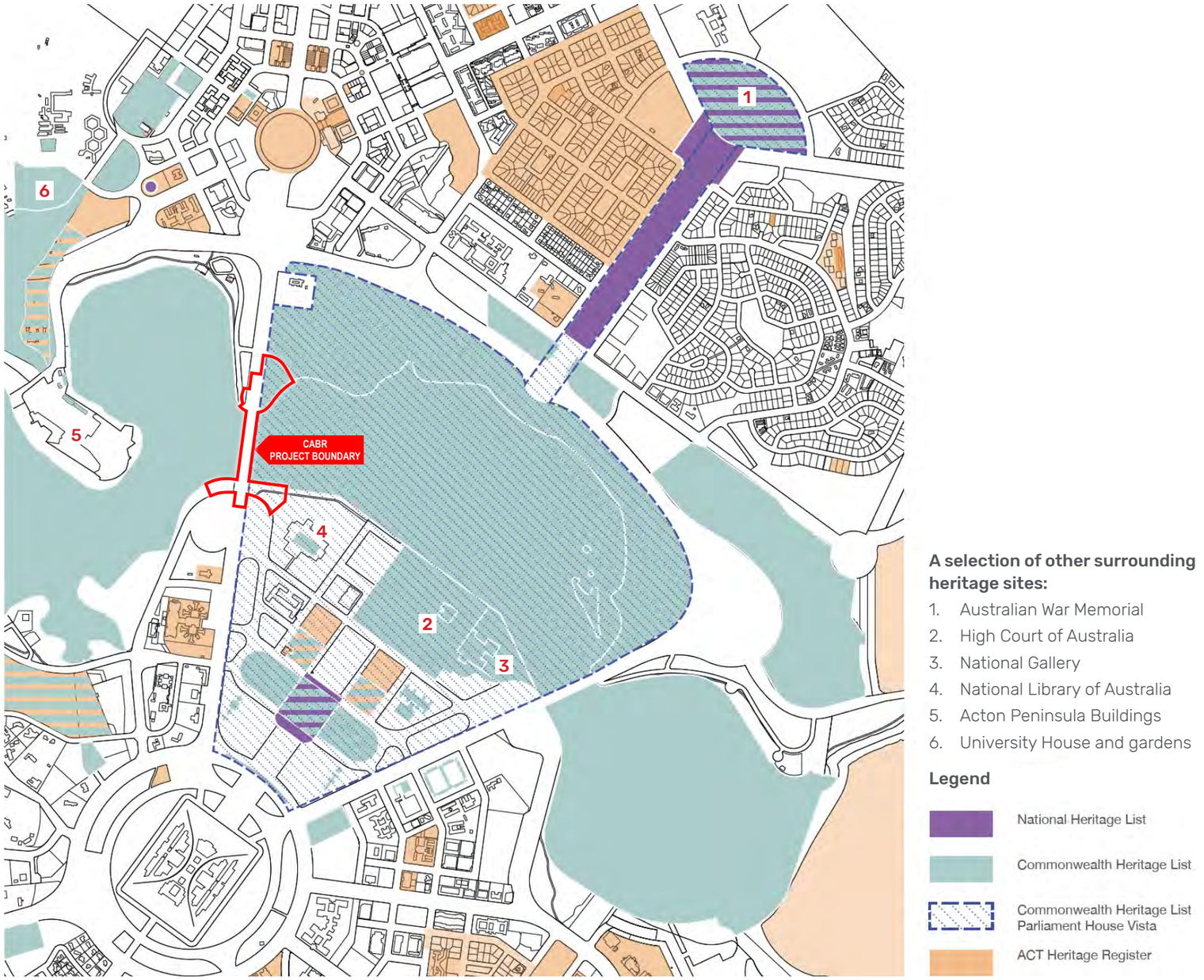


Figure 8: Heritage Listing summary map | Source: CABR Project - Heritage Framework (Tonkin Zulaikha Greer, 2022)

2.4 Canberra landform

2.4.1 Hills, Molonglo Valley

The city of Canberra is centred in the flood plain of the Molonglo River. It is bounded by 3 distinct hills, namely Black Mountain and Mount Ainslie to the north, with Red Hill and Mount Mugga Mugga to the south. The surrounding hills provide a vertical backdrop to the majority of views within central Canberra.

Lake Burley Griffin sits at approximately 556m (AHD). Areas around the lake are relatively flat with a mildly undulating form. Elevations gradually increase to around 750m near Red Hill in the south. In the north, elevations rise to around 840m near Mount Ainslie and 810m at Black Mountain.

2.4.2 Lake Burley Griffin

The Molonglo River flows through Canberra, travelling from east to west. The damming of the river in 1963 through the implementation of Scrivener Dam enabled the formation of Lake Burley Griffin. Water levels in the lake are managed via the dam and this has significantly reduced flooding risk within central Canberra. The lake is around 9kms long and has an average depth of 4m.

The lake is comprised of a series of basins, including the Central Basin, West Basin, East Basin, West Lake, Tarcoola Reach and Yarramundi Reach.

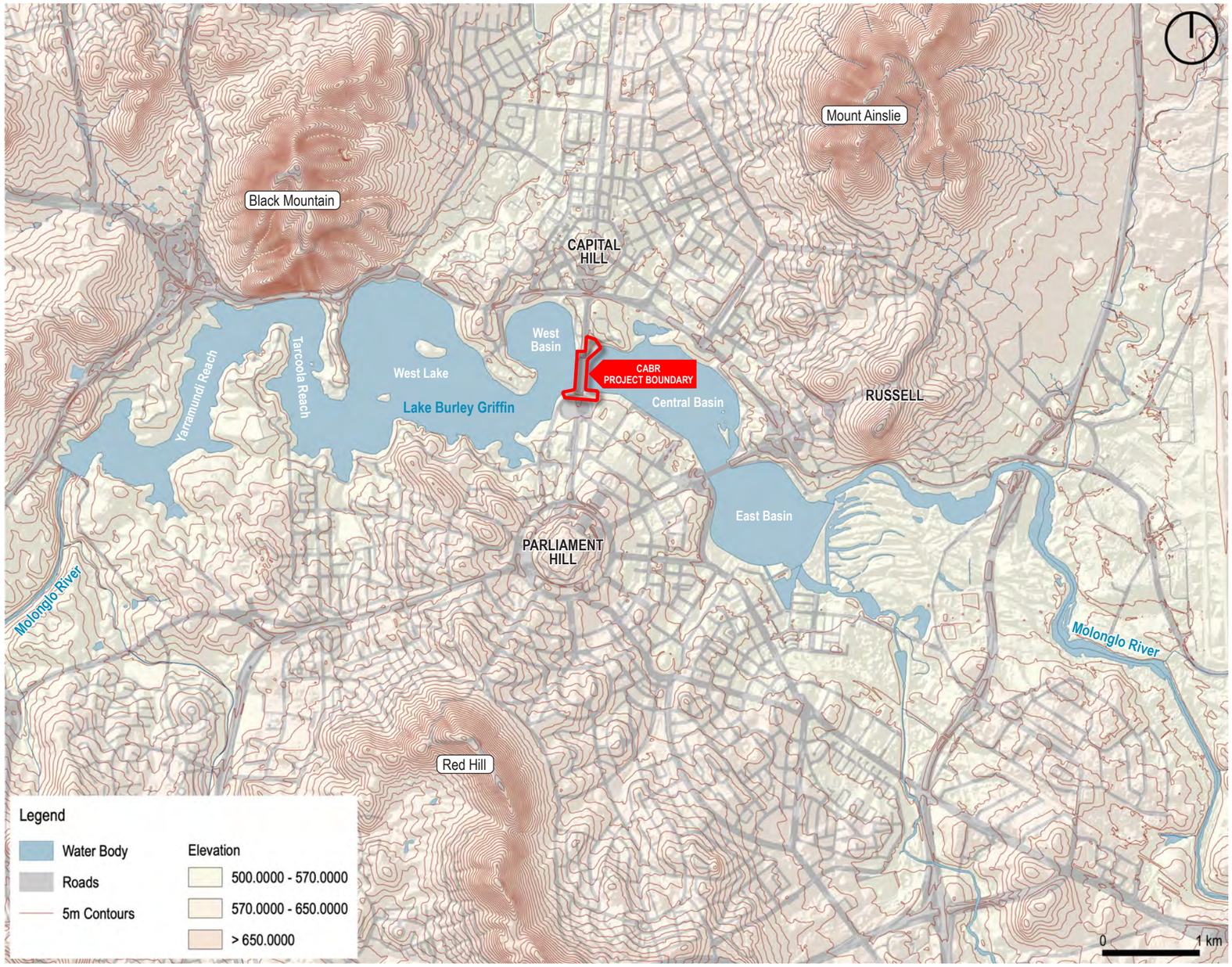


Figure 9: Canberra landform

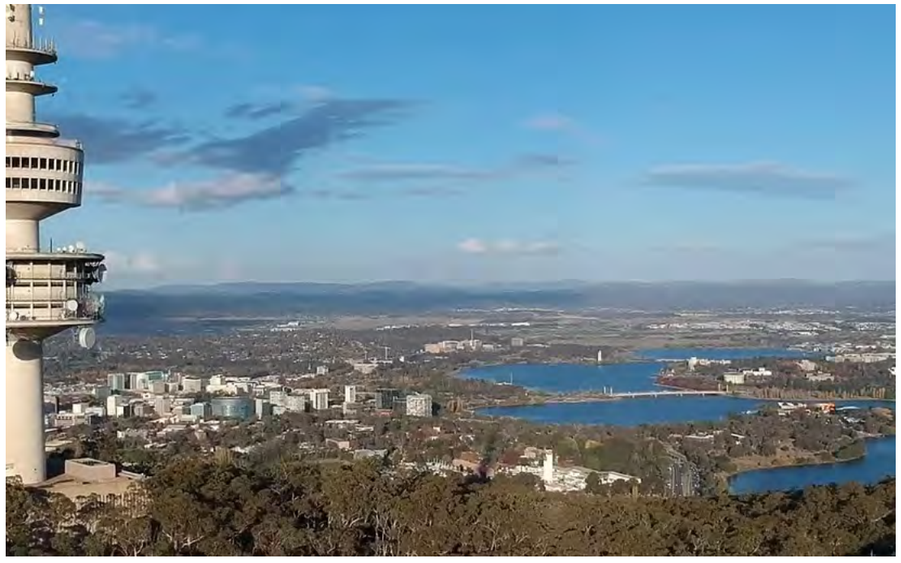


Figure 10: Views of Canberra City from Black Mountain | Source: A Hikers Friend, Photo: Hans-Joerg Kraus

Figure 11: Views to Parliament Hill from the Mount Ainslie lookout | Source: Canberra Excursions

Figure 12: Lake Burley Griffin, Commonwealth Avenue Bridge and Black Mountain (background) | Source: ABC News

Figure 13: The Captain Cook Memorial Jet runs daily | Source: The Canberra Times

2.5 Canberra open space

2.5.1 The Lake Burley Griffin parklands

Lake Burley Griffin and the surrounding parklands sit at the heart of the National Capital, offering nature based recreational activities and stunning vistas of the city and beyond.

The numerous parklands offer activities such as walking and cycling circuits, picnic and barbeque facilities. Activities such as swimming, sailing, kayaking and fishing are also popular on the Lake.

The parklands immediately adjacent to the Commonwealth Avenue Bridge are Henry Rolland Park and Commonwealth Park in the north, offering views across the water to Parliament House and the National Library. Stirling Park, Canberra Nara Peace Park and the Patrick White Lawns provide walkways and recreational spaces on the southern side of the Bridge.

2.5.2 Cultural plantings

The English horticulturalist Charles Weston devised the landscape vision for Canberra, which included the National Triangle and main avenues such as Commonwealth Avenue. Between 1913 and 1926, Weston planted out over 2 million trees, adopting a largely exotic palette with some indigenous species. The species palette was chosen to provide formality and seasonal colour, but also to provide shade, protect against the cold winters and minimise soil erosion and the hot dusty winds of summer.

Whilst this vision was achieved in some areas, it has not been adopted consistently through the National Triangle and the Main Avenues, and therefore is a key focus within the Kings & Commonwealth Avenues Draft Design Strategy prepared by the NCA.

Cultural plantings dominate the inner city landscape and parklands. In contrast, intact indigenous vegetation communities are no longer present within the central areas of Canberra and can only be found in the surrounding hills and nature reserves, such as Mount Ainslie Nature Reserve and Red Hill Nature Reserve.

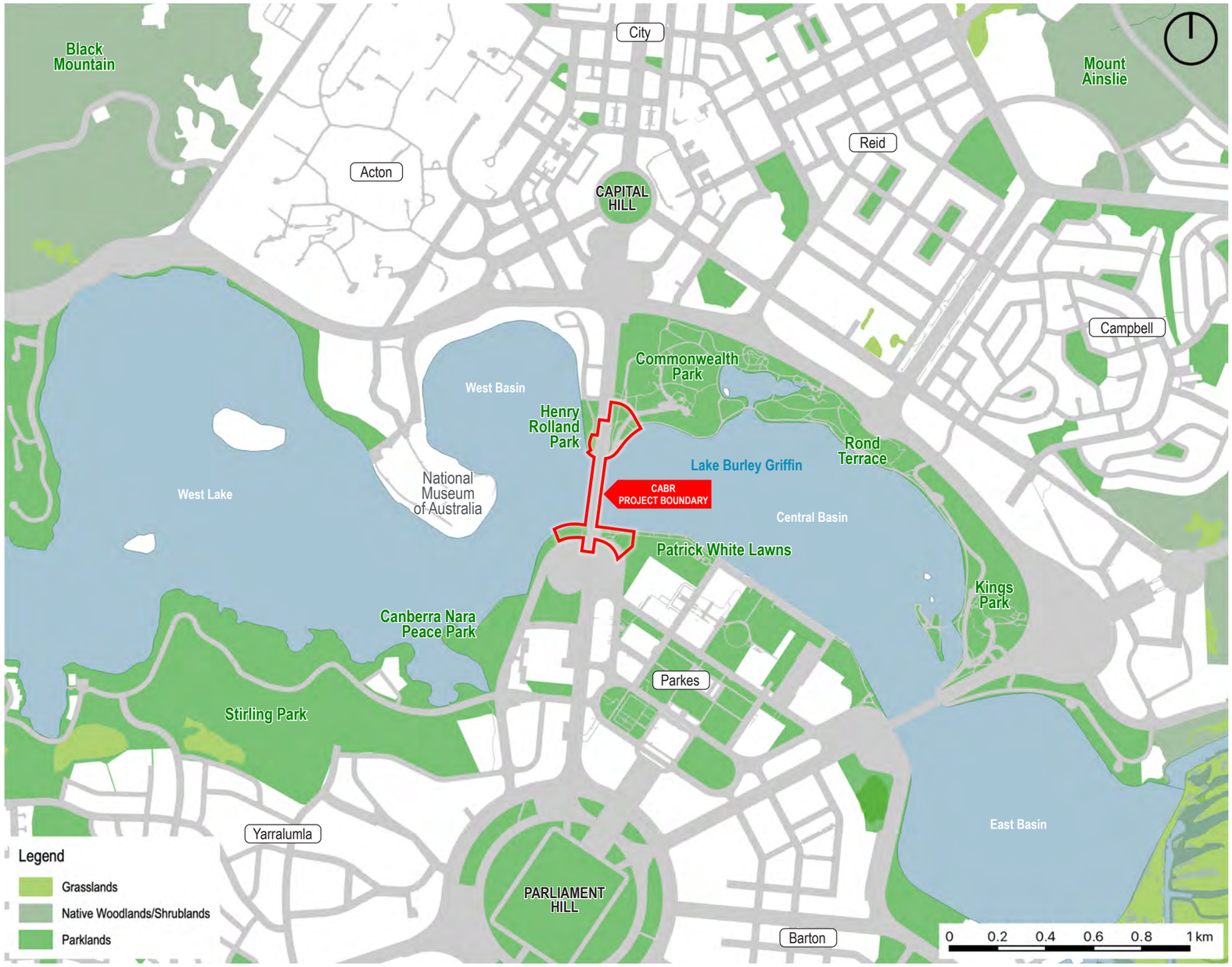


Figure 14: Commonwealth Avenue Bridge nestled amongst recreational parklands

Figure 15: Henry Rolland Park on the north-western side of the Bridge

Figure 16: Commonwealth Park on the north-eastern side of the Bridge

Figure 17: Parklands on the south-western side of the Bridge

Figure 18: Parklands on the south-eastern side of the Bridge

2.6 Roads & impervious surfaces

The road network is a prominent feature within the Canberra city landscape. The three main avenues forming the National Triangle and major connecting roads such as Parkes Way Carriageways incorporate dual carriageways, occupying wide expanses of the ground plane.

Sweeping and circular access ramps onto Commonwealth Avenue such as Flynn Drive also occupy large areas of land which could otherwise provide additional amenity or programmed activities for the community.

Figure 19: Commonwealth Avenue facing north to City Hill

Figure 20: Commonwealth Avenue facing south to Parliament House

Figure 21: Intersection with Flynn Drive view from King Edward Terrace | Source: Google Earth

Figure 22: Open space occupied by road infrastructure

2.7 Cultural and civic places

Many of Canberra's cultural institutions and places reside within or around the National Triangle and Lake Burley Griffin. Several are within walking distance from Commonwealth Avenue Bridge and can be viewed from the Bridge,

Figure 23: The National Carillon on Lake Burley Griffin | Source: Australian Traveller

Figure 24: National Museum of Australia on western side of the Bridge | Source: National Museum of Australia

Figure 25: City Hill | Source: Parks ACT

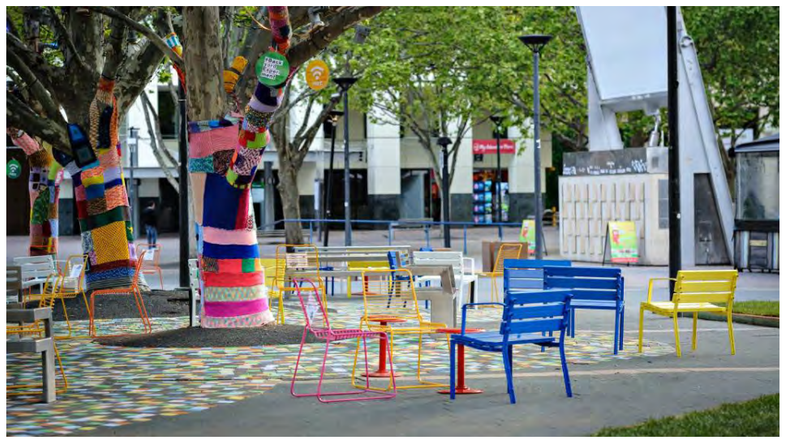


Figure 26: Garema Place civic space north of Commonwealth Avenue Bridge | Source: The Canberra Times

Figure 27: The National Library in autumn | Source: The Canberra Times

Figure 28: Annual Floriade event in Commonwealth Park | Source: ACT Government

2.8 Key views and vistas - to Bridge

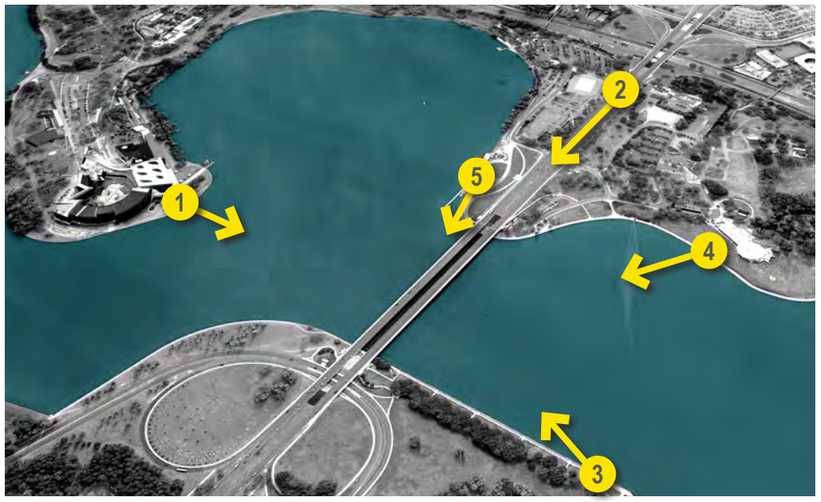


Figure 29: Key views and vistas towards Commonwealth Avenue Bridge

2.9 Key views and vistas - from Bridge

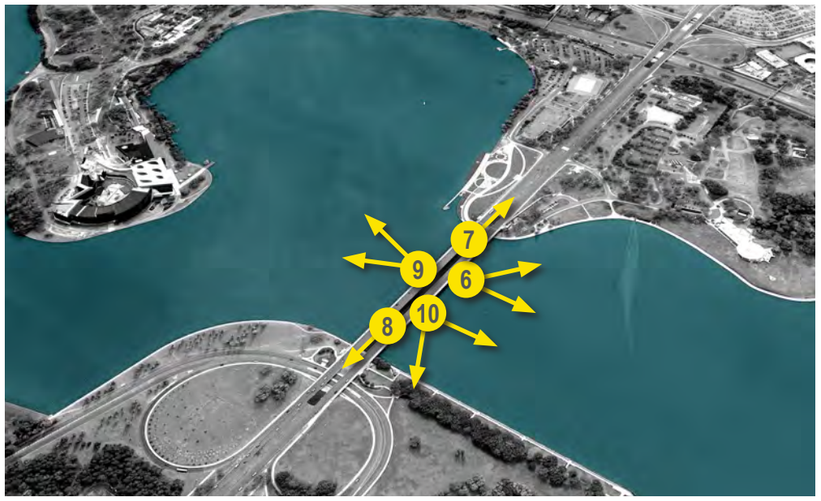


Figure 30: Key views and vistas from Commonwealth Avenue Bridge

2.10 Movement and circulation

2.10.1 Public transport

Buses

Five rapid bus routes (R4, R5, R6, R7 and R10) traverse Commonwealth Avenue Bridge (**Figure 31**) and connect areas south of Lake Burley Griffin to the Parliamentary Precinct and the Central Precincts, terminating at City Interchange (R4 excepted). City Interchange is a major transfer point between the bus and light rail network and is approximately 2kms north of the Bridge.

The Bridge provides the primary transport route over Lake Burley Griffin and links two major commercial precincts, therefore provides critical infrastructure for the city of Canberra.

The Light Rail - Canberra Metro

Construction of Canberra's Light Rail network is progressing and offers a zero-emissions public transport mode that creates a north-south travel spine through the city. Stage 1 of the light rail network is now in operation and provides connectivity between Gungahlin and Canberra's City centre. Stage 2 will provide a link from the City to Woden, requiring new light rail infrastructure that travels over Lake Burley Griffin along Commonwealth Avenue.

The *Commonwealth Avenue Bridges Options Study (Oxigen, 2018)* provides several alternatives that accommodate the light rail between the existing Commonwealth Avenue Bridges, either as a new standalone Bridge or integrated into the existing Bridge infrastructure. In either case, consideration should be given to the incorporation of the light rail into the transport ecosystem and the impacts this may have on movement, both on, and around the Bridge. At the time of writing this report, detailed Stage 2 Light rail plans were not available for analysis, however it is anticipated that they may be available during subsequent stages of the concept design.

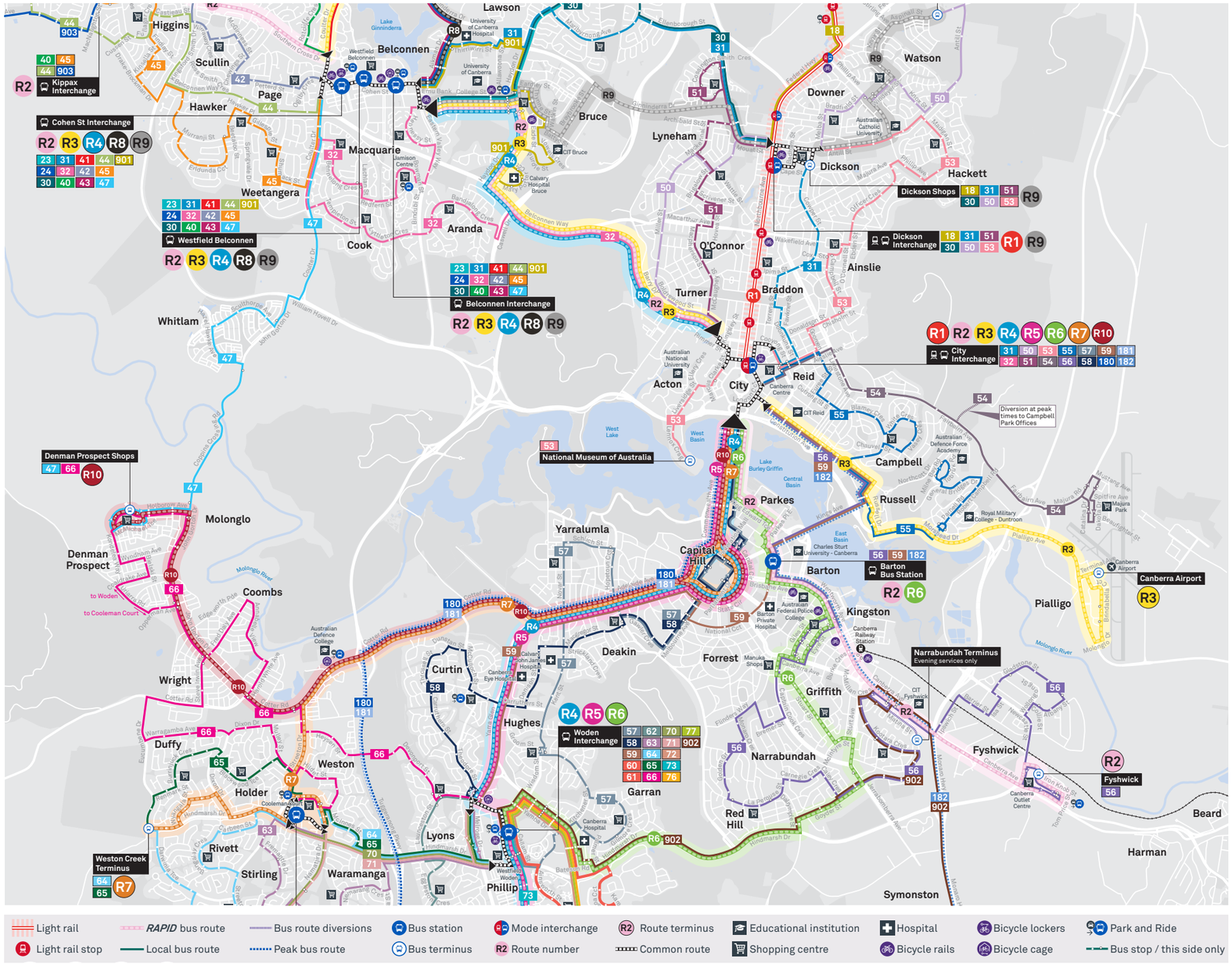


Figure 31: Extract from Transport Canberra Network Map | Source: ACT Government

2.10.2 Active transport

A key priority within the ACT Transport Strategy 2020 is to support and enable "Walkable Places", where pedestrians will have increased priority in the streetscape. This will be achieved through improved footpaths and shared paths, additional seating for rest along the journey, additional street tree canopy for shade and improved safety elements, particularly for crossings and intersections.

Canberra also has an extensive network of cycling paths, however they don't always provide connectivity to key destinations that commuters wish to travel to. In response, the ACT Government aims to deliver additional cycle routes that support connectivity, and to provide safer off road cycle paths, whilst also enhancing wayfinding and signage.

Commonwealth Avenue including Commonwealth Avenue Bridge (**Figure 31**) form part of a principle cycle route (C4) between the City and Tuggeranong via Woden. This route also provides connection into the Lake Burley Griffin Circuit (LBG), a major recreational walking and cycling circuit in the heart of the city. The C4 route also joins with the City - Queanbeyan (C2) route in the east. As such, the safety and accessibility of shared paths on and surrounding the Bridge are critically important for the community.

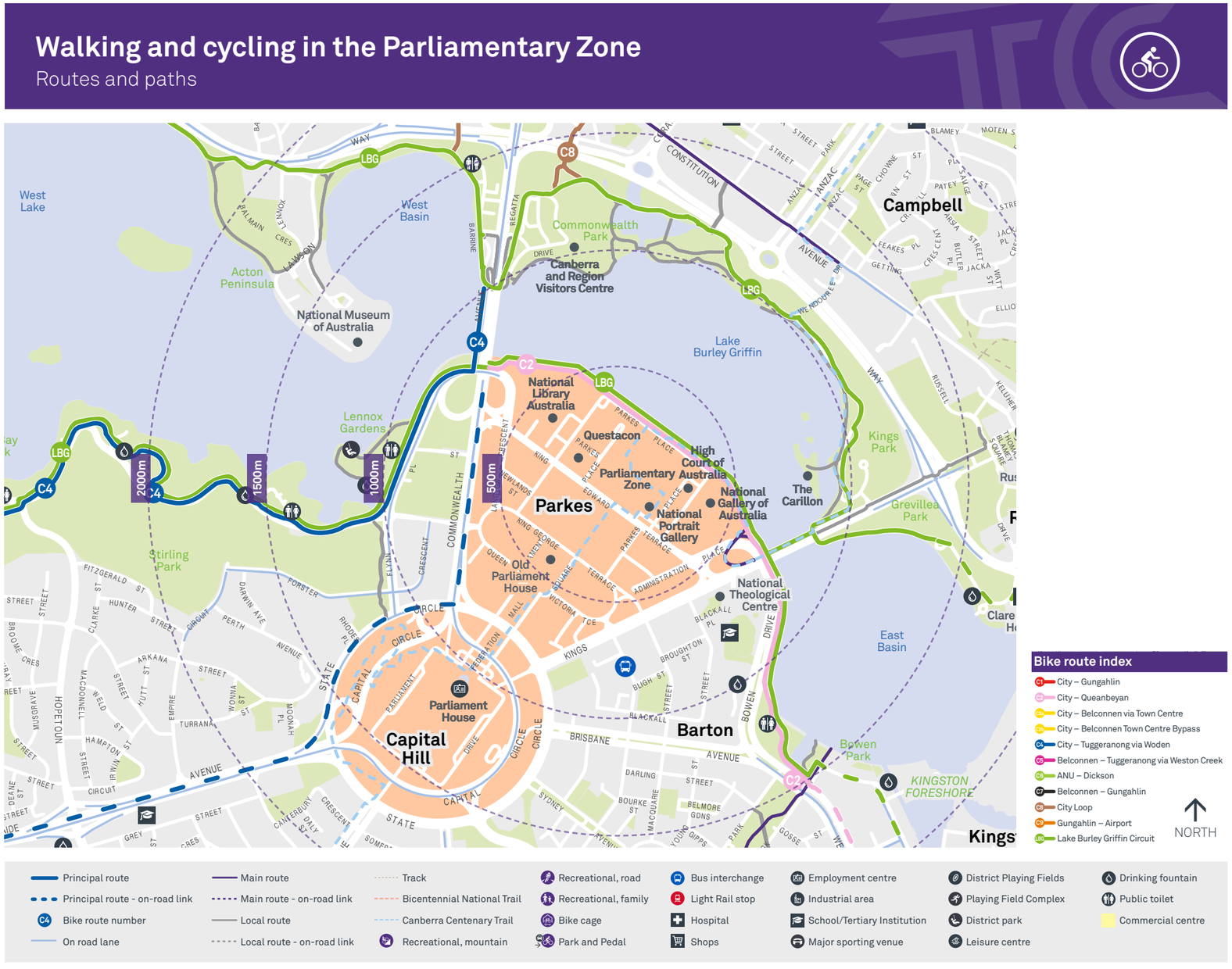


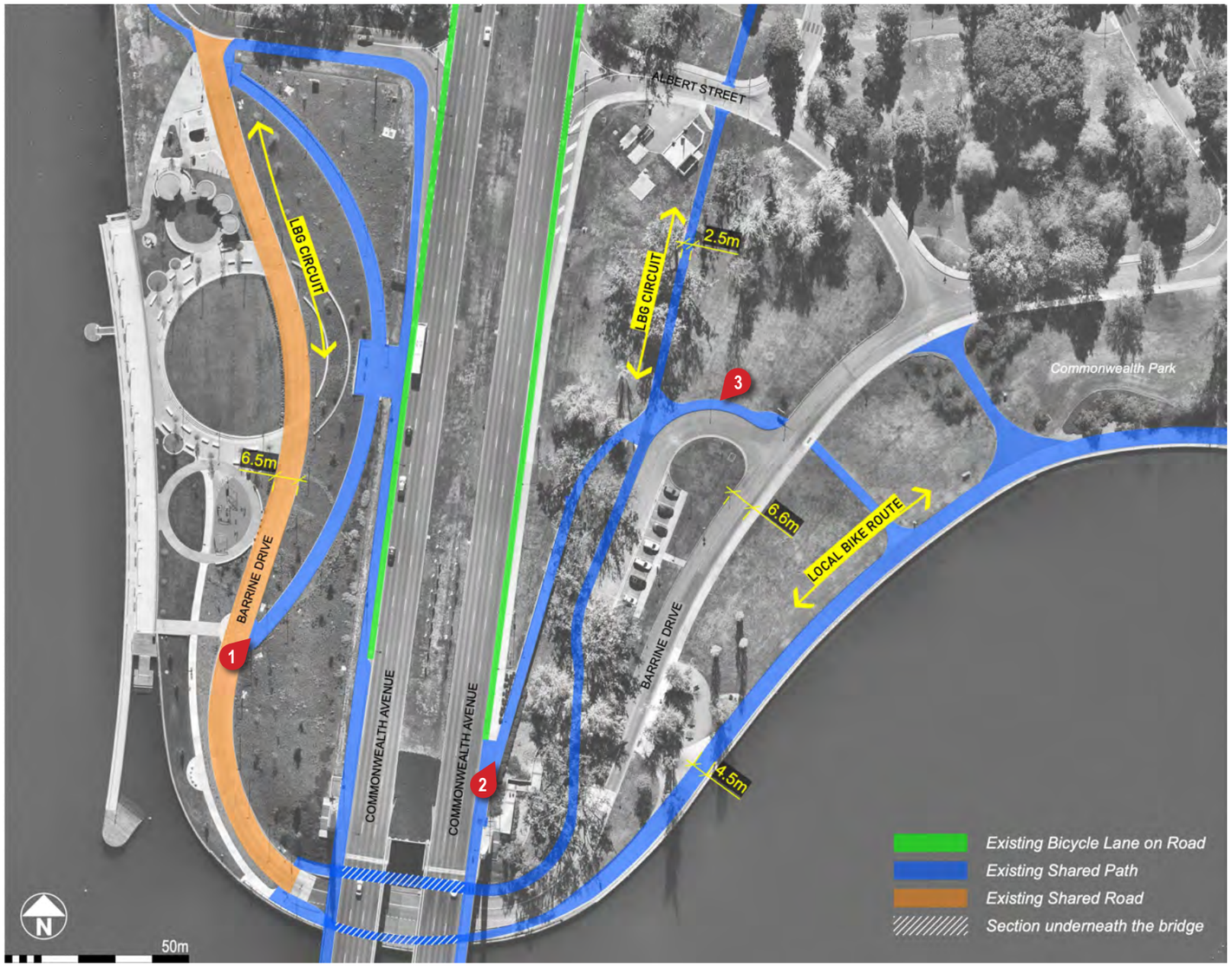
Figure 32: Extract of Canberra cycle network map in relation to Commonwealth Avenue | Source: ACT Government

2.10.3 Bridge approaches on the northern foreshore

The Lake Burley Griffin Circuit and Local Bike Routes connect with the northern approaches to the Commonwealth Avenue Bridge.

Existing Bicycle Lanes on the northbound and southbound carriageways intersect with shared paths on the bridge near the abutments, creating pinch points where collisions could occur.

For further details on northern foreshore design options, refer to Section 4.4.



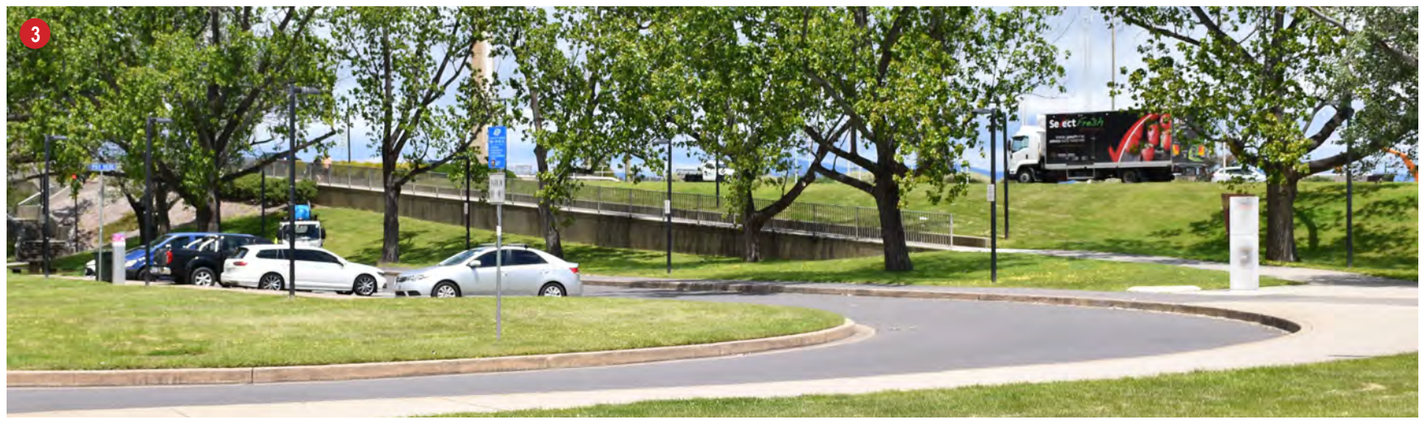


Figure 33: Movement and circulation on the northern side of the Bridge

2.10.4 Bridge approaches on the southern foreshore

On the southern side of the Bridges, safe and efficient cycling connections are required between the City-Queanbeyan Route and the City-Tuggeranong Route, which also traverse part of the LBG Circuit. Similarly, safe and accessible entry/exit ramps are required for pedestrians to move between the Bridge and the southern foreshore areas.

For further details on southern foreshore design options, refer to **Section 4.4.**

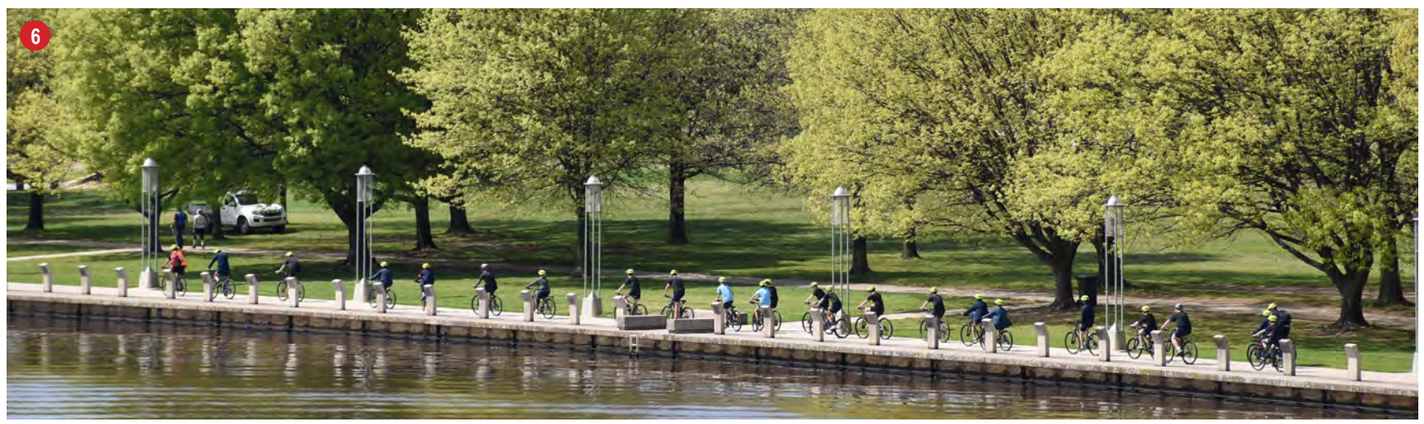


Figure 34: Movement and circulation on the southern side of the Bridge

3.

DESIGN FRAMEWORK AND STRATEGY

3.1 INTRODUCTION

This report builds upon the 'Architecture, Landscape Architecture and Urban Design Options Report' that studied a range of different options for each component of the Project and provides comprehensive analysis of the presented options to facilitate further selection. Preferred options were selected for each component to allow design development to progress into the current 30% Concept Design stage of the project. The design presented in this report is based on the preferred options selected and informed by key assumptions described below.

3.1.1 Key assumptions

Key assumptions which underpin the design:

- As per the design brief, the bridge extension is to be a cantilevered solution that extends off the existing bridge structure
- Future light rail is outside of the scope of this report. It is assumed to be accommodated on a new bridge structure between the two Commonwealth Avenue bridges
- Commonwealth Avenue is not on the Heavy Vehicle network
- Existing concrete pylons are to remain due to heritage and cost considerations
- Speed limits across the Commonwealth Avenue bridge are to be lowered to 60km/hr
- Bridge is to be strengthened to T44/L44 loading
- Pole top lighting on the bridge is not desirable due, to heritage and structural considerations
- Accessible paths of travel is not required on all four pedestrian approaches from lakeside to the bridge level. Only the southeast and northeast have been provided allowing accessible connections along the existing Lake Loop
- Pedestrian and cyclist pathways to follow Austroad guidelines
- Improving pedestrian/cyclist safety and amenity are to be the leading consideration when upgrading pathways.

3.1.2 Vision

The highlighted vision that has been driven the design process during previous stages of the project still remains as follows:

We see the Commonwealth Avenue Bridge not only as an elegant piece of infrastructure retaining its function as a critical component of the transport network of Canberra, but also as a core asset to upgrade the site from a motorway environment to a pleasant and enjoyable open civic street character.

3.2 Design principles

Project design principles complement the above described objectives and have guided the development of the design options to ensure they fulfil the Project objectives and overall Project vision. These guiding principles have been refined utilising an iterative and collaborative process with inputs from all disciplines that provide expertise into this Project, as shown in Figure 35.

The proposed design principles will form the basis of the development of the Bridge renewal Project, including the successful integration of engineering and architectural requirements with the civic and historical context.

The principles are grouped below under the following five headings:

- Heritage context
- Environmental and social sustainability
- Amenity
- Users movement and circulation
- Quality and constructability.

They will be used to develop design proposals and form the basis for evaluating the design options presented in following sections of this report.

Figure 35: An iterative, collaborative, multi-disciplinary development of principles

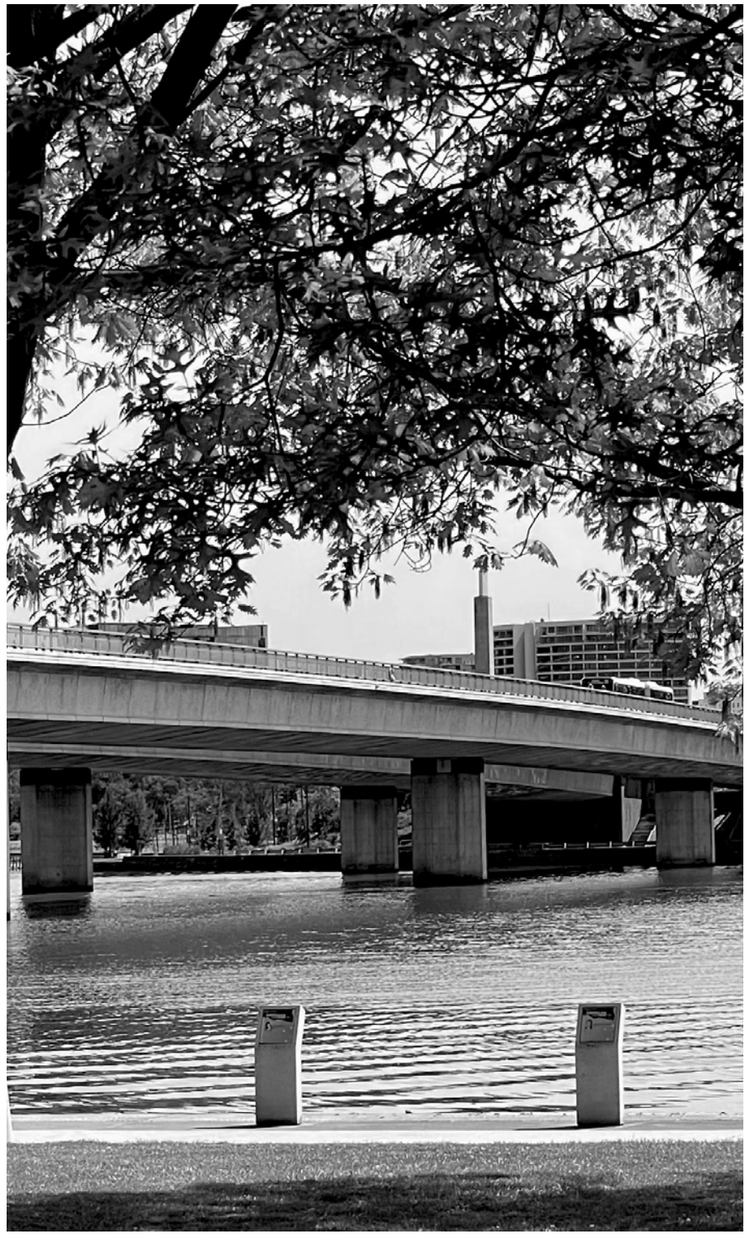


Figure 36: The Bridge from the 'Australian of the Year' walk

3.2.1 Heritage design principles

The CABR Project Heritage Framework (Tonkin Zulaikha Greer, 2022) provides a comprehensive suite of urban design and heritage principles. They constitute Project considerations in respect of the unique character of the site, connections to history and place and the opportunity to deliver best practice urban design and sustainability outcomes.

The CABR Project Heritage Framework outlines the need for the Project to take into account an understanding of the heritage significance of the place and the relative significance of the components of built fabric and their tolerance for change.

An analysis of the site and its context along with the relevant Heritage Listings and Heritage Management Plans leads to the following heritage design principles which would apply to the proposed renewal of the Commonwealth Avenue Bridge. The new elements should not be eye catching, rather sympathetic and compatible, as the Bridge defines the western edge of the Parliament House Vista. New elements should generally defer to the original elements of the Bridge, reading as secondary elements, to minimise heritage impacts:

Character

– Complementary
New elements should be complementary to the original built form.

– Contemporary
New elements should be identifiably new upon closer inspection to avoid confusion between old and new fabric.

– Simple, elegant aesthetic
A simple, elegant aesthetic should be adopted for new elements which complements the original design of the Bridge.

– Horizontal emphasis
New elements should reinforce the horizontal emphasis of the original Bridge when viewed from afar.

– Mirrored pair - singular expression
The existing Bridge comprises a pair of mirror reversed matching elements which read together as one. This should be retained in the design of new elements.

– Simple, transparent balustrades.
The existing balustrades are simple repetitive elements which have a high degree of transparency and read as secondary elements to the primary form of the concrete Bridge. This should be retained in the new design.

– Landscape elements to respond to surrounding context
The landscape design of the approaches should be recessive in respect to the Bridge and the Parliament House Vista.

Siting

– Minimise impacts on views
Any changes to the Bridge and the landscape approaches should be sited to avoid or minimise impacts on key views.

– Connect to surrounding landscape
The landscape approaches should be carefully sited to connect to the surrounding landscape.

Scale

– Bridge edge condition
The new Bridge edge condition should be similar in scale to the existing edge condition, and taper to create similar shadows on the vertical face, to minimise impacts on views.

– Balustrade and crash barrier heights
The height of balustrades and crash barriers should be minimised to minimise visual impacts. Lowering the speed limit would lower the required height of crash barriers. NCA to assess risks associated with alternative options.

Form

– Linear horizontal emphasis
The linear horizontal emphasis of the Bridge should be retained, with integrated lighting in the balustrades.

– Bridge edge condition
The renewed edge condition should be similar to the existing edge condition, with the overall form of Bridge widened.

– Minimise vertical elements
The Bridge pylons should remain the only vertical elements on the Bridge. Vertical light poles should be avoided on the Bridge, and located as far as possible from the pylons if required on the land north and south of the abutments.

– Balustrades and crash barriers
Finer elements such as balustrades and crash barriers should be designed to read as secondary elements to the primary form of the Bridge.

Materials and colour

– Bridge extension
The material of the Bridge extension should be light in colour to respond to the existing white precast with exposed Quartz aggregate.

– Balustrades and crash barriers
The existing balustrades and crash rails should also be light in colour - the existing are white and silver.

– Abutments
The abutments are constructed of precast concrete with dark aggregate and Tarana granite cladding. This should be retained and conserved.21 A similar palette of materials should be used for any alterations.

– Pylons
The existing pylons feature white painted concrete and Tarana granite. This should be retained and conserved.

Detailing

– Simple contemporary detailing
The detailing of architectural elements should be simple and contemporary, and based on an understanding of the original design intent.

– Dialogue between old and new
The detailing of new elements should be based on a clear understanding of the original detailing. Establish a dialogue between the old and the new fabric through detailing.

– Concealed engineering upgrades
Engineering upgrades required for Bridge strengthening should be concealed where possible. Where exposed a simple clean aesthetic should be adopted, which is coordinated with the architectural response.

Figure 37: Bridge character, form, colours, materials and details

3.2.2 Environmental and social sustainability design principles

The design should provide a model public domain and piece of infrastructure that demonstrate the benefits of innovative environmentally sustainable approach and offers flexible spaces to accommodate a wide range of present and future uses and activities.

1. Encouraging more trips to be undertaken by bicycle and walking including local and commuter trips
2. The Project infrastructure itself is to be designed to include best-practice sustainability measures including materials selection, potential water management and low energy consumption
3. Seek to improve the natural landscape through the Project
4. Evaluate economic benefits of increasing cycling and walking trips for health and transport capacity
5. Design to maximise microclimate comfort, reduce urban heat island effect and mitigate climate change risks
6. Provide an inclusive and accessible environment that integrates with the existing fabric
7. Integrate formal and informal environments that reflect the existing landscape character and enhance the existing views from and towards the lake and the Bridge.

3.2.3 Amenity design principles

The design should facilitate day and night activities offering a flexible and diverse choice of entertainment and amenities.

1. Enhance existing amenity for the residents, commuters and visitors
2. Enhance the opportunities for users to appreciate the panoramic land and lake views from the Bridge and adjoining foreshore
3. Respond to the high level of existing public domain amenity around the Bridge and elevate areas of lower amenity to the same high quality
4. Minimise visual and physical clutter
5. Maximise environmental amenity through tree planting, permeable ground and reduce urban heat where possible
6. Minimise net loss of publicly accessible green spaces
7. Utilise landform, structures and furniture as expressions of identity and place and to activate adjoining open spaces.

3.2.4 Movement and circulation design principles

The design should provide an easily accessed destination and thoroughfare where people have priority and a safe and pleasing open civic character is facilitated.

1. Make trips safer and more comfortable for both pedestrians and cyclists
2. Increase using the Bridge viability, accessibility and equity for more pedestrians and riders
3. Make cycling an attractive choice for local and regional trips
4. Support new tourism and visitation opportunities
5. Improve adjacent streets, shared paths, footpaths and cycleways that connect to the Bridge
6. Establish a safe and efficient link to the Bridge and beyond from existing routes around the lake
7. Consider links and relationship to destinations within the broader area
8. Better connect local communities living within the vicinity of either side of the Bridge and increase access to nearby public spaces, events, venues and parks.

3.2.5 Quality and constructability design principles

The CABR Project Heritage Framework provides a comprehensive suite of urban design and heritage principles. They constitute Project considerations in respect of the unique character of the site, connections to history and place and the opportunity to deliver best practice urban design and sustainability outcomes.

1. Consider whole of life – design life, durability and low maintenance
2. Deliver an innovative and highly considered design solution that suits the location and context
3. Design to consider an architectural and aesthetic response that is sensitive to and respectful of the heritage values, architecture and urban scale of the site
4. Ensure structural engineering is refined and articulate and that the resultant built form is discrete, elegant, consistent and minimises impacts to existing views.
5. Ensure that the design produces value for money and fits into the Project budget



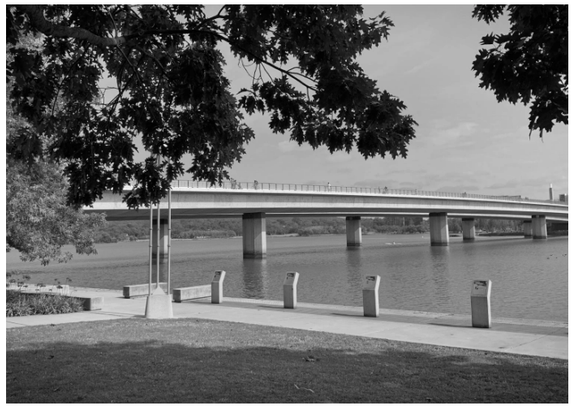



Figure 38: Design principle themes

3.3 Design background

Prior to this report being written, the NCA has undertaken a number of investigations into the condition of Commonwealth Avenue Bridge due to the age of the Bridge, evolving Bridge design standards and growing demand for a variety of different modes of transport.

An Initial Business Case was prepared in 2018 and more recently, a Detailed Business Case was prepared in 2020 that sought to provide design requirements of the bridge strengthening and widening and other requirements to be addressed that would bring the Bridge up to the necessary engineering standards, whilst improving safety and capacity for all modes of transport.

Figure 39 below shows the three main components of the Project.

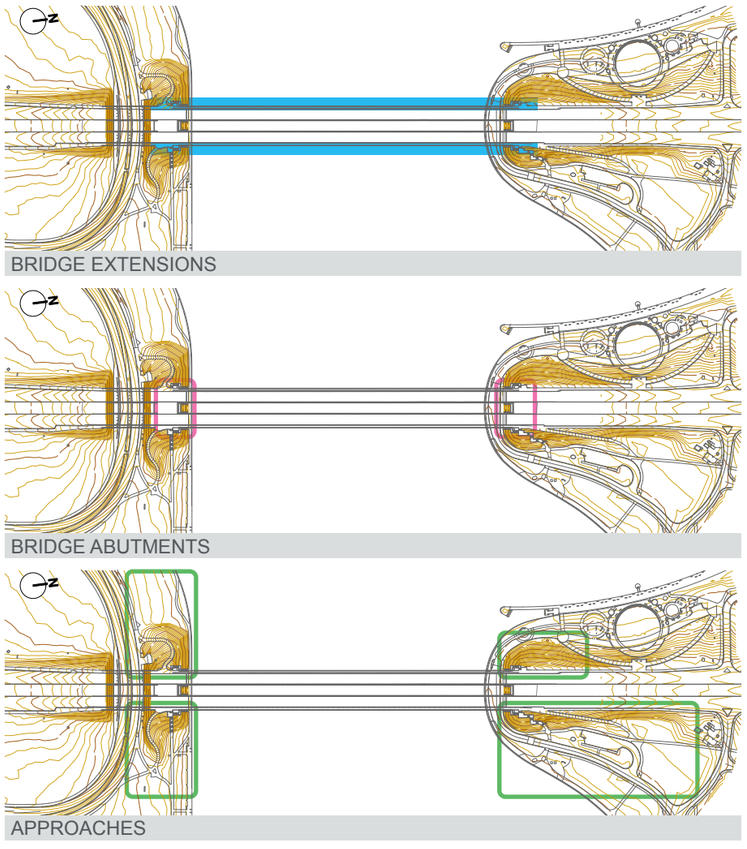


Figure 39: Three main components of the Project

3.4 Design considerations

The development and evaluation of design options for the Project has considered a range of architectural, urban design and landscape factors. These are outlined below.

Motor vehicle movement

- Clear sightlines and orientation
- Moderate to slow design speed environment
- Reduce potential for conflict
- Create a calm and enjoyable journey
- Facilitate the appreciation of the surrounding landscape

Pedestrian and cyclist safety, ease of movement and amenity

- Direct routes
- Space to rest/take in the view
- Reduce conflict/pinch points/blind spots
- CPTED requirements

Catering for the range of users and their different requirements

- Disability access
- Commuters
- Tourists
- Recreational users

Bridge Setting and Character

- Horizontal and low structure in an open landscape
- Slim lines and simple detailing
- Open/transparent visual quality
- Smooth and curved soffit
- Dense groupings of trees surrounding the Bridge approaches and abutments
- Undulating parkland landscape surrounding the abutments

Architectural and landscape heritage

- Lake Burley Griffin and adjacent lands
- Bridge design integrity
- Views and vistas to and from the Bridge
- Formal avenue experience of Commonwealth Avenue defined by City and Parliament Hills.

3.5 Site specific opportunities

In addition to the design considerations outlined, additional site specific opportunities have been identified and listed below.

Bridge form and function

- Optimise Bridge flow and path alignment
- Develop sympathetic Bridge extensions form
- Minimise the complexity/visibility in the form and scale of Bridge barriers and balustrades
- Minimise visibility of Bridge lighting whilst maximising lighting performance
- Rationalise and enhance Bridge abutments with elegant and simple design solutions
- Maintain/enhance views/outlook along and across the Bridge
- Maximise the ceremonial/civic street character with reduced clutter and a slower speed environment
- Maximise user amenity and safety for all modes of transport.

Northern and Southern Foreshores

- Fit into the landform and minimise additional structures
- Minimise tree removal
- Maximise movement flow and directness to facilitate the major desire lines
- Maximise ease of orientation through logical path directions and intersections
- Reduce conflicts with safe intersections, clear sightlines and sufficient path widths
- Maximise improvements to landscape and amenity for all users
- Incorporate additional public domain facilities to enhance a variety of uses
- Capitalise on the visual qualities and views into the surrounding lake and parklands.

Figure 40: Views of Commonwealth Avenue Bridge from the northern side looking south

4.

DESIGN DEVELOPMENT

4.1 Introduction

In previous stages of this project a range of options have been studied and assessed. Those options were presented in the 'COMMONWEALTH AVENUE BRIDGE RENEWAL PROJECT - ARCHITECTURE, LANDSCAPE ARCHITECTURE AND URBAN DESIGN OPTIONS REPORT' (December 2022).

Figure 41 shows the preferred options within the broad context up to the current 30% concept design development that are presented in following sections of this report.

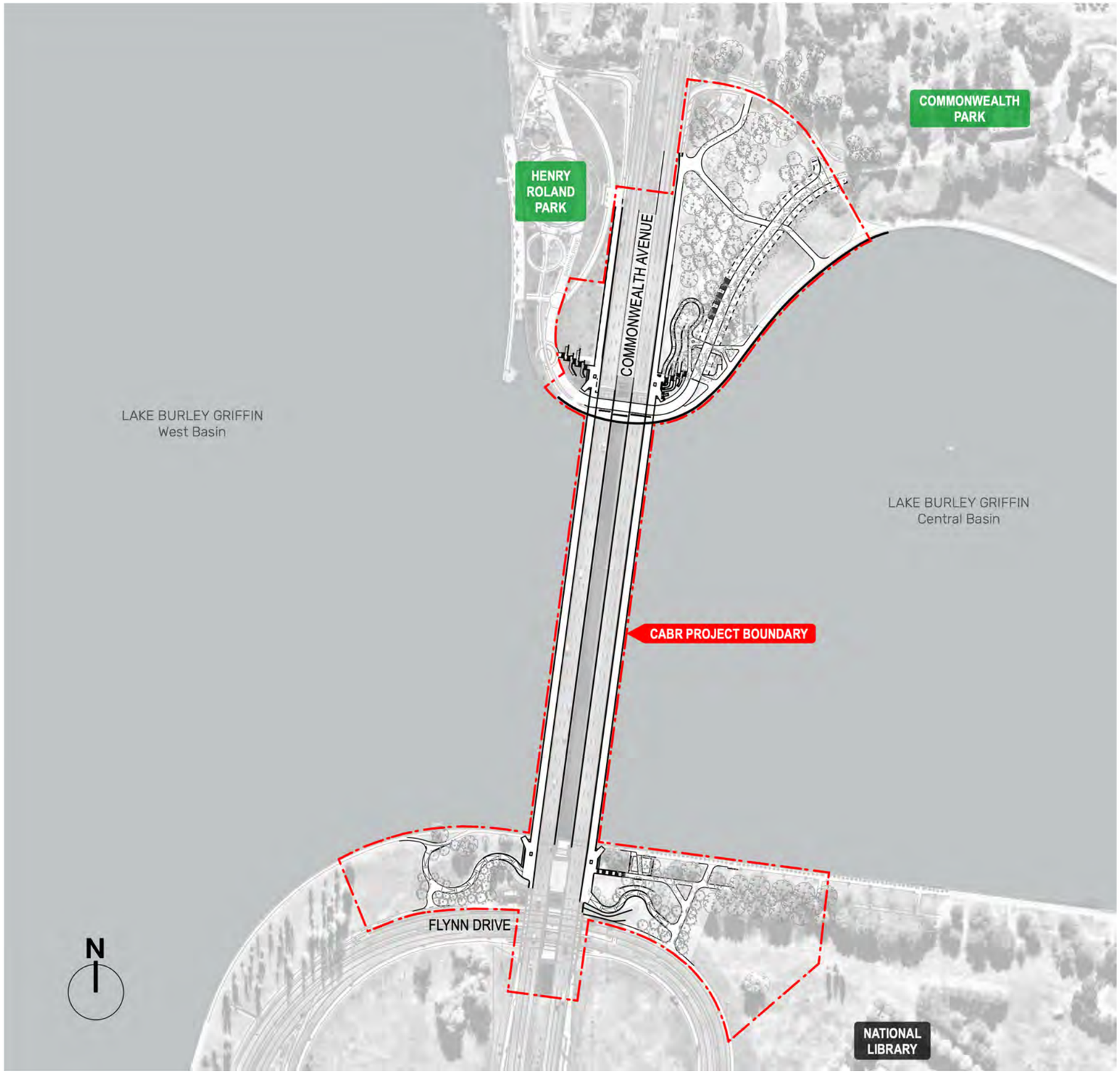


Figure 41: Overall plan of the proposed design within the project study area boundary

4.2 Site approaches

There are two main approaches to the Bridge.

The northbound Bridge has approaches on the north-west and south-west sides. The southbound Bridge has approaches on the north-east and south-east sides. Each of these approaches and potential options for their design are provided in this section of the report.

The north-west approach has been recently upgraded with a shared road and separate pedestrian and cycle paths which will potentially see an increase in usage of this foreshore area.

The south-west approach forms part of the lake Circuit and connects to Flynn Drive. In addition to these path connections, there are a number of desire lines which provide short-cuts across the grass, reducing the general appearance of this foreshore landscape.

The north-east approach carries greater pedestrian and cyclist traffic travelling to and from Commonwealth Park. The park contains numerous paths that connect to the Civic Precinct across Parkes Way as well as numerous routes around the lake towards the east.

The south-east approach provides the key connection to the many cultural buildings and sites in the Parkes Precinct. These connections are popular at all times during both weekdays and the weekend.

The four bridge approaches have been investigated in order to identify a preferred path network arrangement around the bridge.

Figure 42: Four major site approaches

4.2.1 Concept design approach

The Commonwealth Avenue Bridge approaches concept design is based on the site analysis, the vision and the design principles presented in the previous chapters of this report. The concept design takes into account the 6 Project Design Principles of:

- Heritage
- Environmental and Social Sustainability
- Amenity
- Movement and Circulation
- Quality and Constructability.

The key design challenge is to accommodate the bridge widening elements while protecting the heritage, civic and landscape values of the bridge and its surrounds. In addition, the objective was to enhance the function, safety, comfort and enjoyment of all users and where possible enhance the visual quality and character of the overall setting.

The diagrams opposite illustrate the main shared path network around and onto the bridge approaches for both the existing and proposed concept design for the northern and southern foreshore areas around the bridge abutments. The new network of paths aims to create a simplified, safer and more logical series of path alignments to assist users to easily navigate and enjoy their walk and/or cycle onto and off the bridge.

The following sections present the concept design divided into the 4 quadrants of the bridge approaches.

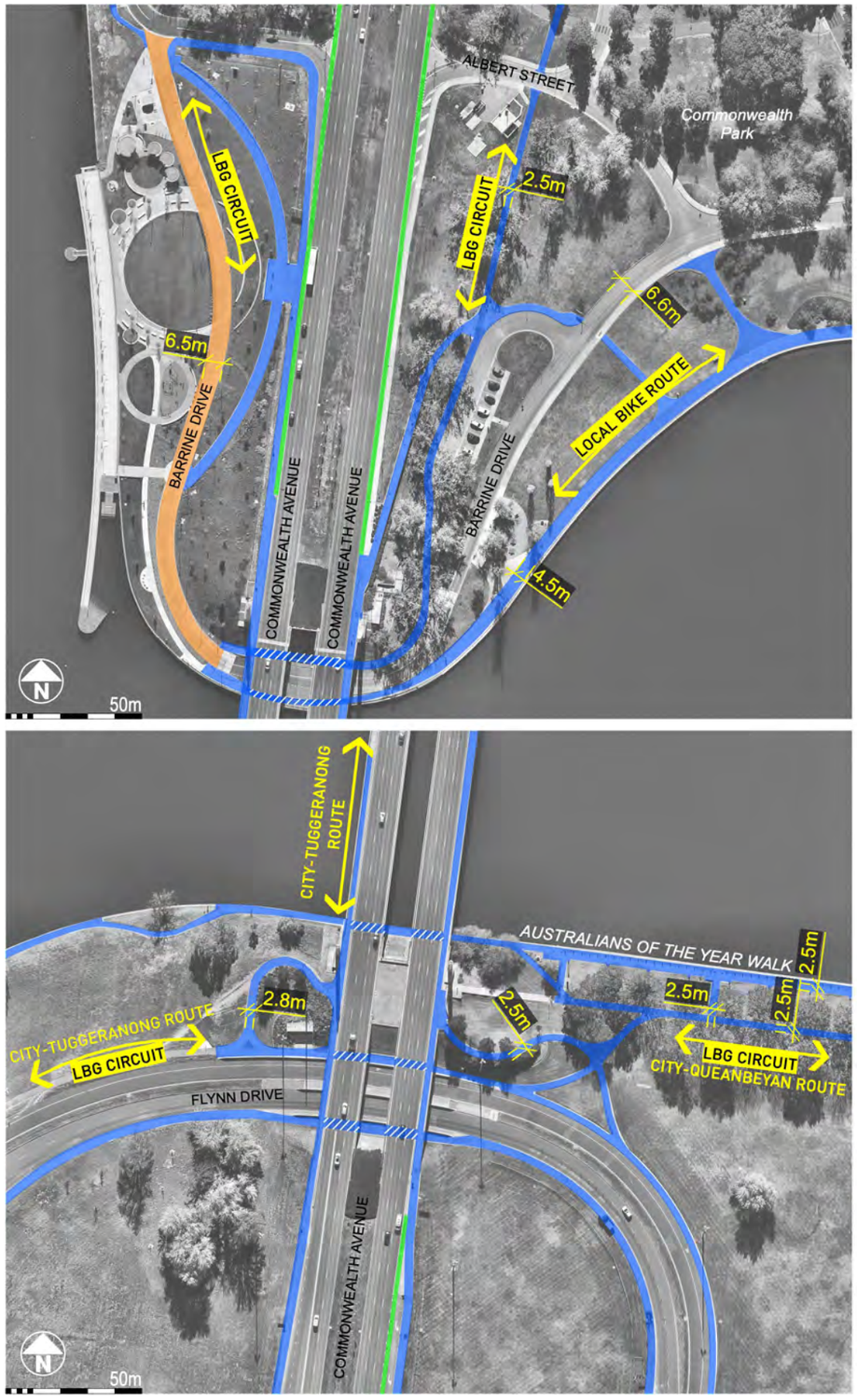


Figure 43: Existing active transport routes

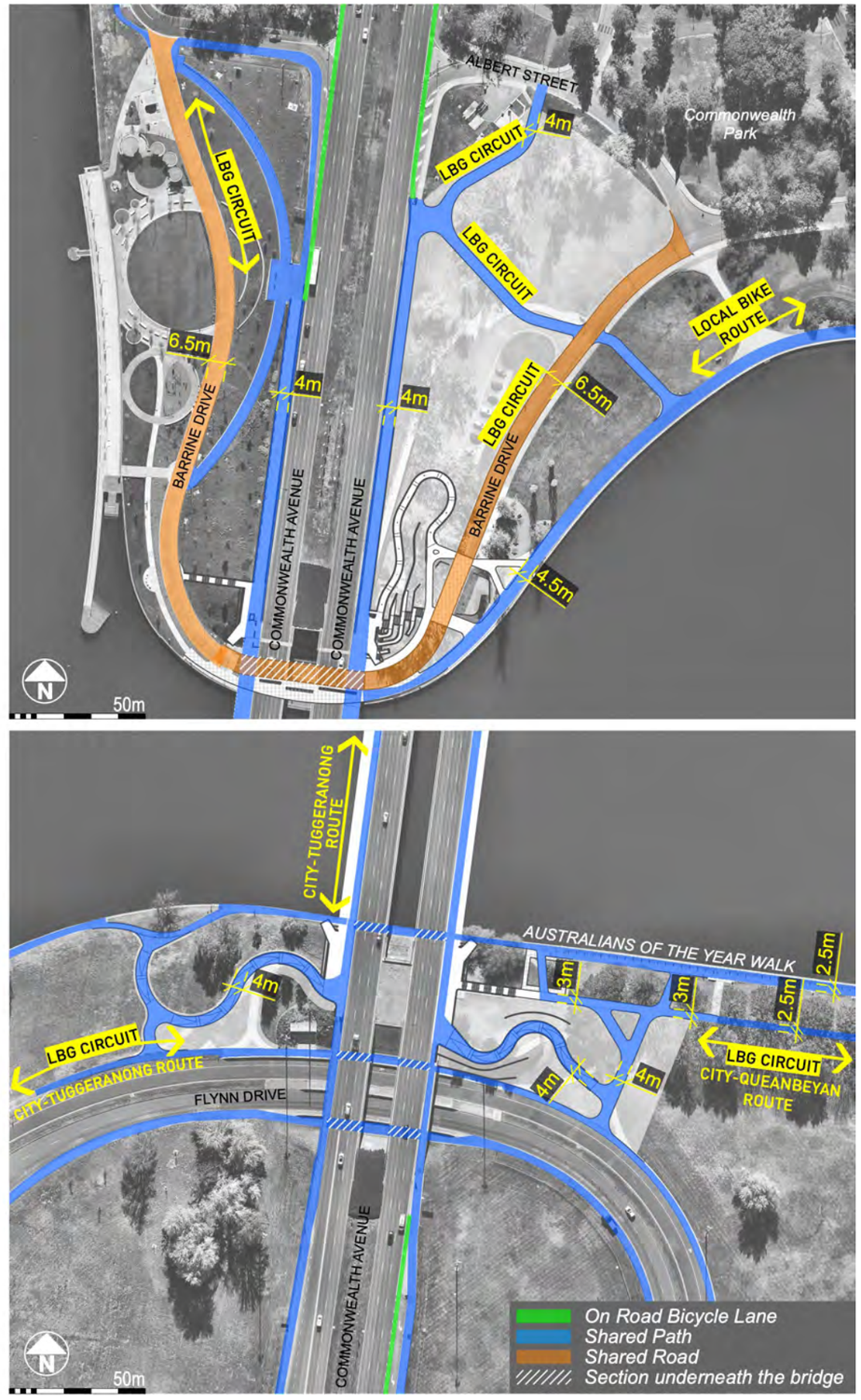


Figure 44: Proposed rationalised and safer pedestrian and cyclist routes

4.2.2 North-west approach

Existing site conditions

The north-west approach has an existing 4m wide pedestrian and cycle ramp that travels through Henry Rolland Park before leading up to the Bridge. This shared path is already compliant with accessibility standards and requires no further adjustment.

Some modifications are required to the abutment stairs to improve safety for pedestrians as they merge onto the existing shared path, minimising the risk of collisions with cyclists.

Design considerations and opportunities

- Existing accessible shared path ramp to be retained
- Existing trees provide limited canopy and shade, however there is opportunity for large tree planting
- Opportunity to enhance views towards SW from the existing embankment and top of the abutment
- Opportunity to provide safer pedestrian route connecting the bridge to existing pedestrian crossing node at Barrine Drive shared road

Figure 45: North-west approach existing site conditions

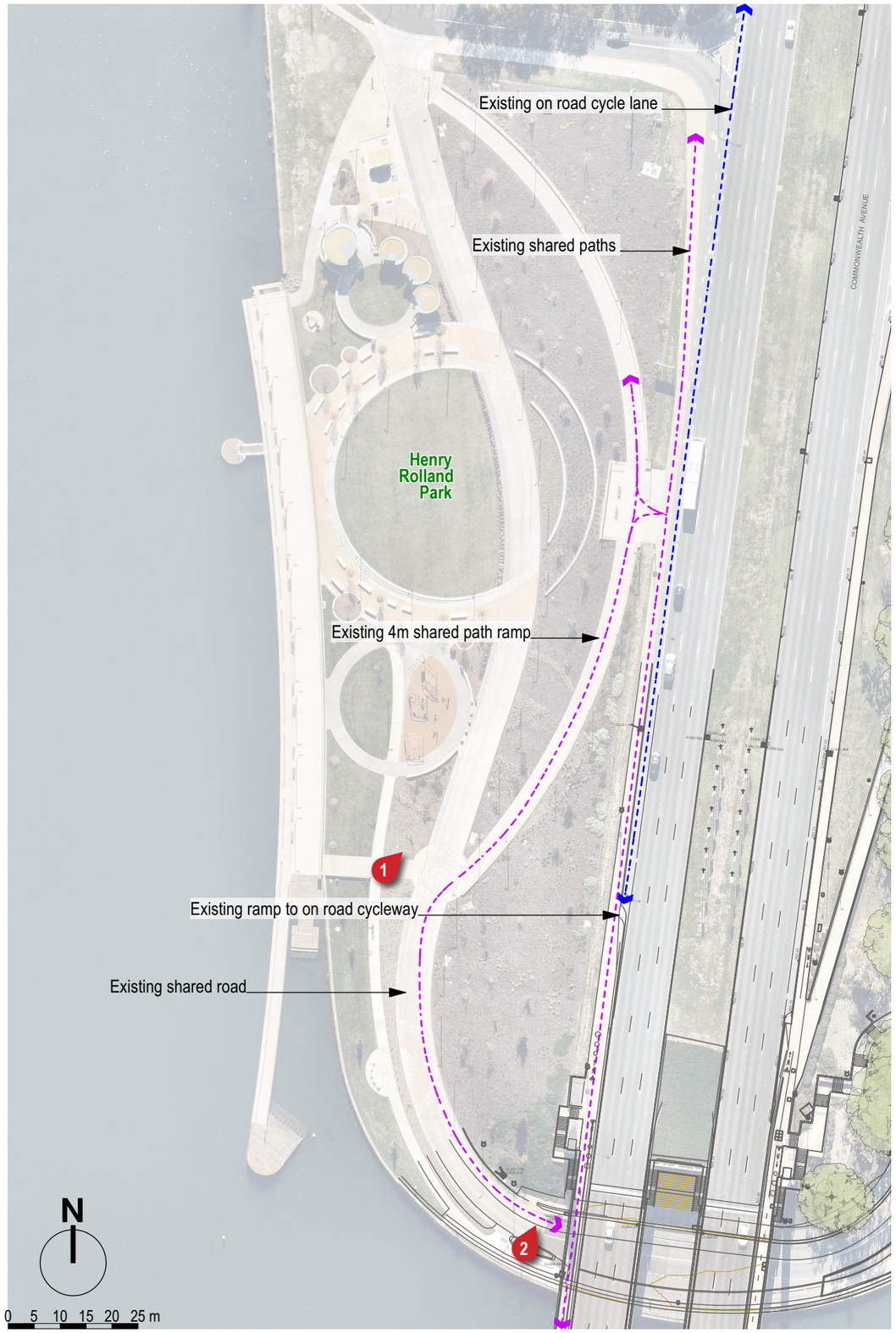


Figure 46: North-west approach existing site conditions diagram

Concept design (30%)

The north western approach to the bridge is an area which has recently been upgraded as part of the new Henry Rolland Park on the foreshore of the West Basin of Lake Burley Griffin. The widened bridge arrangement requires the widening of the abutments and therefore the need for new access stairs down from the bridge to the lake foreshore.

The following is a list of the key features of the concept design in this area:

- The widened abutment creates a larger plaza space around the bridge pylon which connects to a new cantilevered lookout which provides attractive and panoramic views over the Lake and the National Museum of Australia to the distant Brindabella Ranges
- The existing stairs adjacent to the abutment are replaced with a new set of stairs which lead directly down the embankment to Barrine Drive and are centred on the existing circular pavement detail which creates a threshold to the base of the stairs and feeds directly into the shared road environment of Barrine Drive and the adjacent lakeside footpath
- The existing shared path is widened from the new bridge abutment up to the intersection of the shared paths leading into Henry Rowland Park and further north into the city, along Commonwealth Avenue
- The shared road conditions of Barrine Drive are extended from Henry Rolland Park, under the bridge heading east, which extends the slow speed and pedestrian and cyclist friendly environment around to the north eastern approaches to the bridge and into Commonwealth Park
- An improved urban environment is created in the undercroft space of the two bridges, where Barrine Drive is narrowed to a width consistent to that in Henry Rolland Park, creating a larger foreshore pedestrian space for park users safety and enjoyment
- The guard rail vehicle barrier is replaced with large bench seating whose mass allows them to function as a slow speed barrier for vehicles, as well as seating for viewers to observe the bridge and the lake and in particular the intriguing water reflections on the underside of the bridges.

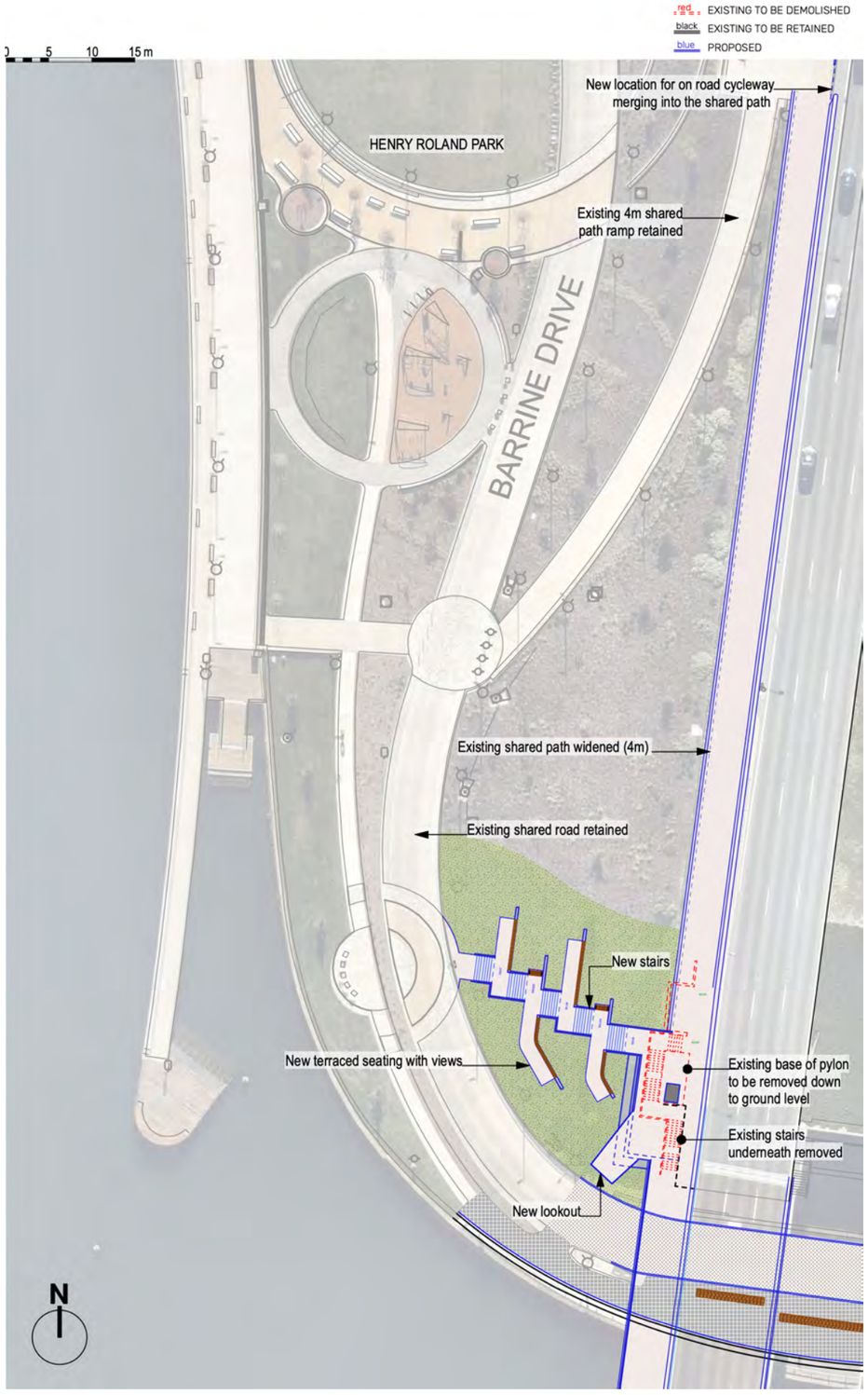


Figure 47: North-west approach

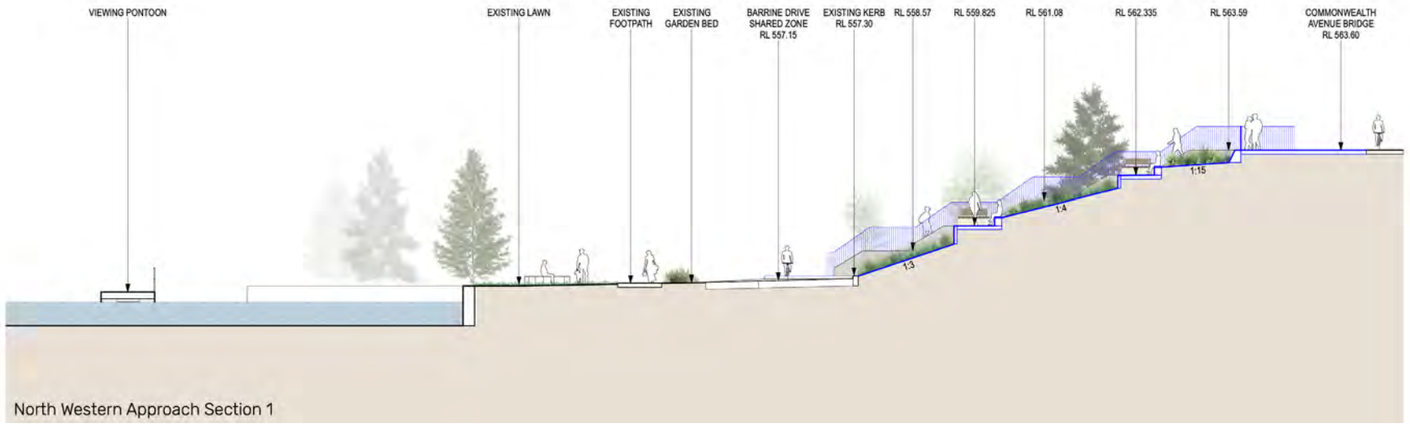


Figure 48: North-west approach cross sections (1-3)

4.2.3 North-east approach

Existing site conditions

The north-east approach has an existing 2.5m wide shared path ramp that travels through Commonwealth Park before leading up to the north-east abutment and the Bridge.

Design considerations and opportunities

- Existing shared path ramp gradient is non-compliant with accessibility standards
- Large number of existing mature trees providing good shade along the existing pathways
- Opportunity to enhance views towards SE from the existing embankment and top of the abutment
- Opportunity to provide safer pedestrian and cyclist routes across the precinct

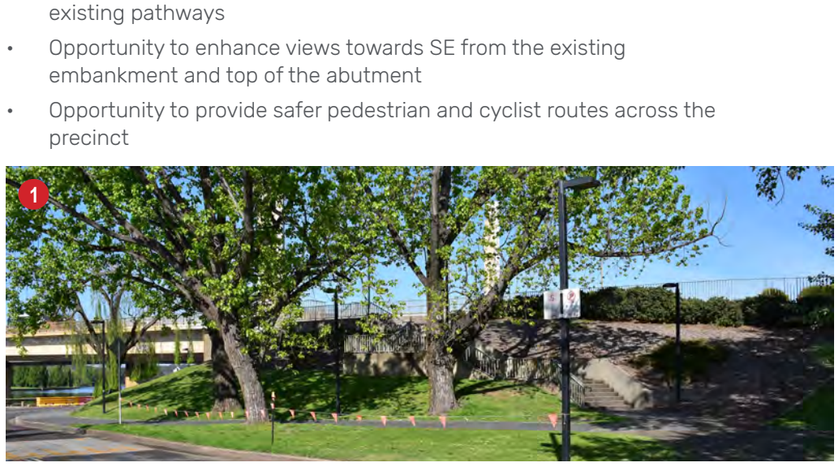


Figure 49: North-east approach existing site conditions

Figure 50: North-east approach existing site conditions diagram

Concept design (30%)

The north eastern approach to the bridge is an area with a network of paths and roads, including a car park, as well as substantial open lawn areas and groups of trees along the slope of the Commonwealth Avenue embankment. This concept design seeks to rationalise and reduce the amount hard surfaces and particularly to reduce pedestrian and cyclist conflict by separating the two modes of movement and creating a more logical and intuitive set of path alignments.

In addition to the important connectivity role of this area between Civic, the lake parklands and the Parliamentary Triangle, via Commonwealth Avenue Bridge; its setting on the lake foreshore, opposite the Captain Cook Fountain and the key Parliamentary Triangle buildings along the southern foreshore, offer iconic and highly attractive views over the lake to the distant hills in the east. This concept design seeks to capitalise on the attractive setting by providing enhanced facilities for the enjoyment of people using the space for a wide range of activities from quiet recreation through to large group events.

The concept design creates a series of attractive spaces with enhanced facilities to increase the range of recreation functions available for users of the open space and associated path network. Additional tree planting will improve the character of the space and increase the levels of comfort for people using and moving through the space.

The following is a list of the key features of the concept design in this area:

- A realigned cycleway path network which separates pedestrian access from cyclists
- A direct 4m wide shared path connection from the north, onto Commonwealth Avenue closer to the Albert Street intersection which increases the space and visibility for cyclists and pedestrians
- A new and more direct shared path connects the Commonwealth Avenue shared path to the Lake Burley Griffin foreshore shared path
- A separate accessible footpath, 2.5m wide, is located closer to the abutment in conjunction with a set of generous 3.5m wide stairs leading down to an enhanced foreshore activity area
- A second stair, adjacent to the new abutment wall, provides direct access to the south onto Barrine Drive, creating a more direct connection to Henry Rolland Park on the western side of Commonwealth Avenue
- The elevated plaza space centred around the existing bridge pylon on Commonwealth Avenue, provides a generous space with ample room for pedestrians and cyclists to avoid conflict and increase the opportunities for viewing the lake panorama from the new cantilevered lookout
- A series of benched terraces are incorporated into the stair design to create viewing areas overlooking the lake and establish a stable and attractive vegetated slope between each terrace
- The enhanced foreshore activity area provides substantial seating facilities on a decomposed granite surface to be incorporated with the existing and adjacent seating area
- Barrine Drive is upgraded to a 'Shared Road' to match the existing shared road in Henry Rolland Park, west of Commonwealth Avenue, including a broad crossing area opposite the stairs and accessible footpath ramp, using granite sets to highlight this higher pedestrian activity area
- The existing car park has been removed to increase the recreational and landscape values of the central space with the potential to provide some accessible car parking spaces if required, however removing all cars from this area will greatly enhance the quality and character of this parkland setting
- Barrine Drive is to have a new planting of feature trees to enhance the experience of user and create a unifying landscape feature through this area
- All new paths and stairs have been designed to fit into the existing landform and retain all existing trees except for the tree closest to the abutment which is to be removed due to its poor condition.

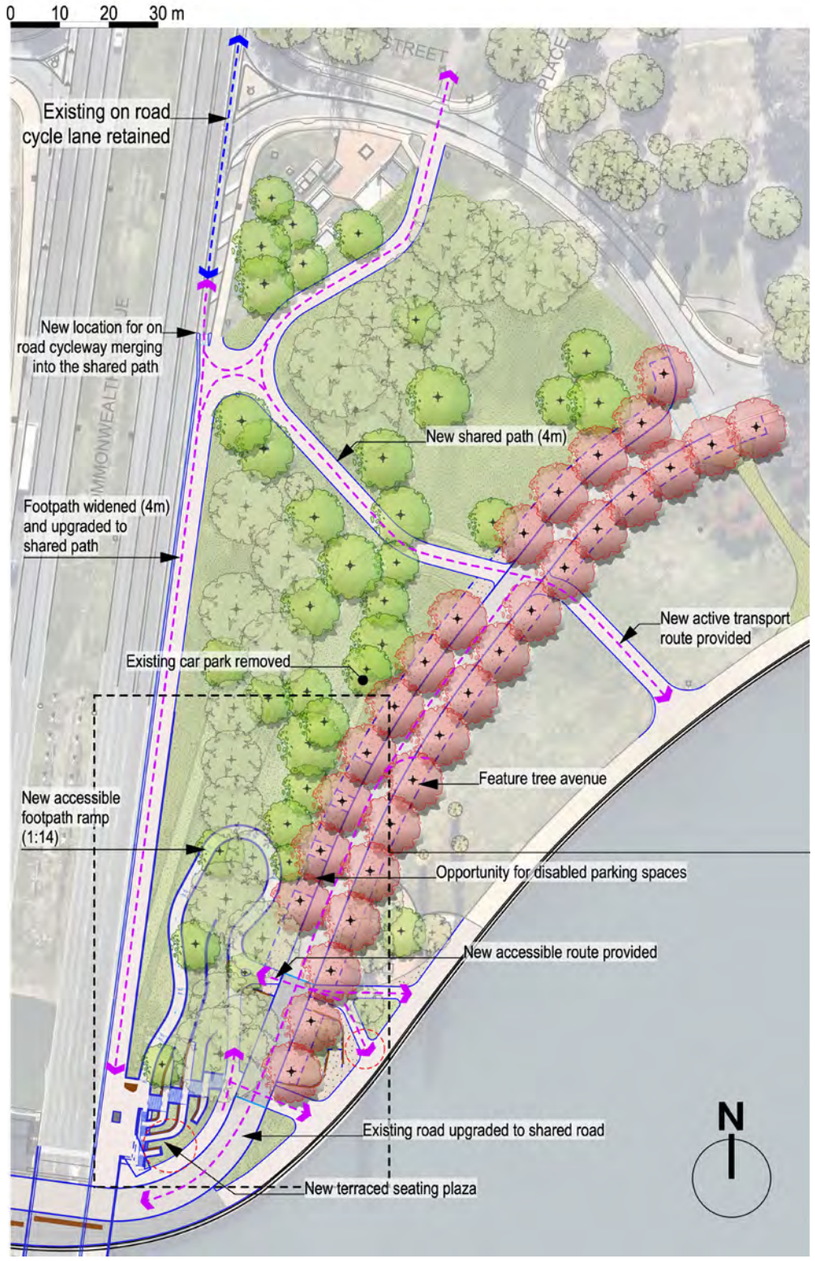


Figure 51: North-east approach

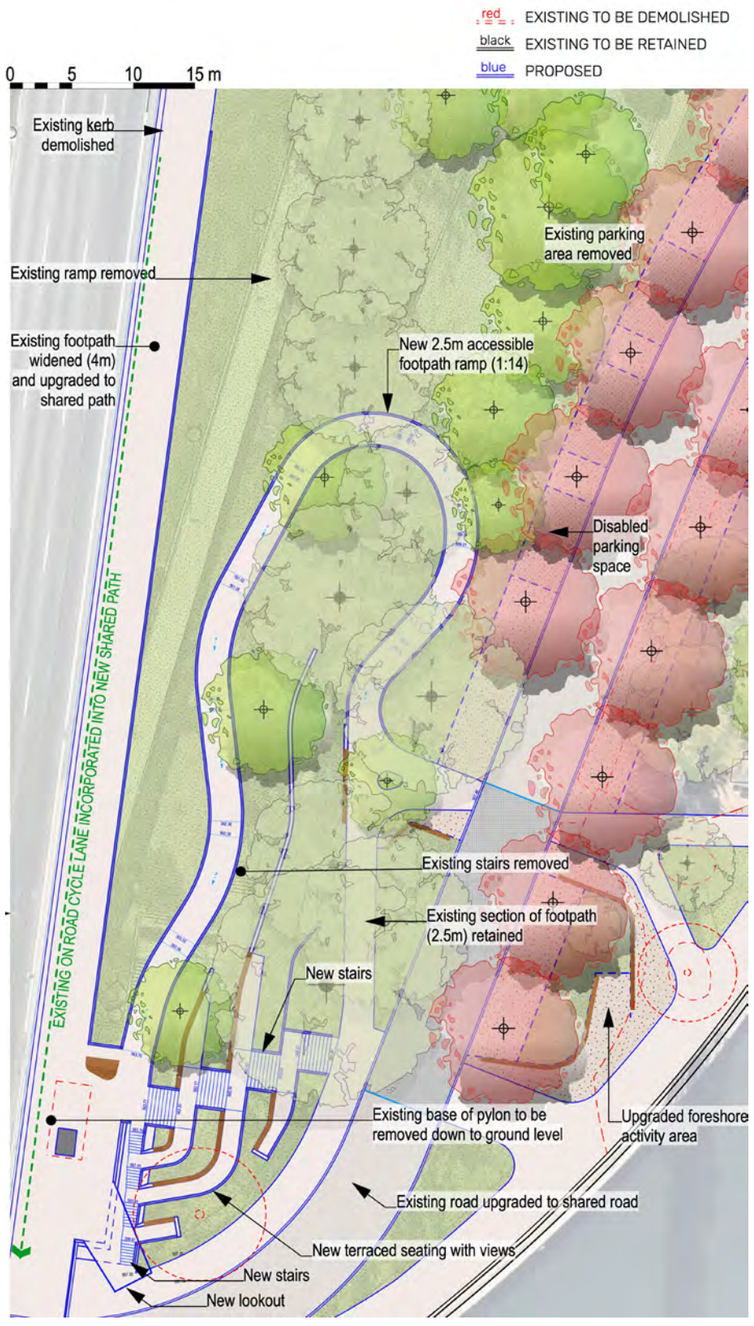


Figure 52: Detail of north-east approach

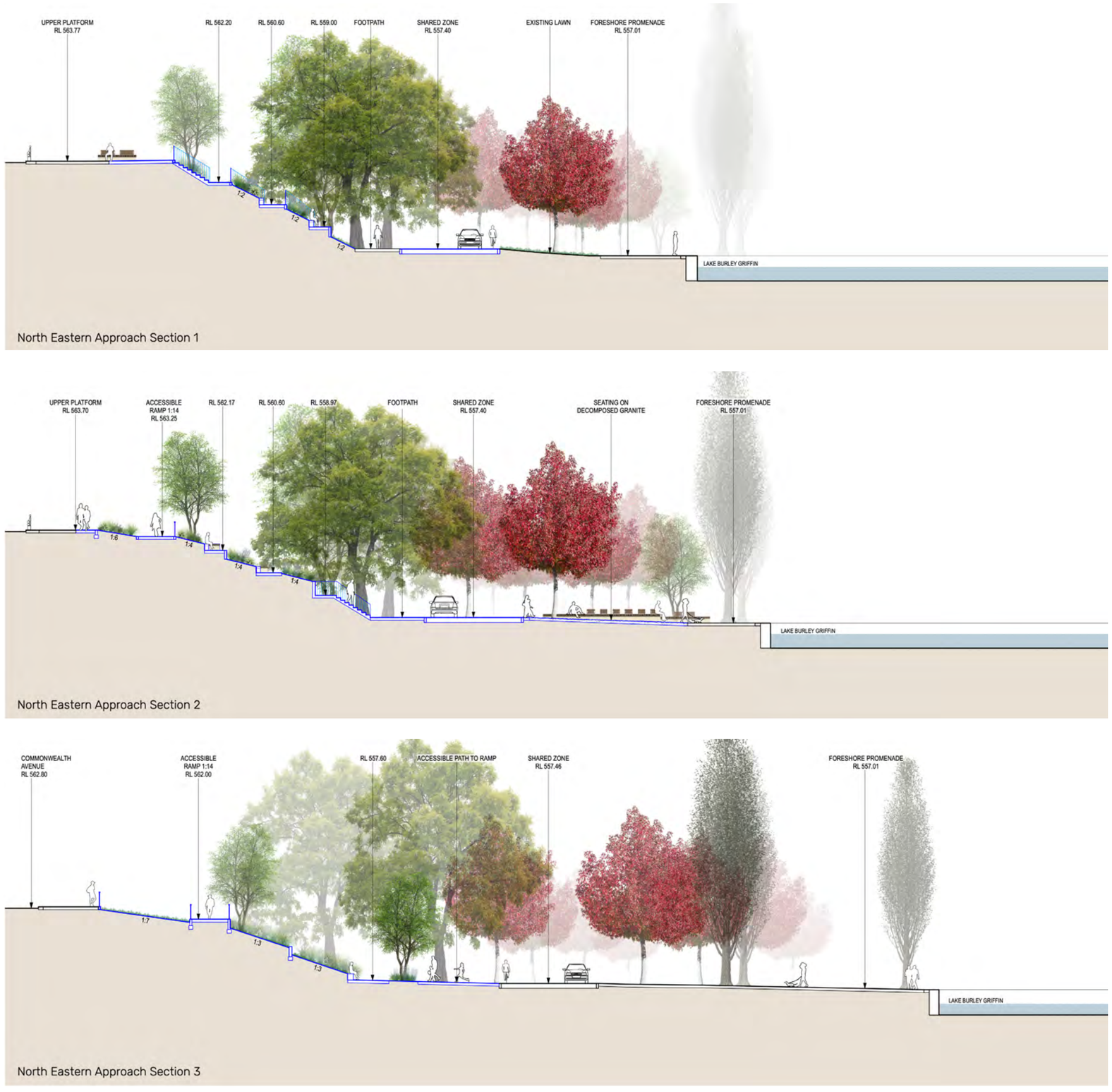


Figure 53: North-east approach cross sections (1-3)

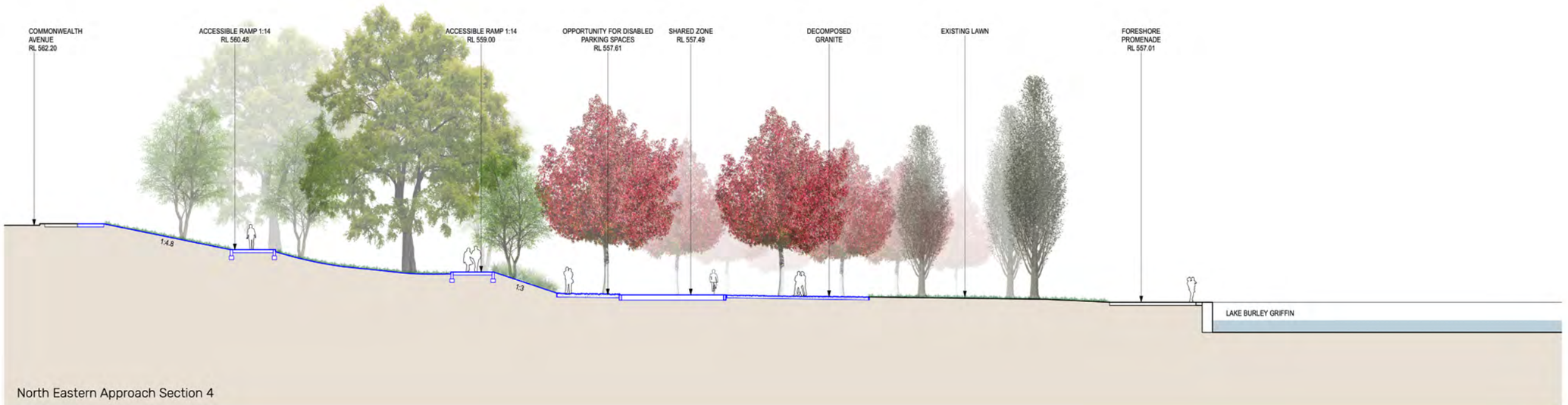


Figure 54: North-east approach cross sections (3-4)

4.2.4 South-west approach

Existing site conditions

The south-west approach has 2 main access points for pedestrians and cyclists. There is a 2.8m wide shared path ramp running adjacent to Flynn Drive that has a grade that is non-compliant with accessibility standards. The shared path ramp leads up onto the shared path on the western side of the Bridge, immediately south of the abutment pylon. Figure 56 also reveals that an informal route has been created where pedestrians/cyclists are cutting across the existing turf from the south-west, prior to reaching the formal path.

Another pedestrian path runs along the edge of the lake and leads to a set of steps that lead up the south-west abutment.

Design considerations and opportunities

- Existing shared path ramp is non-compliant with accessibility standards
- Existing trees provide limited canopy and shade, however there is opportunity for large tree planting
- Opportunity to enhance views towards NW from the existing embankment and top of the abutment
- Opportunity to consolidate pedestrian and cyclist desired lines as formalised shared paths across the precinct.

Figure 55: South-west approach existing site conditions

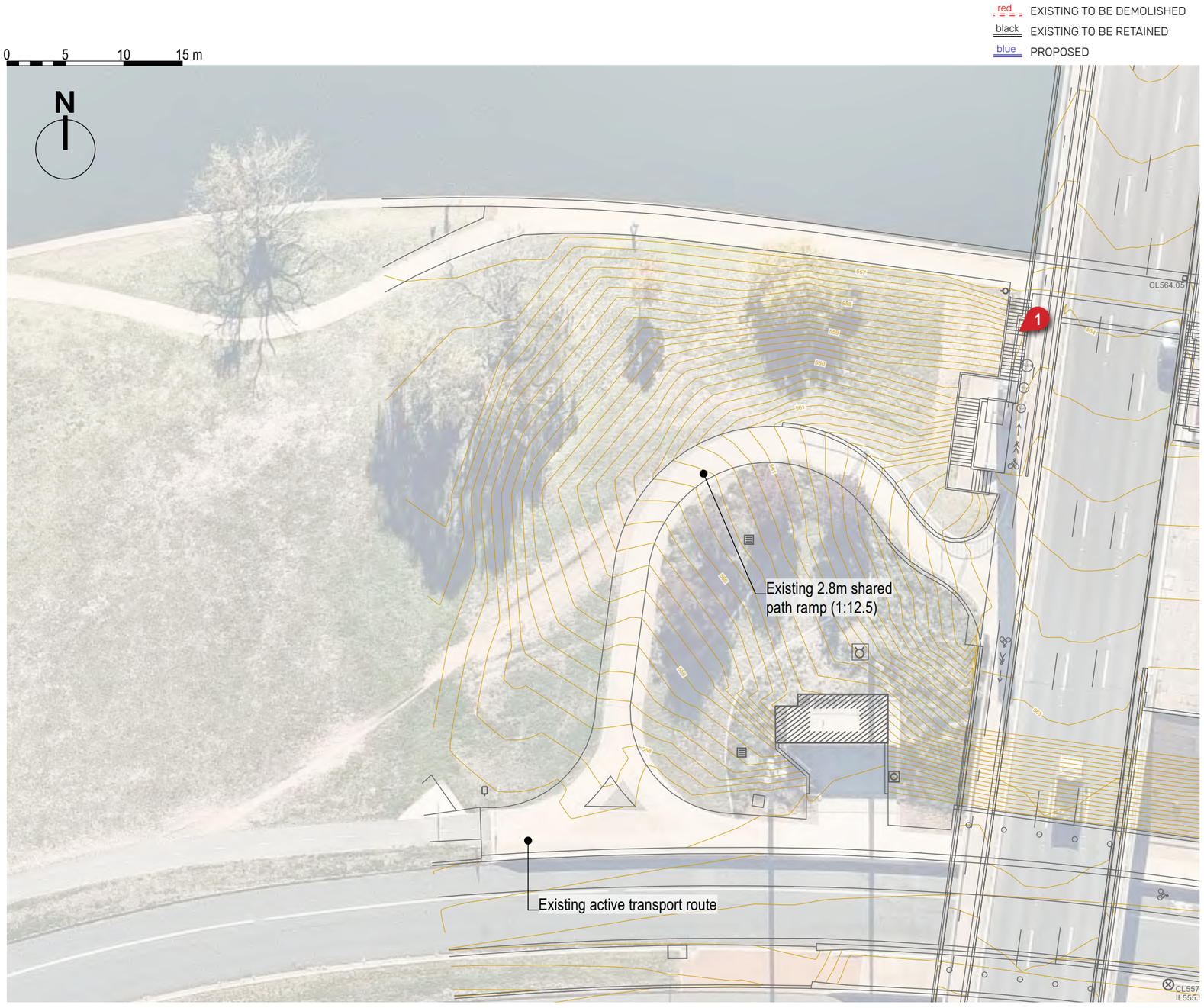


Figure 56: South-west approach existing site conditions diagram

Concept design (30%)

The current conditions in the south western approaches area are characterised by an open parkland setting with scattered groups of Poplar and Willow trees in an undulating to flat lawn set between the lake foreshore and Flynn Drive. There are shared paths bordering the parkland area on both the lake foreshore and Flynn Drive. A number of informal tracks cut across the lawns following desire lines between Flynn Drive and the bridge access ramp and the foreshore path.

The following is a list of the key features of the concept design in this area:

- A gently meandering 4m wide and 1:14 grade, shared path, connects the widened abutment plaza area on the bridge down to both the foreshore and Flynn Drive shared paths, creating safer and more accessible connections, both east and west along the foreshore and Flynn Drive.
- The new path alignment aims to accommodate the preferred desire lines and to fit into the existing landform, making it an efficient alignment which feeds all 4 directions, east and west along the lake foreshore and east and west on Flynn Drive.
- Massed plantings of trees and shrubs on the embankments around the shared path helps to direct and slow cyclists while creating an attractive landscape.
- A new plaza space is created at the junction of the new shared path and the main foreshore shared path to signal to cyclists of the need to slow for other cyclists and pedestrians.
- Large bench seating form the edges to the new plaza space providing an attractive resting/meeting point on the path network.
- The new abutment features the same arrangements as the northern abutments with increased surface area and a lookout which focusses on the view over the lake towards Black Mountain.

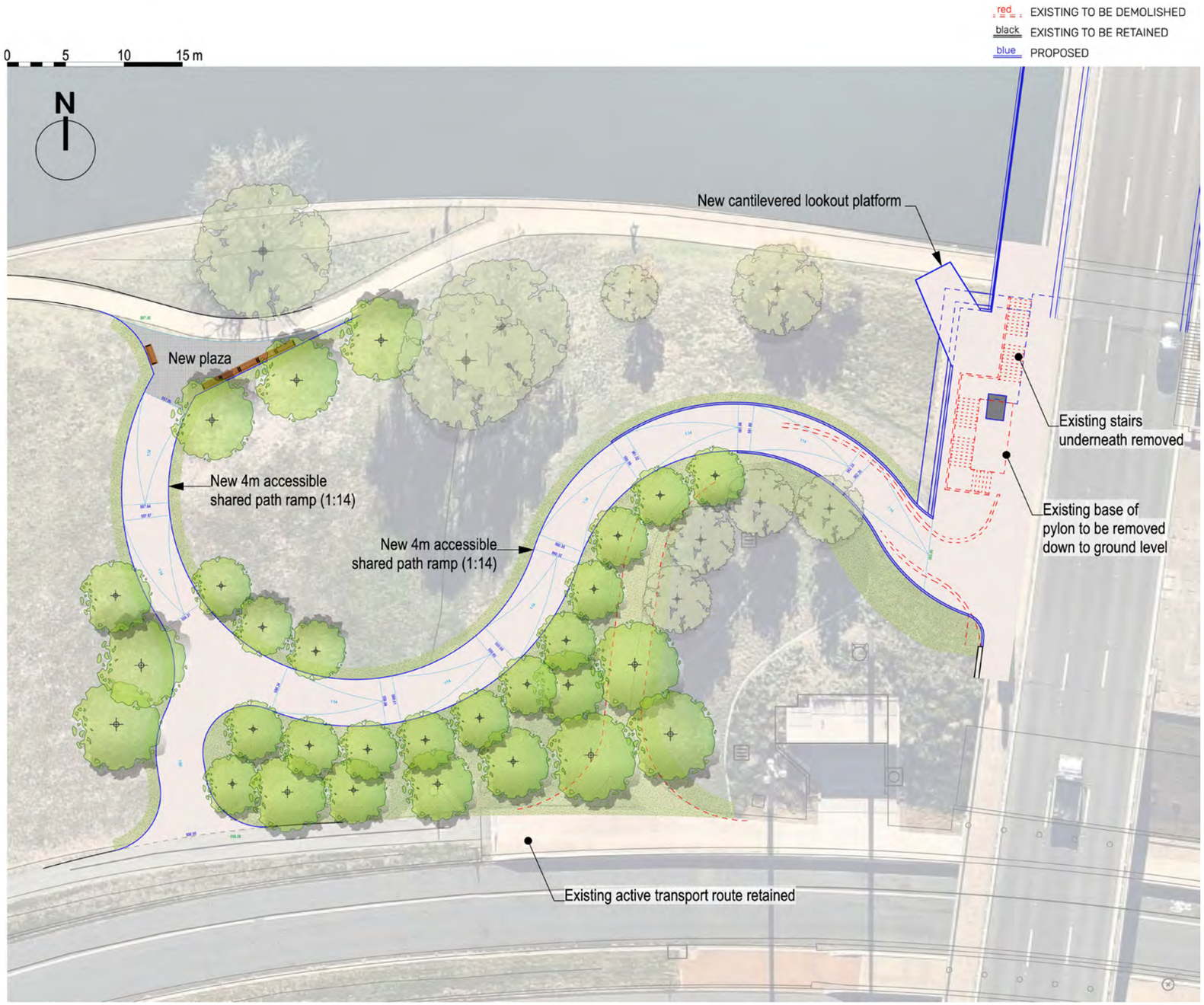


Figure 57: South-west approach

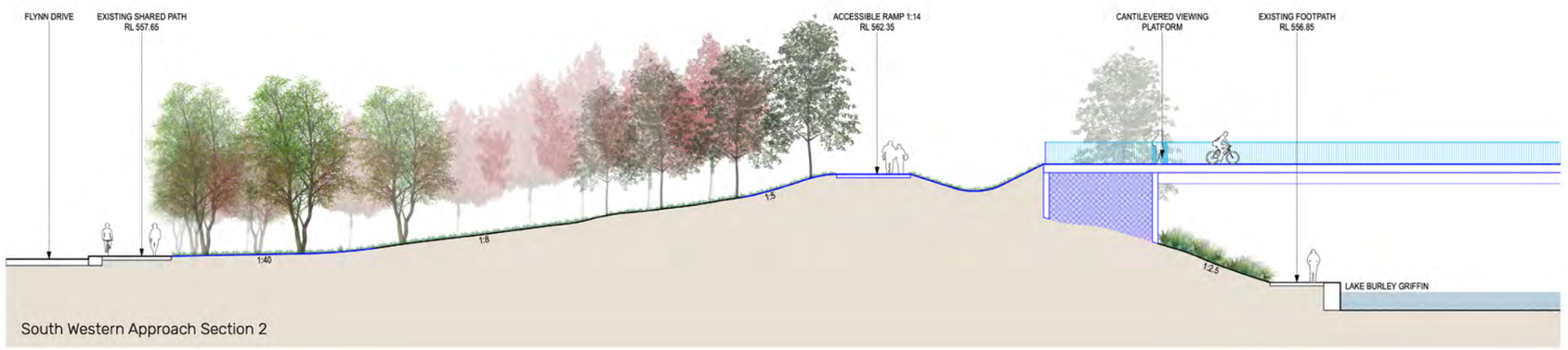


Figure 58: South-west approach cross sections (1-2)

4.2.5 South-east approach

Existing site conditions

The south-east approach has two main approaches to the Bridge, via the abutment and a shared path ramp.

The south-east abutment has two sets of stairs that take pedestrians from the foreshore area to the top of the abutment and onto the Bridge.

An existing shared path ramp also directs cyclists and pedestrians onto the Bridge, however the grade of the ramp does not comply with accessibility standards.

Design considerations and opportunities

- Existing shared path ramp is non-compliant with accessibility standards
- Existing tree-lined foreshore avenue provides extensive shade and has high recreational value
- Opportunity to enhance views towards NE from the existing embankment and top of the abutment
- Opportunity to provide safer pedestrian and cyclist connection to the bridge and to Flynn Drive

Figure 59: South-east approach existing conditions

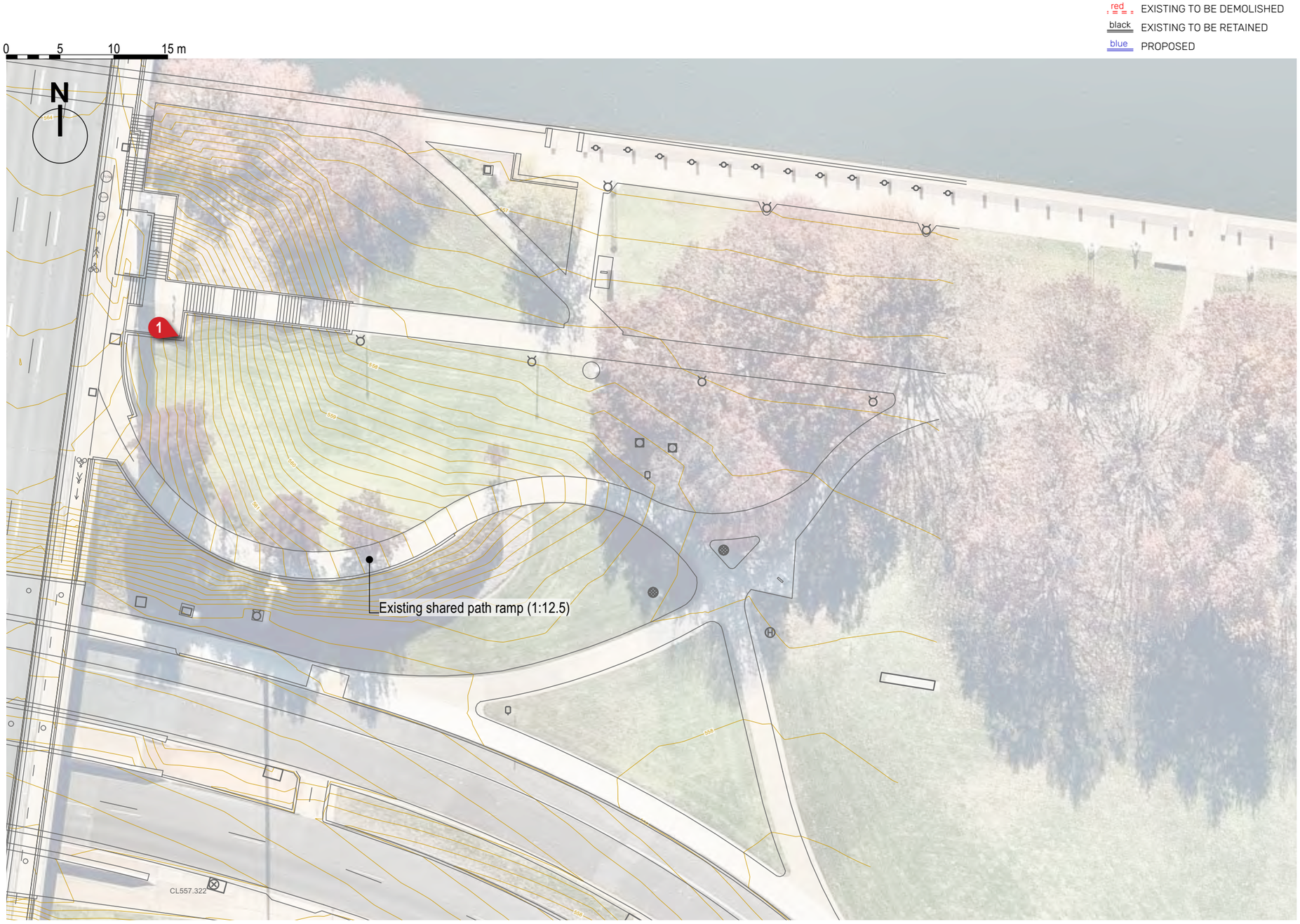


Figure 60: South-east approach existing conditions diagram

Concept design (30%)

The south eastern approaches to the bridge have the most structured and formal setting of the 4 bridge approaches. Being inside the Parliamentary Triangle and adjacent to the National Library of Australia, it has a formalised and straight lake edge which includes the Australians of the Year Walk. Adjacent to this Walk, and on a parallel alignment, the path that leads to the bridge stairs is enveloped in a formal avenue of trees which creates a powerful landscape element in this area. This axial pathway forms part of the City to Queanbeyan Cycle Route as well as being a popular walking route.

The area is crossed with a range of other paths creating angled intersections along the two main lake foreshore paths, which give rise to potential conflicts between cyclists and pedestrians. The existing shared ramp up to the abutment is both narrow and steep at 2.5m wide with a gradient of 1:12.5.

The following is a list of the key features of the concept design in this area:

- The stairs down to the avenue are upgraded to a 3m width and axially realigned with the avenue in keeping with the formal structure of these elements.
- The shared ramp is also upgraded and realigned to a 4m width and a 1:14 grade.
- A series of retaining walls reduce the extent of the slopes adjacent to the shared path ramp and create a series of more gentle and vegetated slopes,
- Adjacent to the base of the stairs is a new plaza which includes bench seating on granite sett paving and a central area of decomposed granite with a formalised grove of trees to create a gathering space for both formal and informal uses including Australian of the Year ceremonies.
- The pathways which have been consolidated and widened to 4m wide, are aligned at a series of angled intersections to slow cyclist speeds and reduce potential for conflict with pedestrians and other cyclists.
- The new abutment features the same arrangements as the northern abutments with increased surface area and a lookout which focusses on the view over the lake towards the National Capital Exhibition buildings and Mount Ainslie.

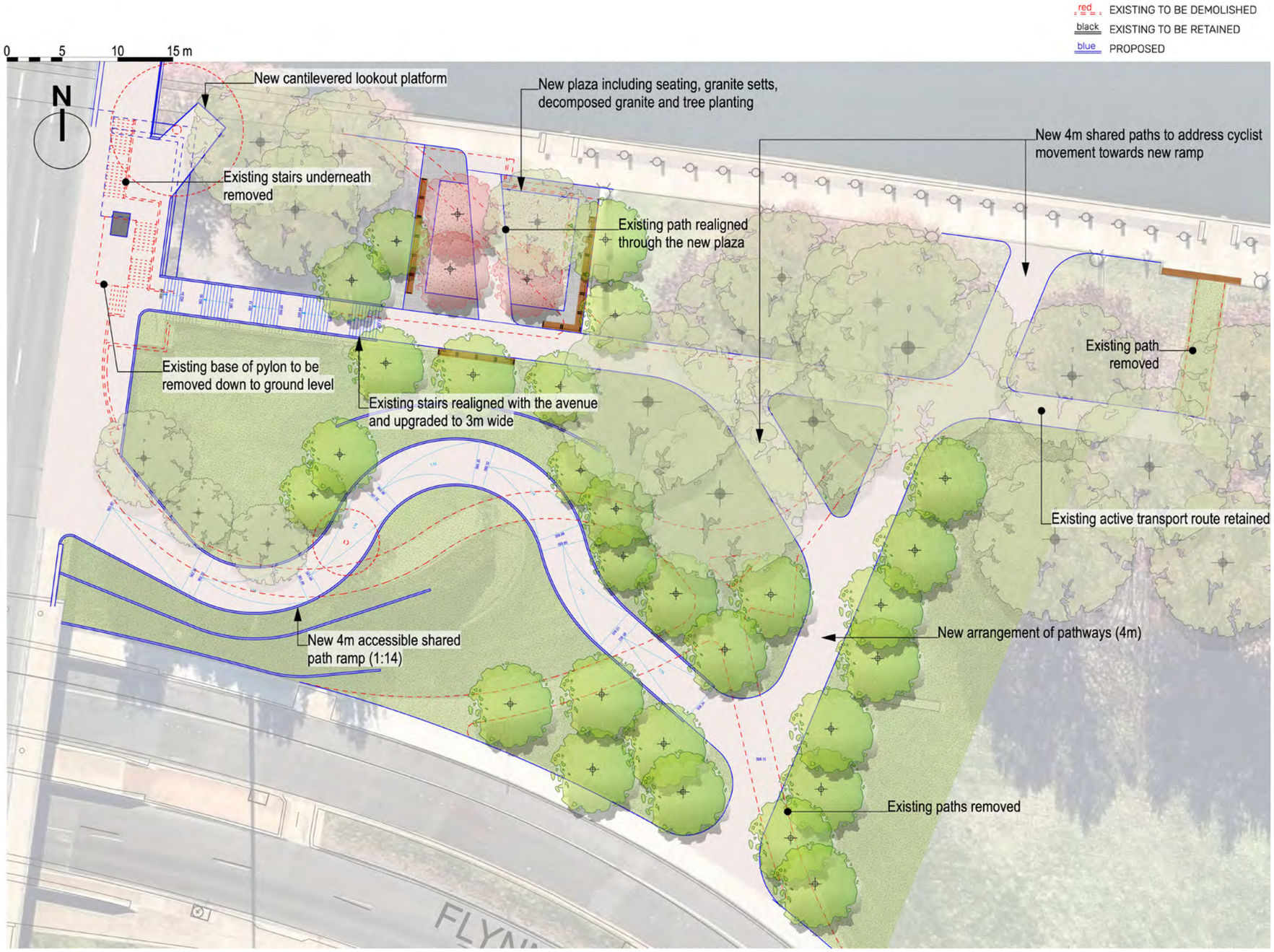


Figure 61: South-east approach

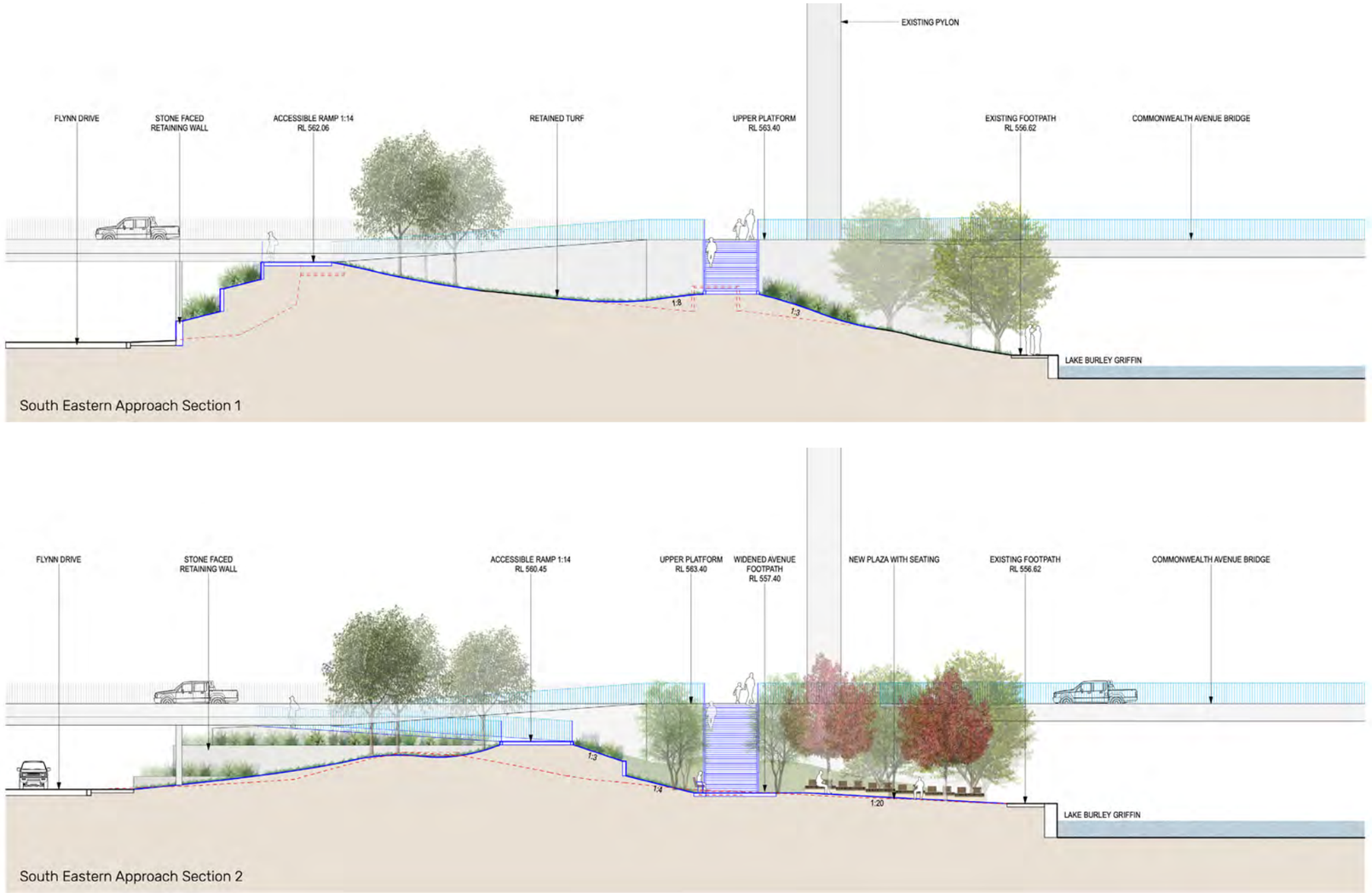


Figure 62: South-east approach cross sections (1-3)

4.3 Bridge extension - architectural form

Commonwealth Avenue Bridge comprises a pair of mirror reversed matching elements which read together as one.

The form of the Bridge extension is a critical element in the overall concept design as it is required to be lightweight, durable and complementary of the existing Bridge structure.

The following studies were undertaken to find a suitable form that satisfies these requirements.

The existing form is shown in **Figure 63** for reference.

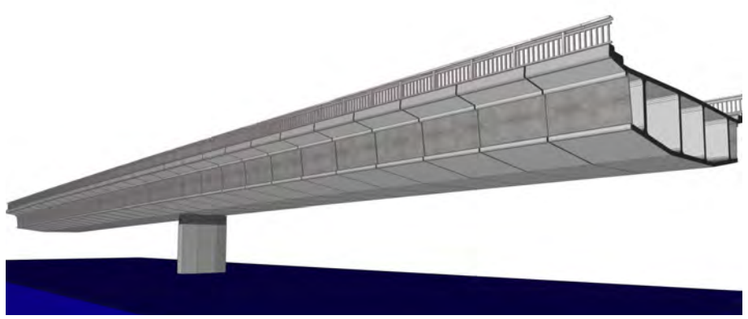


Figure 63: Existing Bridge architectural form - 3D illustration

Visual Impact Study

The new extensions to the external side of each individual Bridge maintain the overall symmetry. The extrusion of the existing form for the extensions minimises the overall impact of the widening on the pair of Bridges. A future central Bridge for the new light rail will enhance the new arrangement further. This impact is similar for all options.

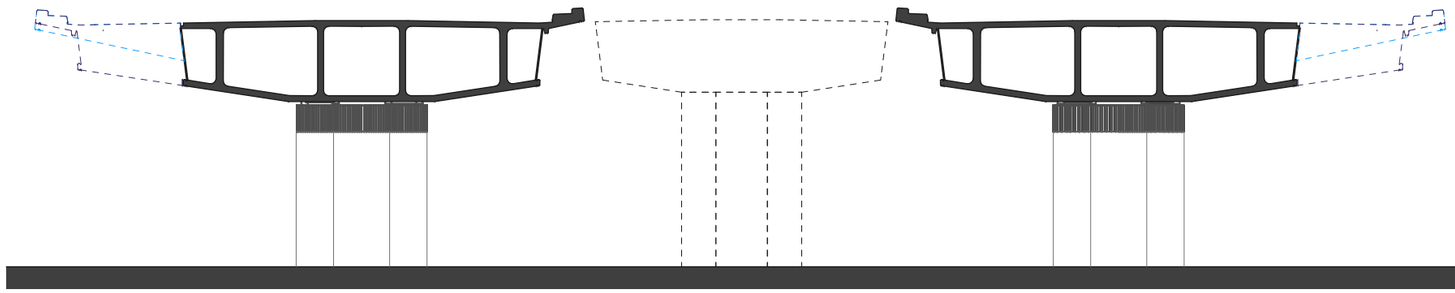


Figure 64: Bridge extension study, including potential future light rail Bridge

The asymmetrical result is only visible from a directly axial viewpoint under the Bridge (image 3 in **Figure 65** below).

From all other viewpoints the widening is not apparent.

Figure 65: Different viewpoints under the northbound Bridge looking south

Concept design (30%)

The proposed design extends the existing shape of the soffit of the Bridge to the required width and does replicate the existing edge detail.

By extending the existing form the vertical precast infill panels will still catch the light and a double line will be visible making the bridge look 'lighter' and more detailed in its appearance.

Heritage outcome

+ Complementary to the original built form.
+ Reinforced horizontal emphasis.
+ Bridge edge replicates original design.
+ Bridge edge condition creating similar shadows.
+ Good dialogue between the old and the new fabric. + Concealed engineering upgrade.
– Original edge demolished/ concealed.
– Each individual Bridge is asymmetrical.

Structural outcome

+ Easy integration of concealed structural elements.

A 3D illustration (**Figure 66**) is shown below and across section (**Figure 68**) is shown in following page.

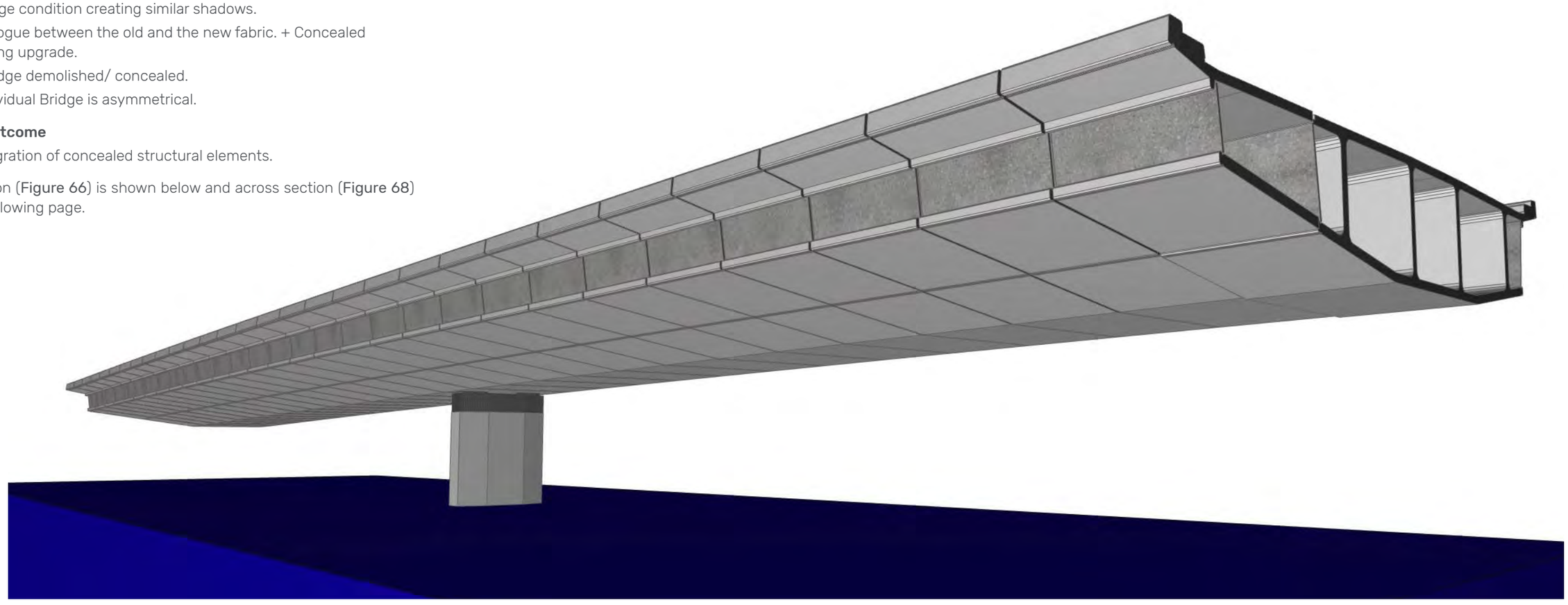


Figure 66: The design extends the existing shape of the soffit of the bridge to the required width and does replicate the existing edge detailing

4.4 Bridge cross section

A detailed assessment and consideration of the vehicle lane width configuration were carried out to determine the optimum lane widths on the Bridge and, in turn, the widening of the structure required. Structural demands and design criteria are identified and discussed in the main report.

Design considerations and opportunities

+ Reducing unnecessary additional widening or loading to the structure
+ Reflecting the approach lane arrangement and constraints for the extent of the commonwealth avenue in particular over Flynn Bridge and existing cycle path transitions
+ Providing wider lanes for road users' safety
+ Opportunities to include minimum protection shoulder that would reduce maintenance on the bridge barrier and provide road users with some visual clearance.

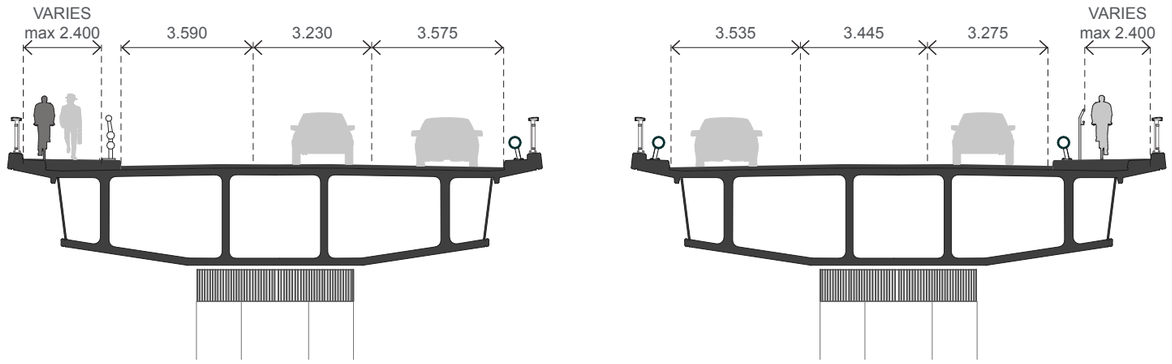


Figure 67: Typical bridge cross section - Existing conditions

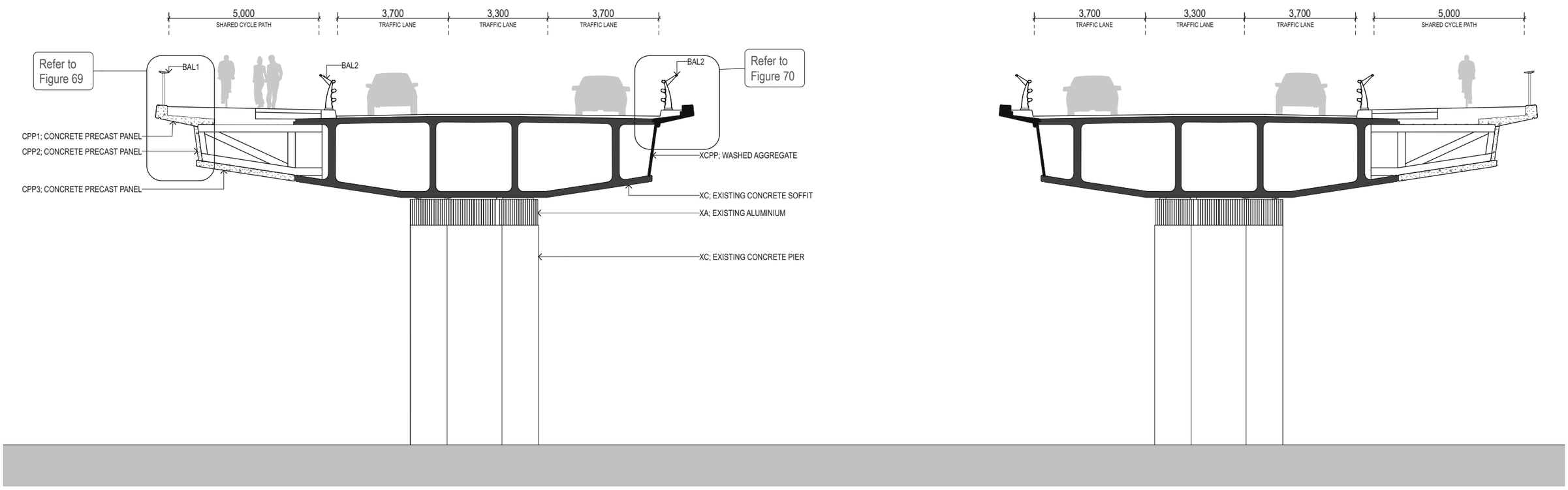


Figure 68: Proposed bridge cross section

4.5 Bridge barriers and balustrades

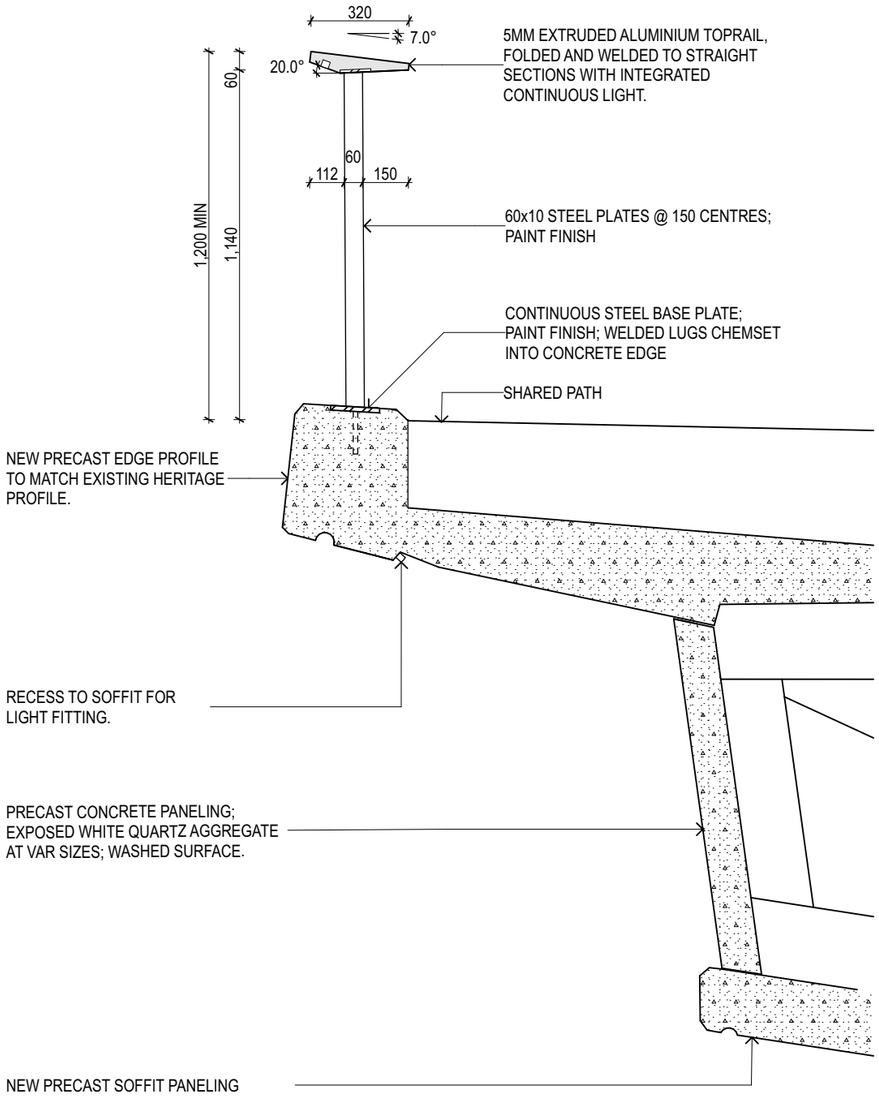


Figure 69: Detail of bridge extension section (scale 1:20)

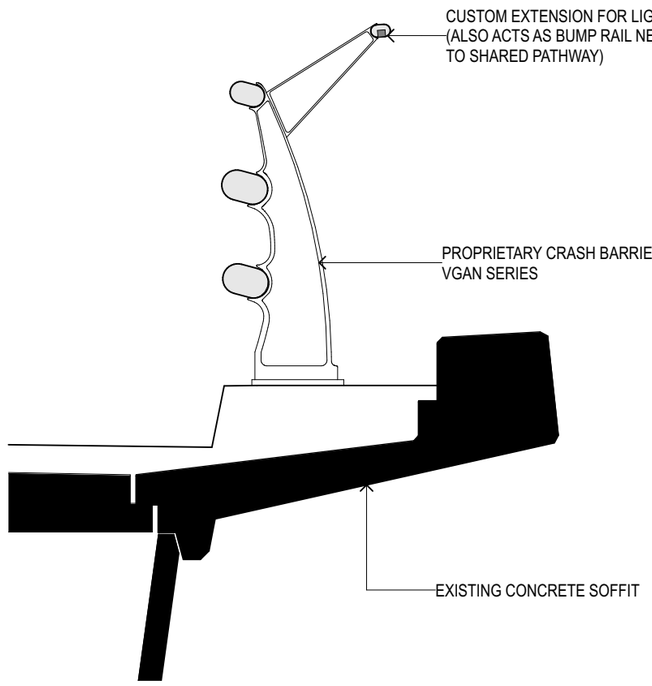


Figure 70: Detail of internal bridge edge (scale 1:20)

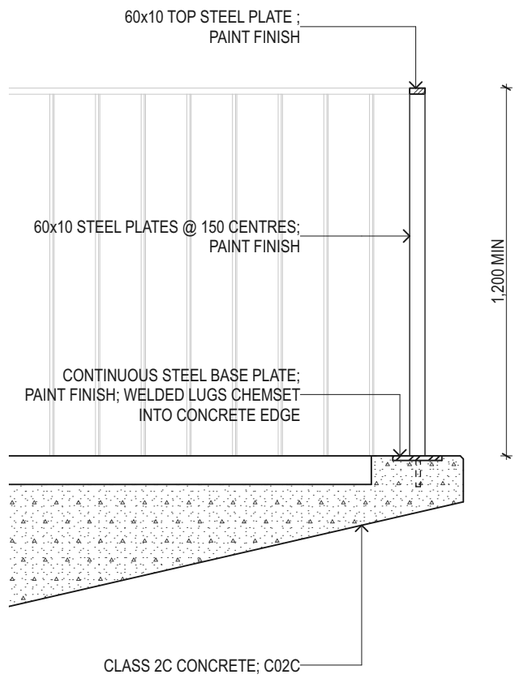
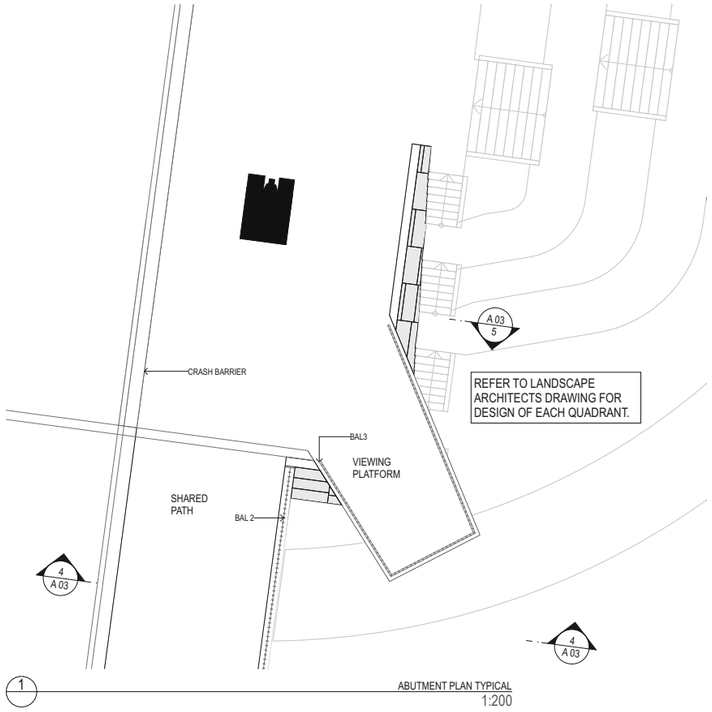
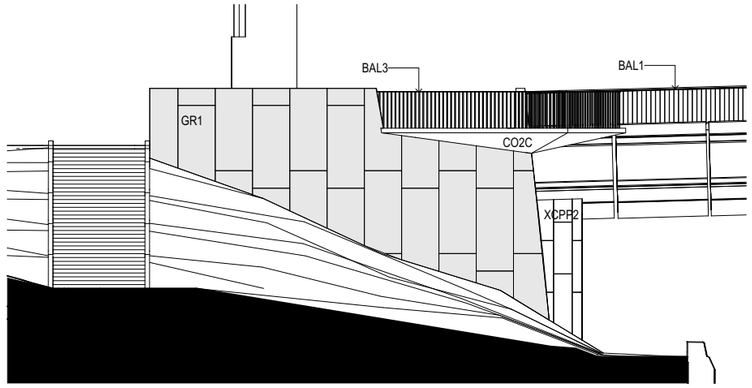


Figure 71: Detail of viewing platform balustrade (scale 1:20)

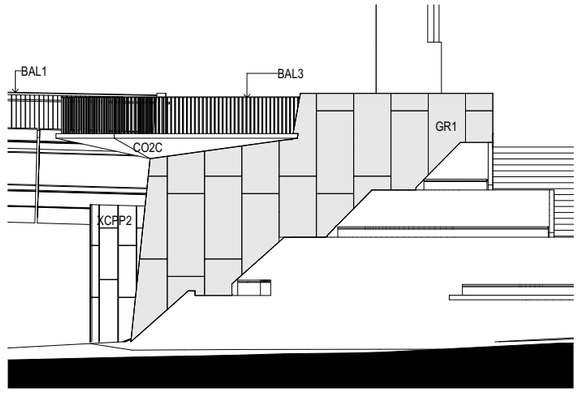
4.6 Abutments



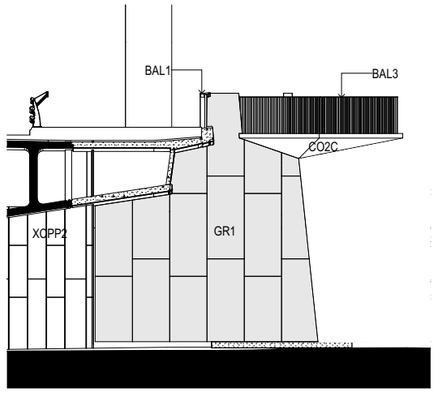
1 ABUTMENT PLAN TYPICAL
1:200



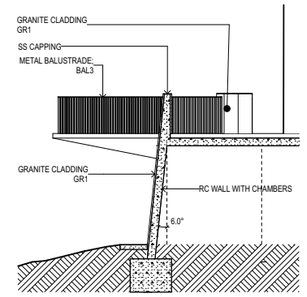
2 ABUTMENT SE ELEVATION EAST
1:200



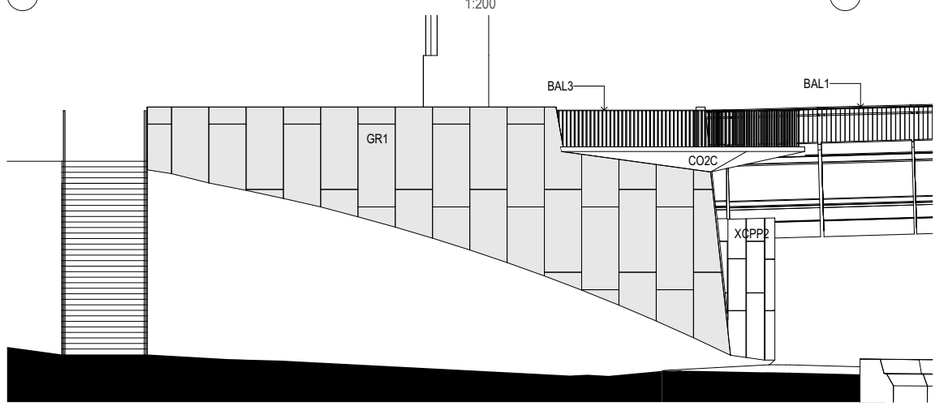
3 ABUTMENT NE ELEVATION EAST
1:200



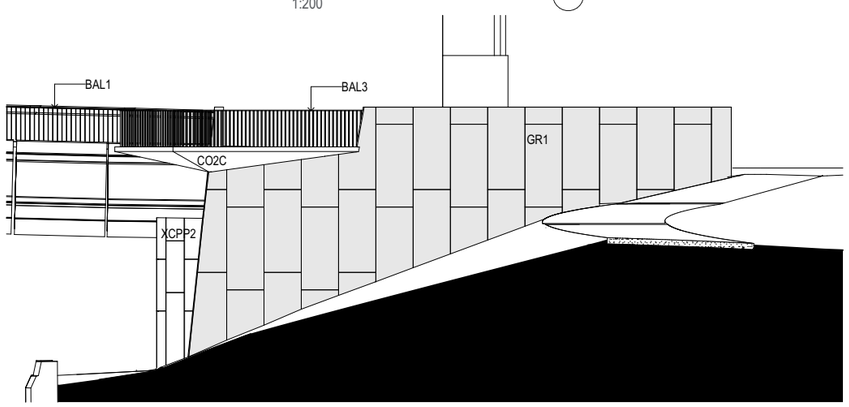
4 ABUTMENTS - TYPICAL SHORT ELEVATION
1:200



5 ABUTMENT - TYPICAL SECTION
1:200



6 ABUTMENT NW ELEVATION WEST
1:200



7 ABUTMENT SW ELEVATION WEST
1:200

Both north and south abutments are extended on three sides around Pylon, to be faced in brown granite as per existing. Original appears to be Tarana granite - quarry now closed. Close approximation is Desert Rose from UrbanStone.

4.7 Bridge extension materials and finishes

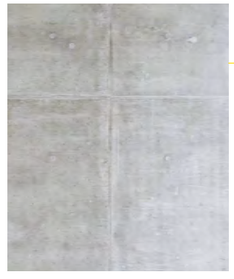
The following heritage design principles have been factored into the material and colour options provided.

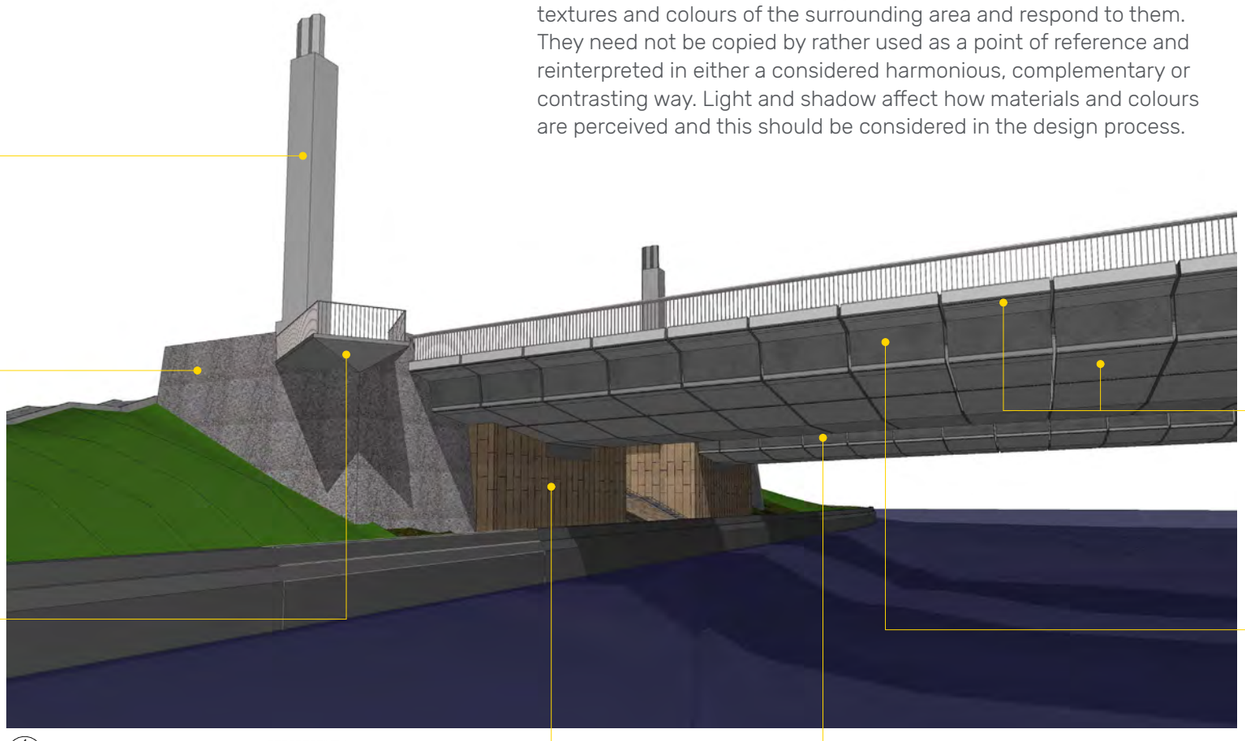
- Light colours to Bridge - responding to existing white precast with exposed Quartz aggregate.
- Light colours to steel and aluminium balustrades and crash barriers - white, silver.
- The soffit of the new Bridge extension is proposed to be concrete precast panels in line with the existing panelling and detail.
- New infill elements should recognise the characteristic materials, textures and colours of the surrounding area and respond to them. They need not be copied by rather used as a point of reference and reinterpreted in either a considered harmonious, complementary or contrasting way. Light and shadow affect how materials and colours are perceived and this should be considered in the design process.

Existing pylons:
Granite slab facing
Tarana pink granite
(cannot be sourced anymore)
XGR1

Abutments paneling:
Desert Rose from UrbanStone
GR1

Class 2c Concrete Soffit,
CO2C



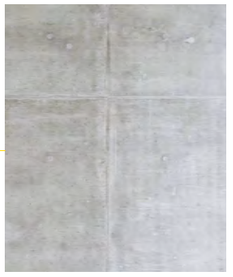


1 PERSPECTIVE 1

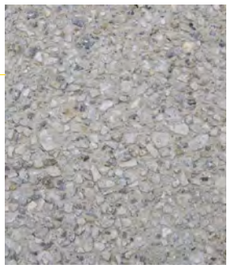
Existing exposed aggregate slab paneling. XCPP2

Existing precast concrete panel with exposed Quartz aggregate. XCPP1

Balustrades grey paint finish.
BAL 1, BAL 3



Pre-cast paneling suggested for soffit to match existing. CPP1, CPP3



White precast concrete panel with exposed white Quartz aggregate at var sizes.
Samples are currently be made to determine type of aggregate and type of cement. CPP 2

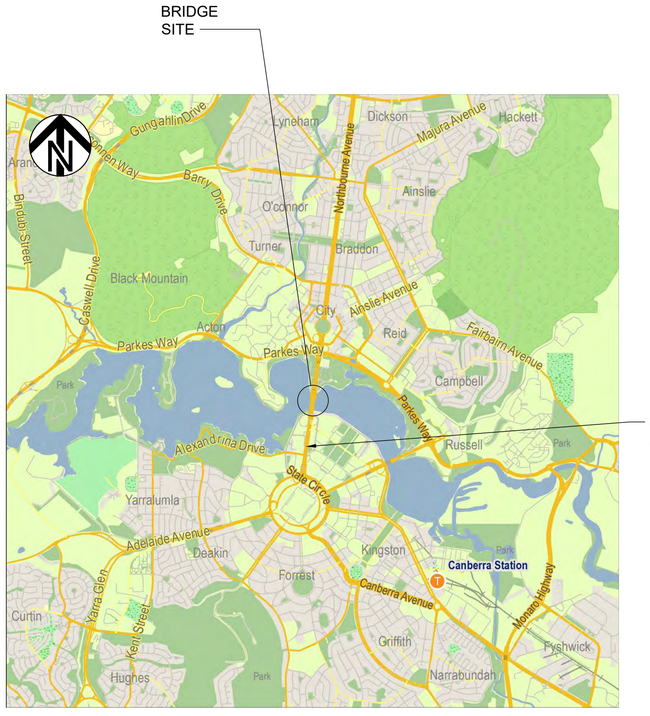
Australian Government
National Capital Authority

COMMONWEALTH AVENUE BRIDGE RENEWAL

ROADS AND CIVIL DRAWINGS SET

SCHEDULE OF DRAWINGS

GE-100	COVER SHEET AND DRAWING SCHEDULE
GE-101	GENERAL NOTES & LEGEND
GE-111	TYPICAL DETAILS
RD-101	GENERAL ARRANGEMENT PLAN SHEET 1
RD-102	GENERAL ARRANGEMENT PLAN SHEET 2
LS-101	LONG SECTIONS
XS-101	CROSS SECTIONS - MCCW



LOCALITY PLAN

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						DRAFTING CHECK	R. GOOSEN
						DESIGNER	M. WATSON
						DESIGN CHECK	L. MULYADI
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING

DESIGNER: SMEC Member of the Surbana Jurong Group
© ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT: Australian Government National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
COVER SHEET AND DRAWING SCHEDULE

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-GE-100	A

150 mm ON ORIGINAL
A1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

GENERAL CIVIL NOTES

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, MUNICIPAL INFRASTRUCTURE TECHNICAL SPECIFICATIONS (MITS) AND STANDARD DRAWINGS.
2. ALL DESIGN SUBGRADE VALUES MUST BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF PAVEMENT CONSTRUCTION
3. PROPERTY BOUNDARIES AND LAND ACCESS DETAILS SHOWN ON THE DRAWINGS ARE TAKEN FROM SUPPLIED CADASTRAL MAPPING AND/OR SURVEYED BOUNDARIES
4. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON THE SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REFERRED TO THE PRINCIPAL
5. ALL DISTURBED AREAS ARE TO BE REINSTATED
6. MAKE GOOD AND SMOOTH CONNECTION TO EXISTING WORK
7. ORIGIN OF LEVELS - AUSTRALIAN HEIGHT DATUM
8. USE FIGURED DIMENSIONS - DO NOT SCALE FROM DRAWINGS
9. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE
10. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN THE NECESSARY LICENCE, DESIGN, CONSTRUCT, MAINTAIN AND REMOVE ON COMPLETION TEMPORARY WATER POLLUTION AND EROSION CONTROL MEASURES IN ORDER TO COMPLY WITH ACT ENVIRONMENT PROTECTION ACT 1997
11. SETOUT OF ALL NEW WORKS SHALL BE CONFIRMED ON SITE WITH THE PRINCIPAL PRIOR TO THE COMMENCEMENT OF WORKS
12. SAWCUT EXISTING ASPHALT, CONCRETE AND PAVING AT ALL JOINS WITH NEW WORK.
13. ALL KERBS SHALL BE CONSTRUCTED ON DGS20 OF MINIMUM COMPACTED THICKNESS OF 100mm UNLESS OTHERWISE NOTED
14. ALL BACKFILLING UNDER PAVEMENTS AND PAVING SHALL BE IN ACCORDANCE WITH SPECIFICATION CONTRACT DOCUMENTS
15. WHERE EXISTING AND PROPOSED CONDUITS CROSS KERB LINES, THEIR LOCATIONS SHALL BE MARKED BY CASTING A LETTER 100mm HIGH INTO THE KERB. THE LETTERS USED SHALL BE "E" FOR ELECTRICITY CONDUITS, "G" FOR GAS CONDUITS AND "T" FOR TELECOMMUNICATION CONDUITS.

PROPOSED WORKS

- SCOPE OF WORKS
- CONSTRUCTION BOUNDARY
- CONTROL LINE
- BARRIER KERB / BARRIER KERB & GUTTER
- MOUNTABLE KERB / MOUNTABLE KERB & GUTTER
- PEDESTRIAN GUARD RAIL
- CONCRETE BRIDGE BARRIER
- PROPOSED CONCRETE PATH

EXISTING

- CADASTRAL BOUNDARY
- KERB / EDGE OF BITUMEN
- STORMWATER PIPE
- STORMWATER HEADWALL MANHOLE & PLANTATION SUMP
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- STREETLIGHT CABLE
- TELECOMMUNICATIONS NBN
- TELECOMMUNICATIONS NEXTGEN
- TELECOMMUNICATIONS OPTUS
- TELECOMMUNICATIONS TELSTRA
- TELECOMMUNICATIONS AARNET
- TELECOMMUNICATIONS GOVERNMENT FIBRE
- HIGH PRESSURE GAS
- LOW PRESSURE GAS
- SEWER
- WATER
- UTILITY SERVICE PITS/POLES & STREETLIGHT
- TREE

150 mm ON ORIGINAL
A1

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TITLE	NAME
DRAFTER	N. BROOKE-TAYLOR
DRAFTING CHECK	R. GOOSEN
DESIGNER	M. WATSON
DESIGN CHECK	L. MULYADI
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING: SCALE 1:500 (5 0 10 20 25 m)

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149 — SMEC PROJECT No 3002870

CLIENT: Australian Government, National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
GENERAL NOTES & LEGEND

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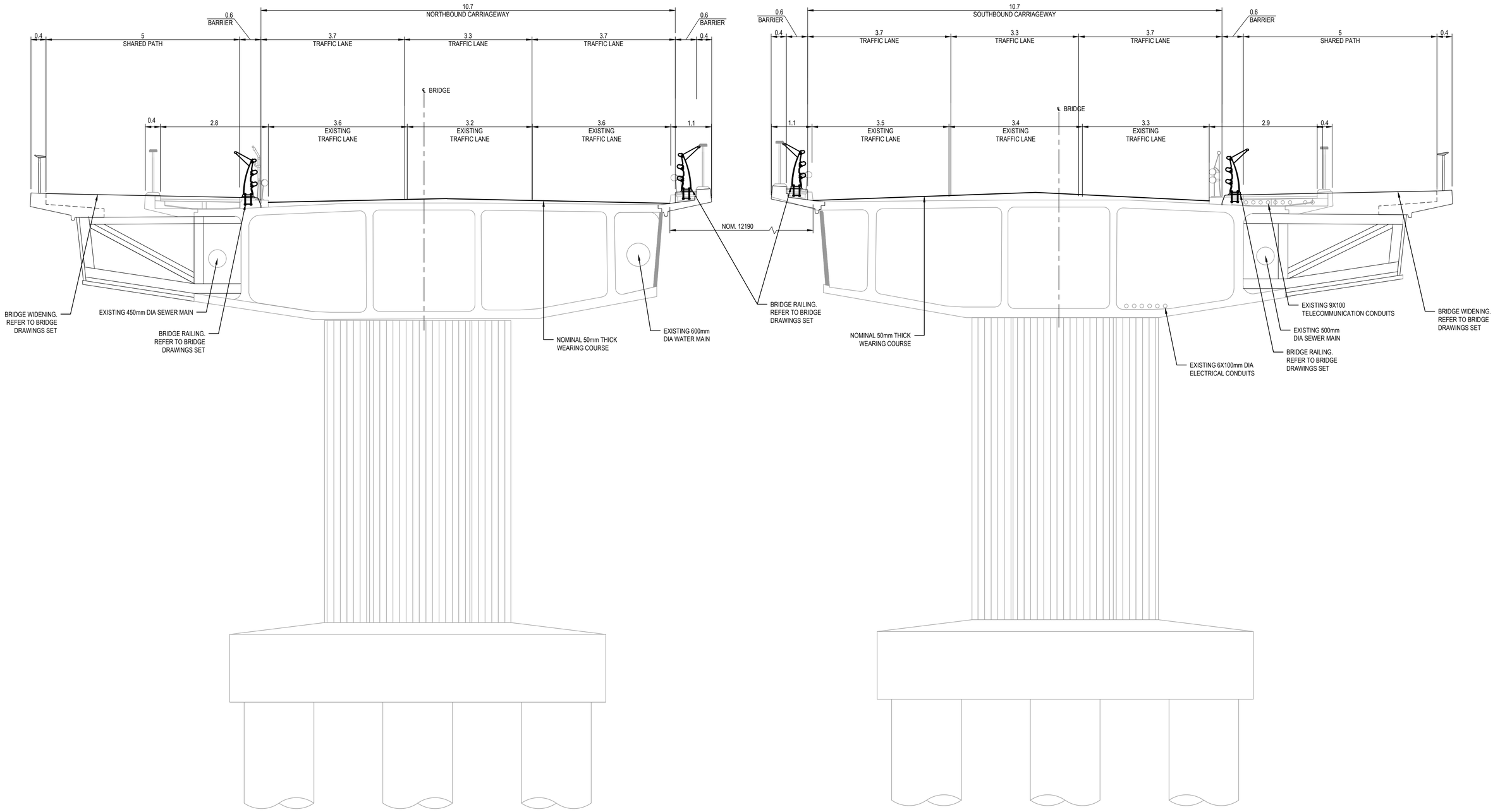

NORTH BOUND

SOUTH BOUND

TYPICAL CROSS SECTION - PROPOSED BRIDGE WIDENING

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SCALES AT A1 SIZE DRAWING: SCALE 1:50 (0.5 0 1 2 2.5 m)

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149 — SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
TYPICAL DETAILS SHEET 1

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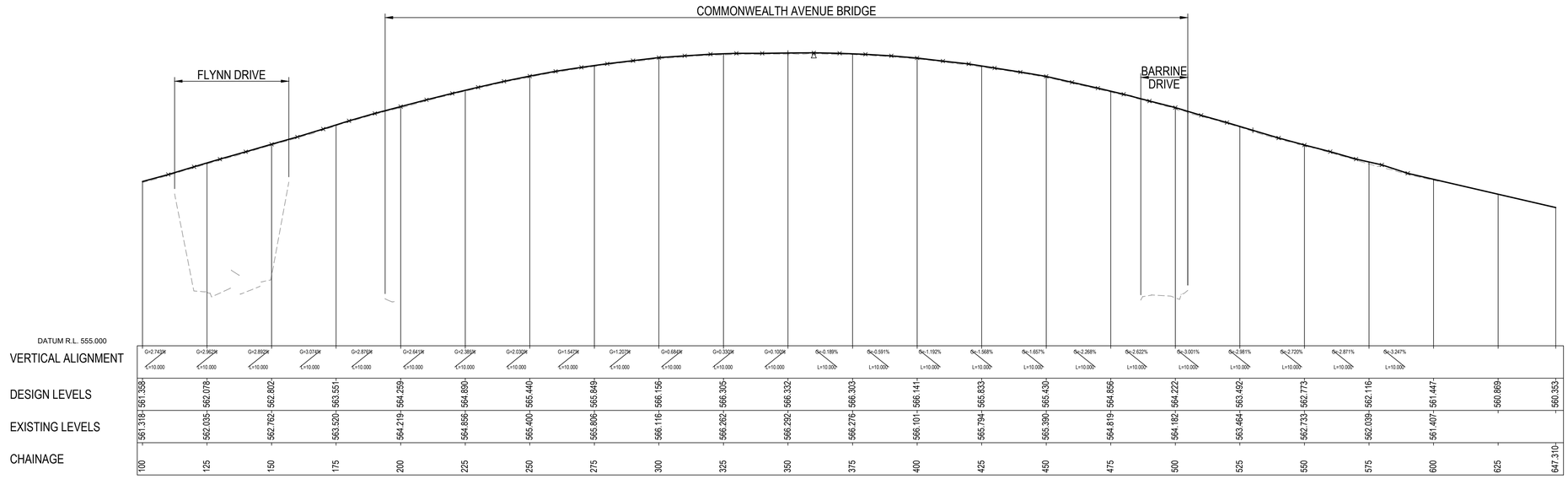
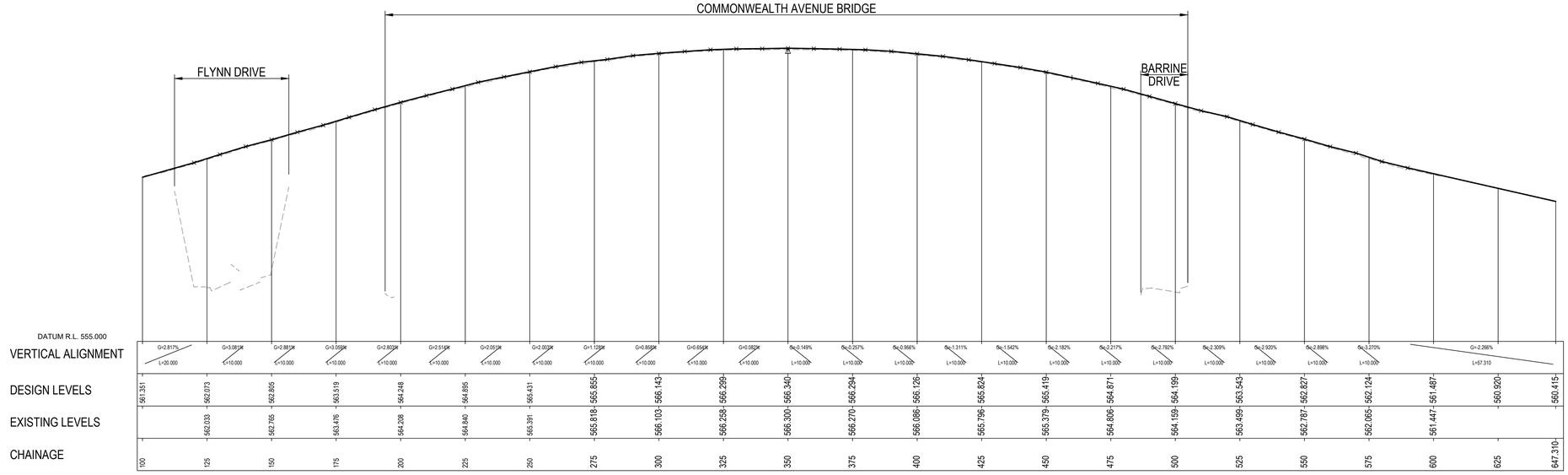


LONGITUDINAL SECTION ALONG CONTROL MCCW (NORTHBOUND)
H 1:1000 V 1:200



LONGITUDINAL SECTION ALONG CONTROL MCCE (SOUTHBOUND)
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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	TITLE	NAME
X_ACTGov_TCCS_A1 X_LS	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN	DRAFTER	N. BROOKE-TAYLOR
						DRAFTING CHECK	R. GOOSEN
						DESIGNER	M. WATSON
						DESIGN CHECK	L. MULYADI
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:200 2 0 2 4 6 8 10 m
SCALE 1:1000 10 0 10 20 30 40 50 m

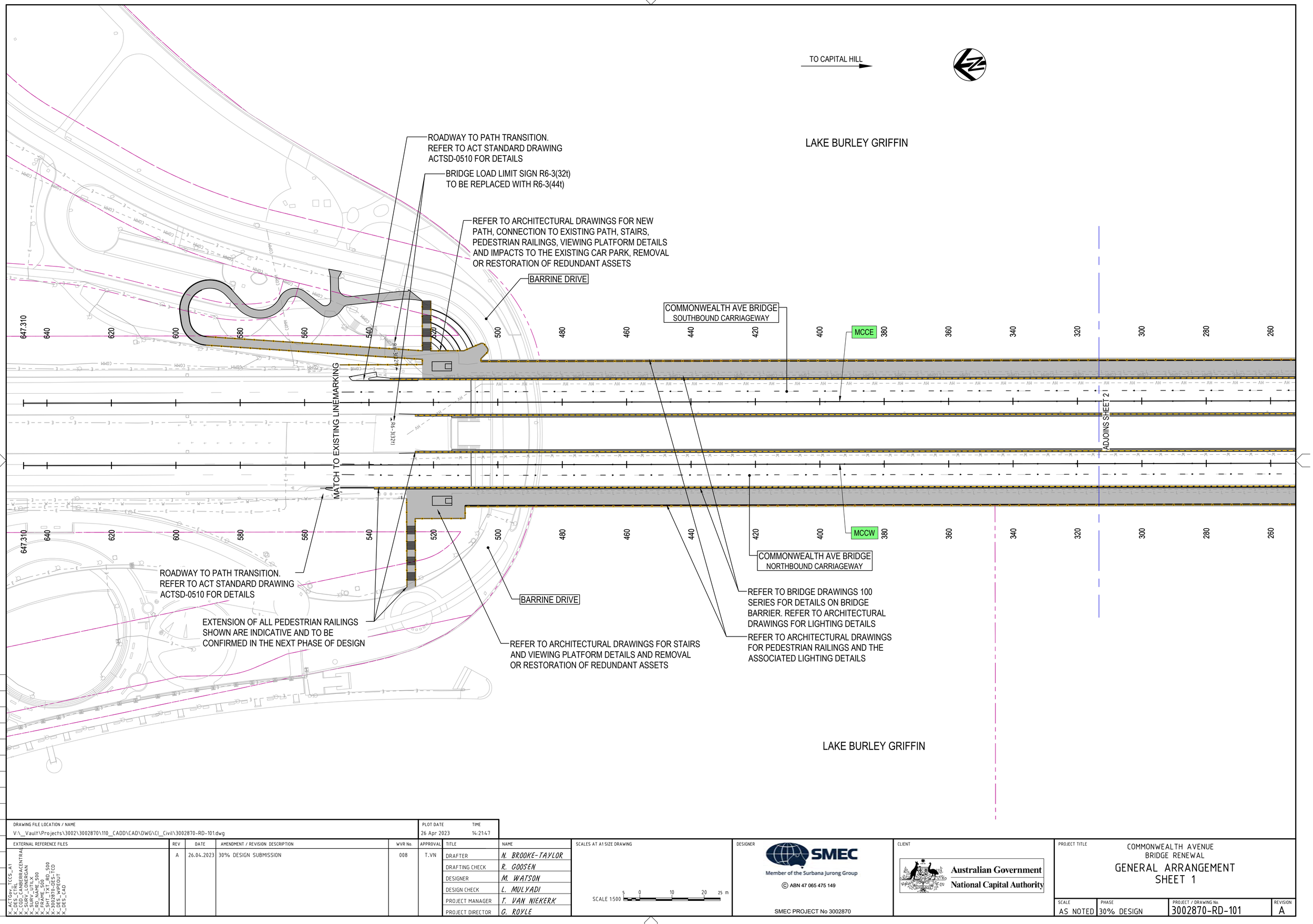
DESIGNER
SMEC
Member of the Surbana Jurong Group
© ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT
Australian Government
National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
LONG SECTIONS
SHEET 1

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-LS-101	A

150 mm ON ORIGINAL
A1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 mm ON ORIGINAL
A1

DRAWING FILE LOCATION / NAME
V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\CI_Civil\3002870-RD-101.dwg

PLOT DATE 26 Apr 2023 TIME 14:21:47

EXTERNAL REFERENCE FILES
X_ACTGov_TCCS_A1
X_DES_CTRL
X_GDV_LANDSCAPECENTRAL
X_SURV_LOWERGRAN
X_SURV_UTILX
X_RD_NAME_500
X_RD_NAME_50
X_SHT_TXT_RD_500
X-3002870-DES-TCD
X_DES_WIPEOUT
X_DES_CAD

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN

TITLE	NAME
DRAFTER	N. BROOKE-TAYLOR
DRAFTING CHECK	R. GOOSEN
DESIGNER	M. WATSON
DESIGN CHECK	L. MULYADI
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:500 5 0 10 20 25 m

DESIGNER
SMEC
Member of the Surbana Jurong Group
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SMEC PROJECT No 3002870

CLIENT
Australian Government
National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
GENERAL ARRANGEMENT
SHEET 1

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-RD-101	A

TO CANBERRA CITY

TO CAPITAL HILL

LAKE BURLEY GRIFFIN

EXTENSION OF ALL PEDESTRIAN RAILINGS SHOWN ARE INDICATIVE AND TO BE CONFIRMED IN THE NEXT PHASE OF DESIGN

COMMONWEALTH AVE BRIDGE
SOUTHBOUND CARRIAGEWAY

MCCE

FLYNN DRIVE

320 300 280 260 240 220 200 180 160 140 120 100.000

ADJOINS SHEET 1

MATCH TO EXISTING LINEMARKING

R6-3(32t)

COMMONWEALTH AVE BRIDGE
NORTHBOUND CARRIAGEWAY

MCCW

BRIDGE LOAD LIMIT SIGN R6-3(32t) TO BE REPLACED WITH R6-3(44t)

REPLACE EXISTING BARRIER ON EXISTING ALIGNMENT ACROSS FLYNN PLACE BRIDGE. REFER TO BRIDGE DRAWINGS 100 SERIES FOR BRIDGE BARRIER DETAILS

REFER TO BRIDGE DRAWINGS 100 SERIES FOR DETAILS ON BRIDGE BARRIER. REFER TO ARCHITECTURAL DRAWINGS FOR LIGHTING DETAILS

REFER TO ARCHITECTURAL DRAWINGS FOR PEDESTRIAN RAILINGS AND THE ASSOCIATED LIGHTING DETAILS

REFER TO ARCHITECTURAL DRAWINGS FOR NEW PATH, CONNECTION TO EXISTING PATH, STAIRS, PEDESTRIAN RAILING, VIEWING PLATFORM DETAILS AND REMOVAL OR RESTORATION OF REDUNDANT ASSETS

FLYNN DRIVE

LAKE BURLEY GRIFFIN

150 mm ON ORIGINAL

A1

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\CI_Civil\3002870-RD-102.dwg

PLOT DATE: 26 Apr 2023 TIME: 14:22:16

EXTERNAL REFERENCE FILES:
X_ACTGov_TCCS_A1
X_DES_CTRL
X_GID_CANBERRACENTRAL
X_SHP_LDREGION
X_SURV_UTILX
X_RD_NAME_500
X_RAIL_ISG
X_SMT_TXT_RD_500
X-3002870-DES-TCD
X_DES_WIPEOUT
X_DES_CAD

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN

TITLE	NAME
DRAFTER	N. BROOKE-TAYLOR
DRAFTING CHECK	R. GOOSEN
DESIGNER	M. WATSON
DESIGN CHECK	L. MULYADI
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING

SCALE 1:500 5 0 10 20 25 m

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149

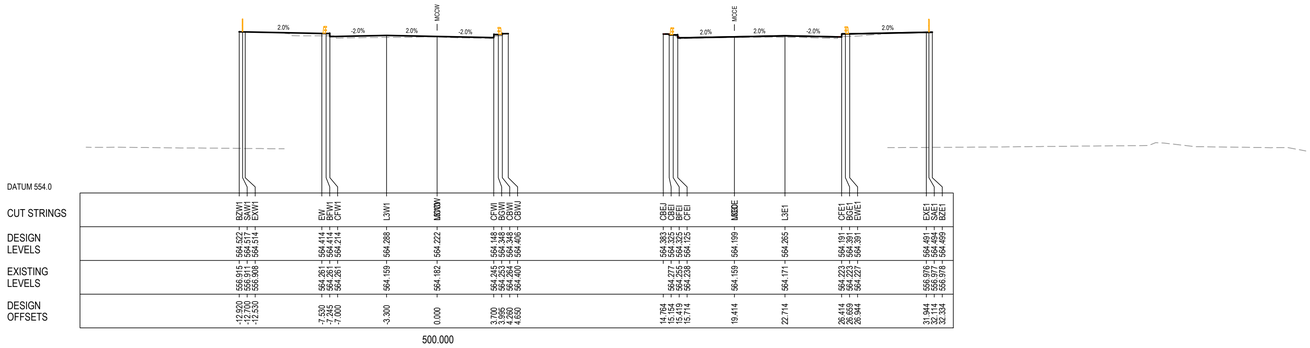
SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL

GENERAL ARRANGEMENT SHEET 2

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-RD-102	A



DRAWING FILE LOCATION / NAME	PLOT DATE	TIME
V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\CI_Civil\3002870-XS-101.dwg	26 Apr 2023	14:22:41

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X_ACTGov_TCCS_A1 X_XS	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN

TITLE	NAME
DRAFTER	N. BROOKE-TAYLOR
DRAFTING CHECK	R. GOOSEN
DESIGNER	M. WATSON
DESIGN CHECK	L. MULYADI
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:200 2 0 2 4 6 8 10 m

DESIGNER
SMEC
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© ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT
Australian Government
National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
CROSS SECTION
MCCW
SHEET 1

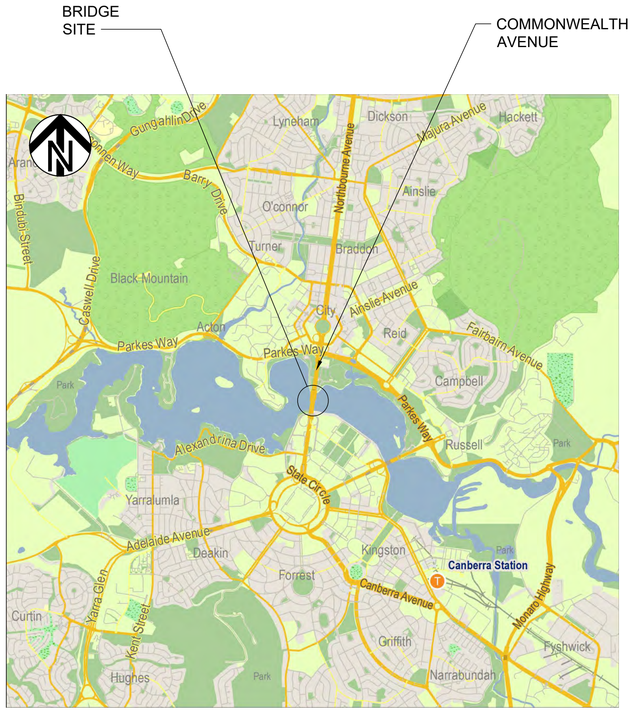
SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-XS-101	A

150 mm ON ORIGINAL
A1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Australian Government
National Capital Authority

COMMONWEALTH AVENUE BRIDGE RENEWAL

SCHEDULE OF DRAWINGS



LOCALITY PLAN

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-100.dwg					PLOT DATE: 26 Apr 2023	TIME: 15:47:52	
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	TITLE	NAME
X_ACTGov_TCCS_A1	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN	DRAFTER	KV. ARULMURUGAN
						DRAFTING CHECK	S. THIRU
						DESIGNER	M. BALAKRISHNAN
						DESIGN CHECK	V. VIGNESWARAN
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING

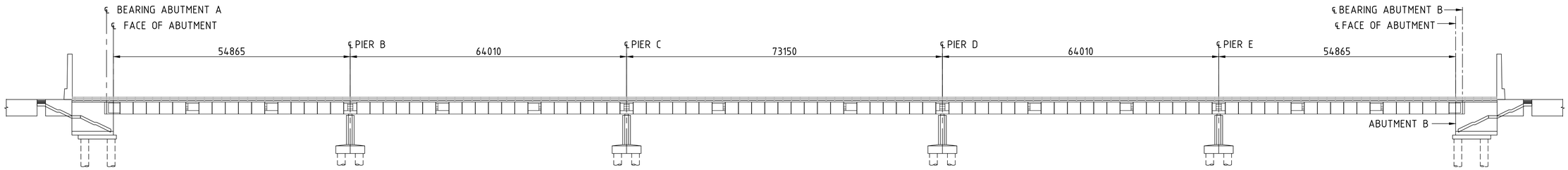
DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149 — SMEC PROJECT No 3002870

CLIENT: Australian Government, National Capital Authority

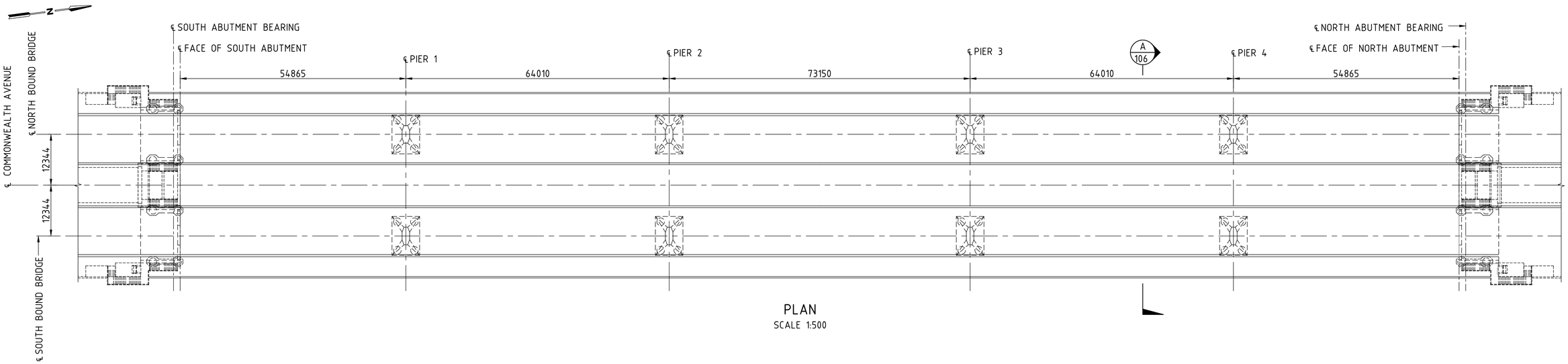
PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
COVER SHEET AND DRAWING SCHEDULE

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-100	A

A1 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 150 mm ON ORIGINAL



ELEVATION
SCALE 1:500



PLAN
SCALE 1:500

NOTES
1. FOR GENERAL NOTES, REFER TO DRAWING NO 111.

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-104.dwg					PLOT DATE: 26 Apr 2023	TIME: 14:23:43	
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	TITLE	NAME
X_ACTGov_TCCS_A1 X_DES X_DES_CTRL	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN	DRAFTER	KV. ARULMURUGAN
						DRAFTING CHECK	S. THIRU
						DESIGNER	M. BALAKRISHNAN
						DESIGN CHECK	V. VIGNESWARAN
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:500 5 0 10 20

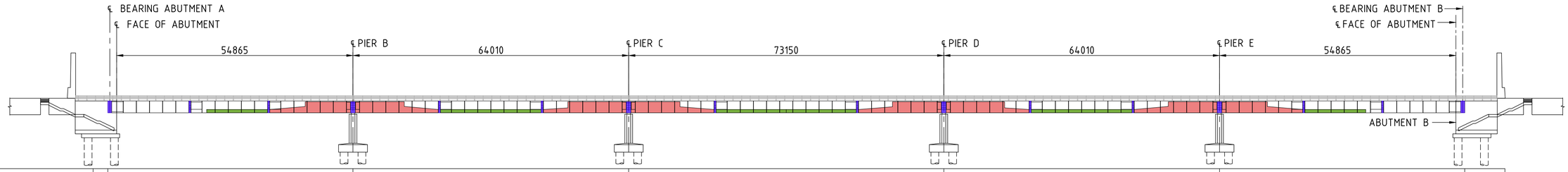
DESIGNER
SMEC
Member of the Surbana Jurong Group
© ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT
Australian Government
National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
GENERAL ARRANGEMENT - EXISTING

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-104	A

150 mm ON ORIGINAL
A1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

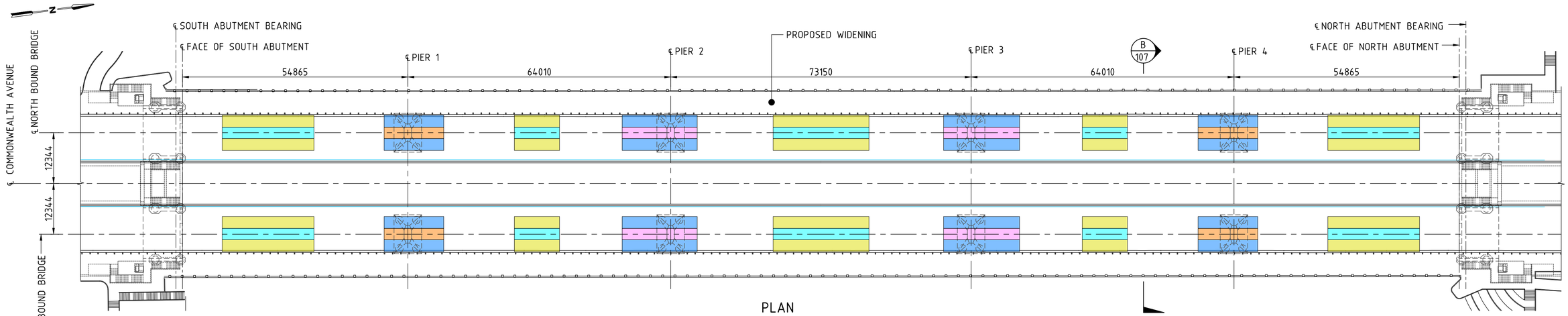


DESIGN RL (NORTH BOUND)	563.988	565.334	566.137	566.139	565.283	563.909
CHAINAGE (NORTH BOUND)	192.368	248.833	312.841	385.993	450.001	506.466

ELEVATION - NORTH BOUND BRIDGE
SCALE 1:500

WEB STRENGTHENING REINFORCEMENT (PER TENDON GROUP)			
LEGEND	LONGITUDINAL REINFORCEMENT	VERTICAL REINFORCEMENT	HORIZONTAL DOWEL REINFORCEMENT
		G1 N16-L-600	G1 N16-L-600
	G5 N16-S-200	G3 N16-S-300	G4 2 N16-H-300

LEGEND	OTHER WORKS
	WIDENING OF ACCESS HOLES
	PROPOSED WIDENING



PLAN
SCALE 1:500

FLEXURAL STRENGTHENING REINFORCEMENT		
LEGEND	LONGITUDINAL REINFORCEMENT	DOWEL REINFORCEMENT
BOTTOM SLAB STRENGTHENING		
	G11 17-N32-S	G12 N16-A-600
		G13 N16-A-600
		G14 N16-V-600
		G15 N16-L-600
	G16 13-N28-S	G17 N16-LL-600
		G18 N16-L-600
TOP SLAB STRENGTHENING		
	G18 17-2N32-S	G21 N16-AV-250
		G22 2-N16-A-250
		G23 2-N16-V-250
	G20 13-2N28-S	G24 N16-LL-250
		G25 4-N16-L-250
	G20 13-2N32-S	G24 N16-LL-250
		G25 4-N16-L-250

NOTES
1. FOR GENERAL NOTES, REFER TO DRAWING NO 111.

150 mm ON ORIGINAL
A1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-105.dwg
PLOT DATE: 26 Apr 2023 TIME: 14:24:07

EXTERNAL REFERENCE FILES: X_ACTGov_TCCS_A1, X_IDES, X_IDES_CTRL

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN

TITLE	NAME
DRAFTER	KV. ARULMURUGAN
DRAFTING CHECK	S. THIRU
DESIGNER	M. BALAKRISHNAN
DESIGN CHECK	V. VIGNESWARAN
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

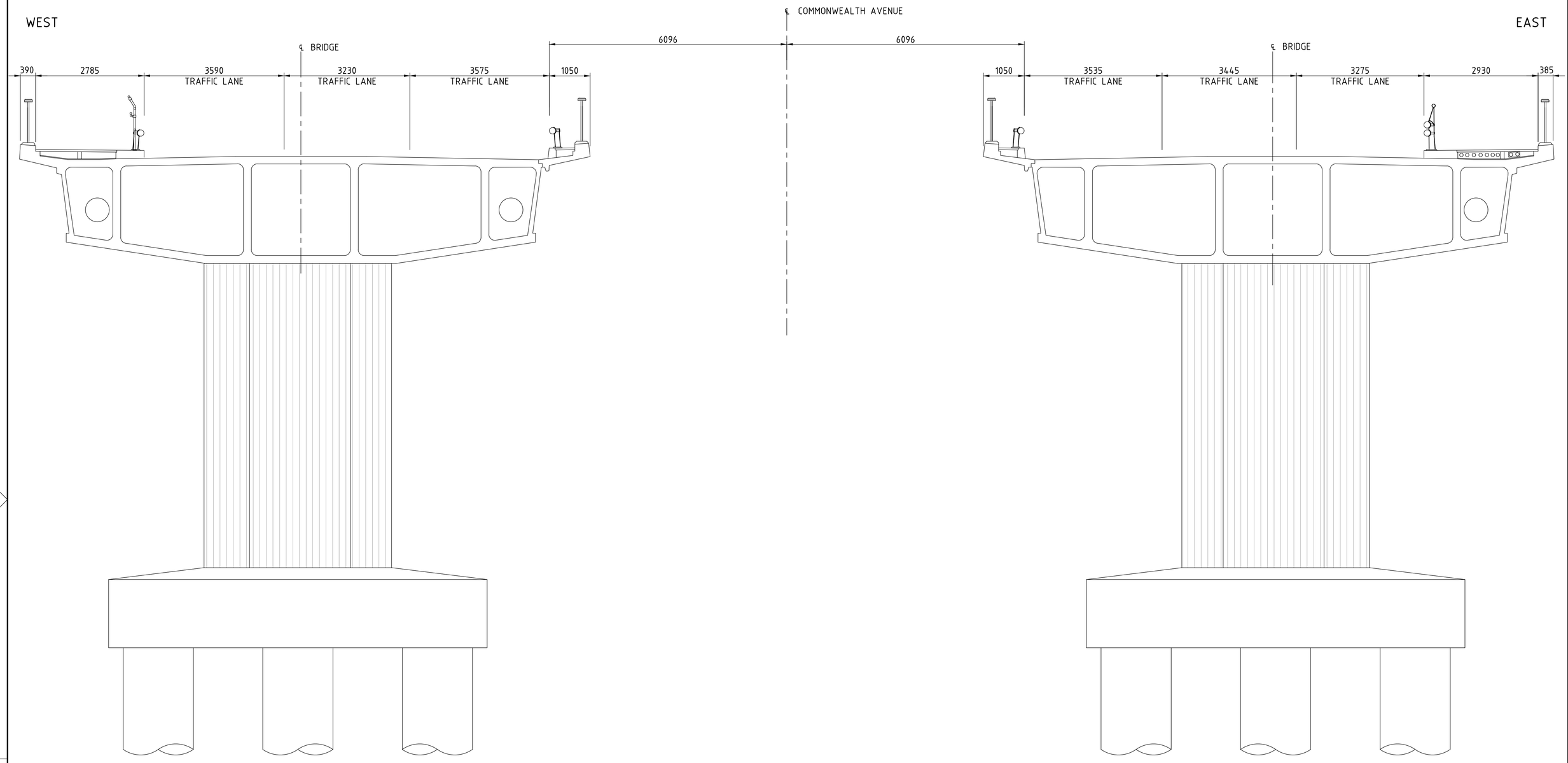
SCALES AT A1 SIZE DRAWING: SCALE 1:500 (5 0 10 20)

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
GENERAL ARRANGEMENT - PROPOSED

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-105	A



SECTION A/104
SCALE 1:50

TYPICAL EXISTING CROSS SECTION

NOTES
1. FOR GENERAL NOTES, REFER TO DRAWING NO 111.

150 mm ON ORIGINAL
A1
X_ACTGov_TCCS_A1

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-106.dwg
PLOT DATE: 26 Apr 2023 TIME: 14:24:52

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN

TITLE	NAME
DRAFTER	KV. ARULMURUGAN
DRAFTING CHECK	S. THIRU
DESIGNER	M. BALAKRISHNAN
DESIGN CHECK	V. VIGNESWARAN
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

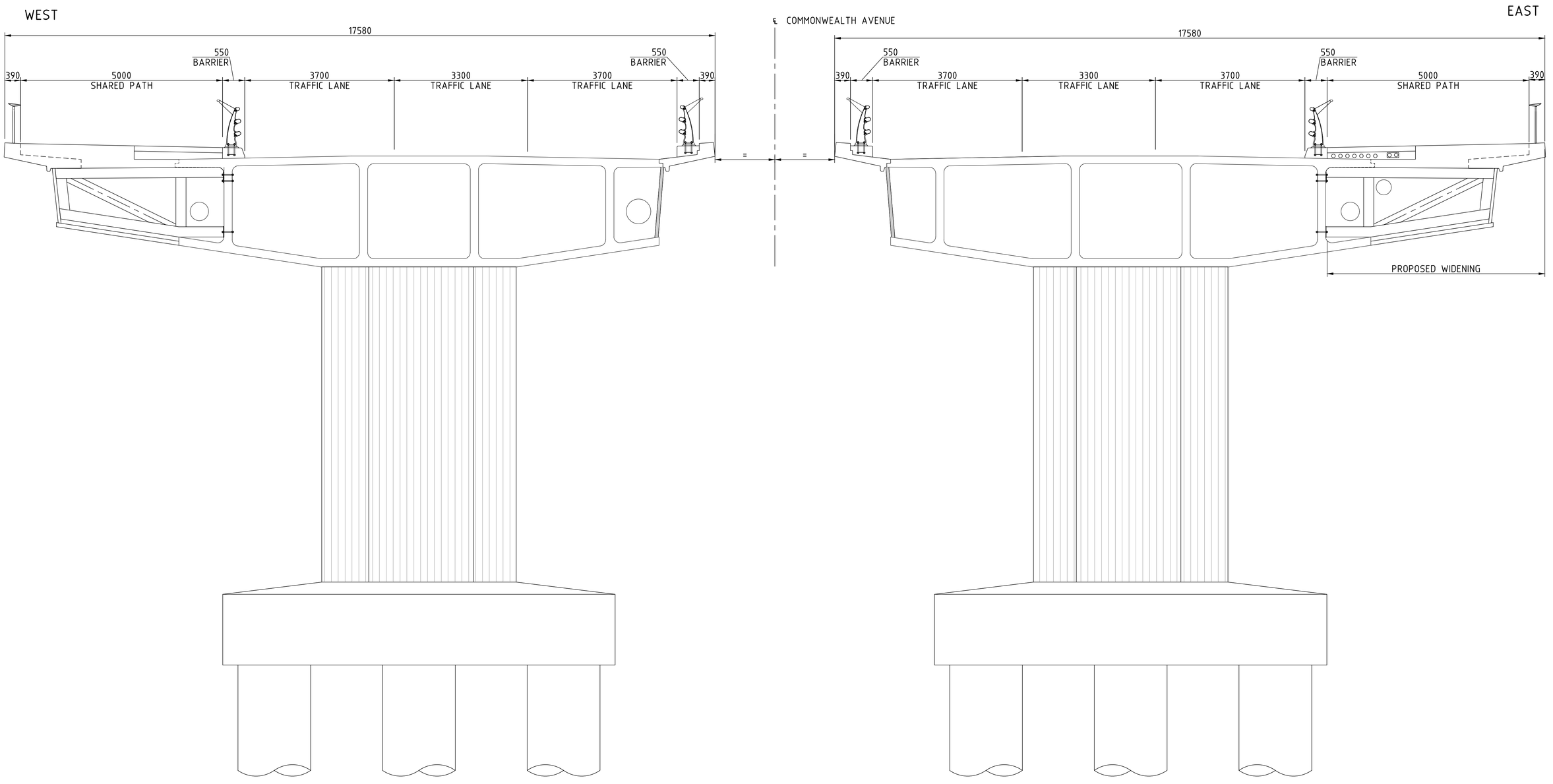
SCALES AT A1 SIZE DRAWING
SCALE 1:50 (0.5 0 1 2)

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
TYPICAL CROSS SECTION SHEET 1

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-106	A



SECTION B / 105
SCALE 1:50

TYPICAL PROPOSED CROSS SECTION

NOTES
1. FOR GENERAL NOTES, REFER TO DRAWING NO 111.

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-107.dwg					PLOT DATE: 26 Apr 2023	TIME: 14:25:15	
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	TITLE	NAME
	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN	DRAFTER	KV. ARULMURUGAN
						DRAFTING CHECK	S. THIRU
						DESIGNER	M. BALAKRISHNAN
						DESIGN CHECK	V. VIGNESWARAN
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING: SCALE 1:50 (0.5, 0, 1, 2)

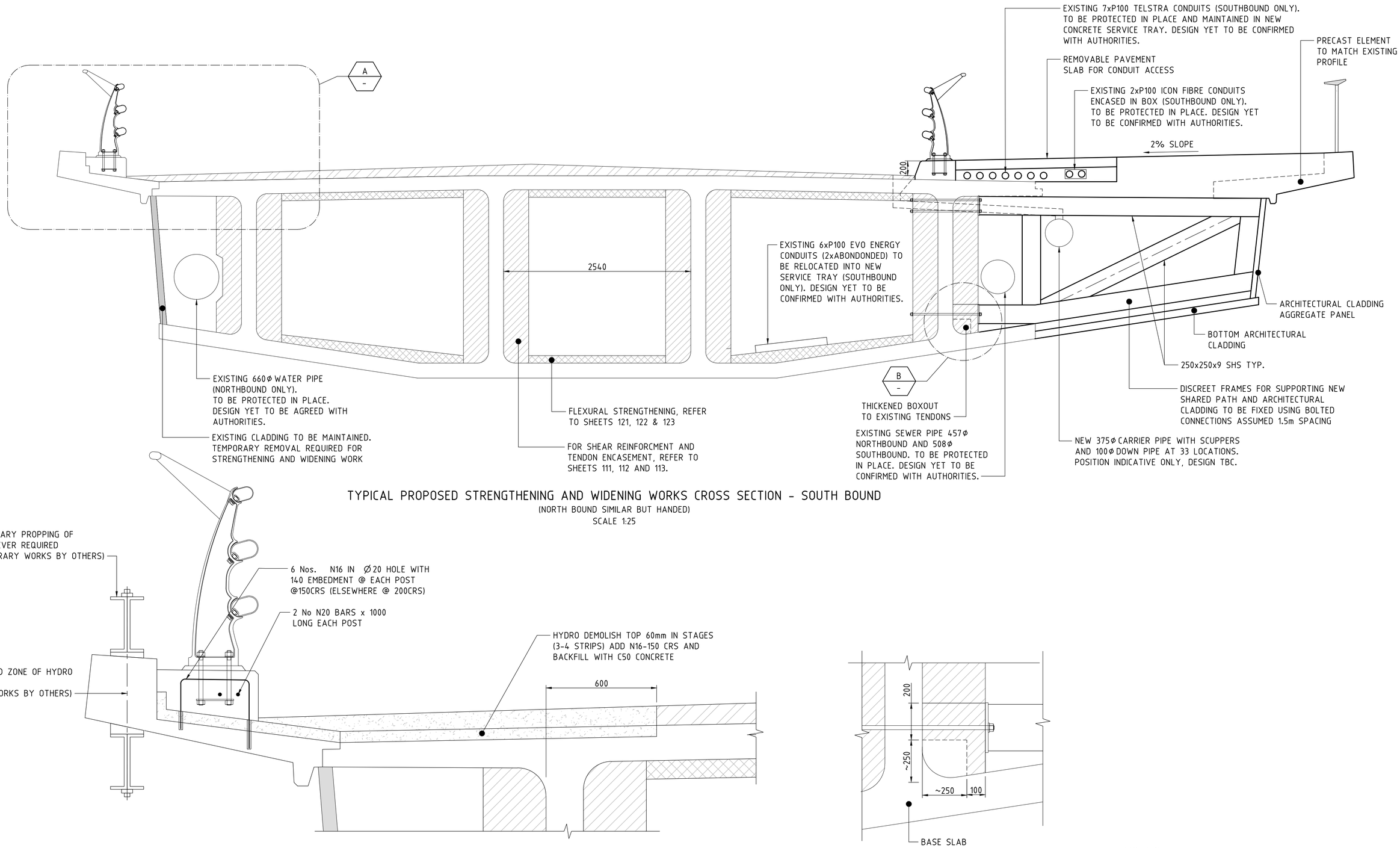
DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149 — SMEC PROJECT No 3002870

CLIENT: Australian Government, National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
TYPICAL CROSS SECTION SHEET 2

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-107	A

150 mm ON ORIGINAL
A1
X_ACTGov_TCCS_A1



TYPICAL PROPOSED STRENGTHENING AND WIDENING WORKS CROSS SECTION - SOUTH BOUND

(NORTH BOUND SIMILAR BUT HANDED)
SCALE 1:25

DETAIL A
SCALE 1:10

DETAIL B
SCALE 1:10

NOTES

1. FOR GENERAL NOTES, REFER TO DRAWING NO 111.

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-108.dwg				PLOT DATE: 26 Apr 2023	TIME: 14:25:39	
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	TITLE / NAME
	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN	DRAFTER: KV. ARULMURUGAN
						DRAFTING CHECK: S. THIRU
						DESIGNER: M. BALAKRISHNAN
						DESIGN CHECK: V. VIGNESWARAN
						PROJECT MANAGER: T. VAN NIEKERK
						PROJECT DIRECTOR: G. ROYLE

SCALES AT A1 SIZE DRAWING: SCALE 1:25 (0.25 0 0.50 1.00); SCALE 1:10 (0.1 0 0.1 0.2 0.3 0.4 0.5)

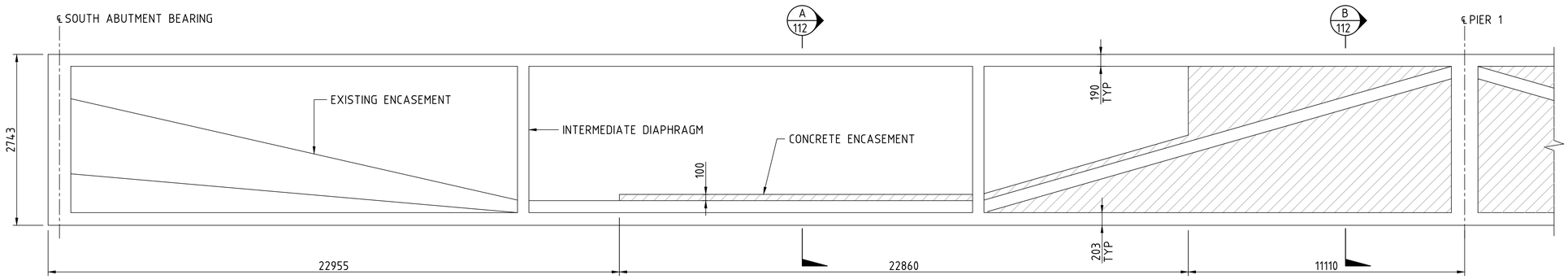
DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149 — SMEC PROJECT No 3002870

CLIENT: Australian Government, National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
TYPICAL CROSS SECTION SHEET 3

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-108	A

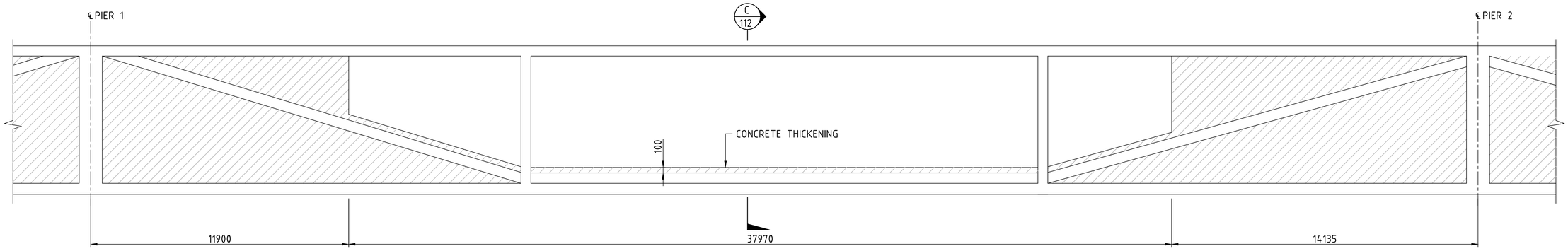
150 mm ON ORIGINAL
A1
X_ActGov_TCCS_A1



LONGITUDINAL SECTION - SPAN 1

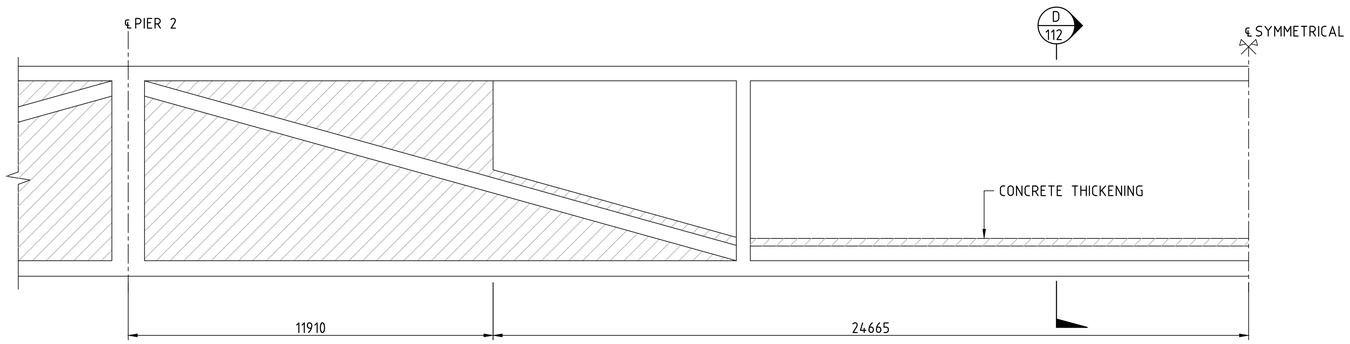
(SPAN 5 SIMILAR)

(WEB 2 SHOWN, ALL WEBS SIMILAR - BOTH SIDES)



LONGITUDINAL SECTION - SPAN 2

(SPAN 4 SIMILAR)



LONGITUDINAL SECTION - SPAN 3

GENERAL NOTES

1. ALL EXISTING SURFACES IN CONTACT WITH NEW ENCASEMENT CONCRETE SHALL BE CLEANED AND ROUGHENED TO AN AMPLITUDE OF 6mm.
2. ALL HOLES FOR REINFORCEMENT SHALL BE DRILLED AND CLEANED IN ACCORDANCE TO THE HILTI INSTALLATION REQUIREMENTS. INSTALLATION CONDITION SHALL BE DRY. HOLE DIAMETER IS 18mmØ AND REINFORCEMENT SHALL BE GROUTED IN HOLES WITH HILTI HIT-HY-200-R-V3 IN ACCORDANCE WITH HILTI REQUIREMENTS.
3. CONCRETE GRADE SHALL BE 50MPa AT 28 DAY CHARACTERISTIC COMPRESSIVE STRENGTH, NOMINAL COVER TO REINFORCEMENT IS 30mm.
4. UNLESS NOTED OTHERWISE THE MINIMUM LAP LENGTHS OF BARS SHALL BE AS FOLLOWS:

BAR SIZE:	N12	N16	N20	N24	N28	N32
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR	580	760	980	1290	1630	2000
b) OTHER BARS	440	580	750	990	1250	1525

5. CLEAR DISTANCE BETWEEN LAPPED BARS SHALL NOT EXCEED 3x THE BAR DIAMETER.
6. REINFORCEMENT MAY BE DISPLACED SLIGHTLY WHERE NECESSARY TO CLEAR DOWELS, ANCHORS, LIFTING DEVICES, DUCTS, DRAINAGE LINES AND GENERAL FITMENTS.

150 mm ON ORIGINAL
A1
X_ACTGov_TCCS_A1

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-111.dwg
PLOT DATE: 26 Apr 2023 TIME: 14:26:24

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	26.04.2023	30% DESIGN SUBMISSION	008	T.VN

TITLE	NAME
DRAFTER	KV. ARULMURUGAN
DRAFTING CHECK	S. THIRU
DESIGNER	M. BALAKRISHNAN
DESIGN CHECK	V. VIGNESWARAN
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

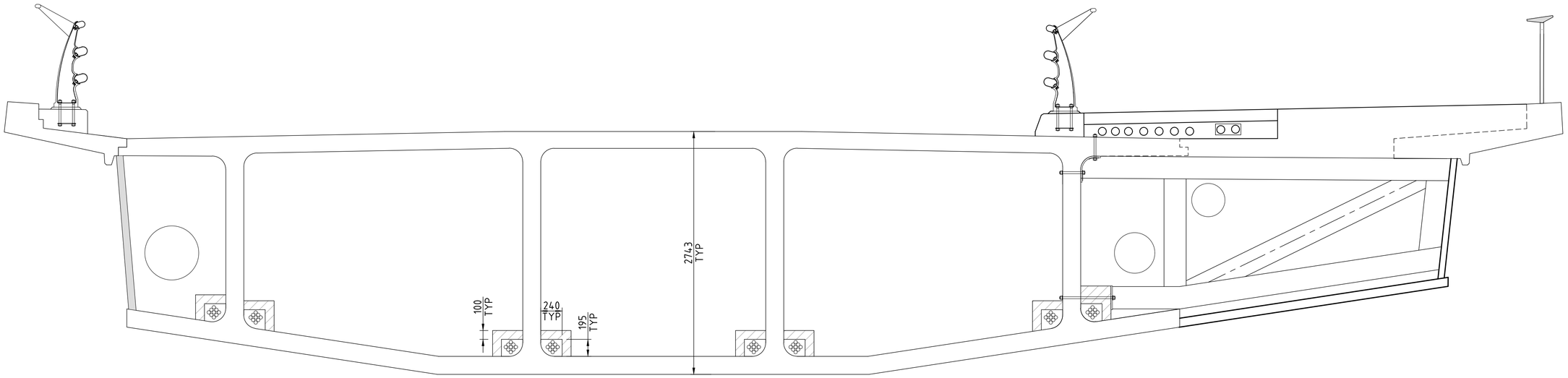
SCALES AT A1 SIZE DRAWING
HORIZ. 1:1000 10 0 10 20 30 40 50
VERT. 1:400 4 0 4 8 12 16 20

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
EXISTING TENDON ENCASEMENT SHEET 1

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-111	A



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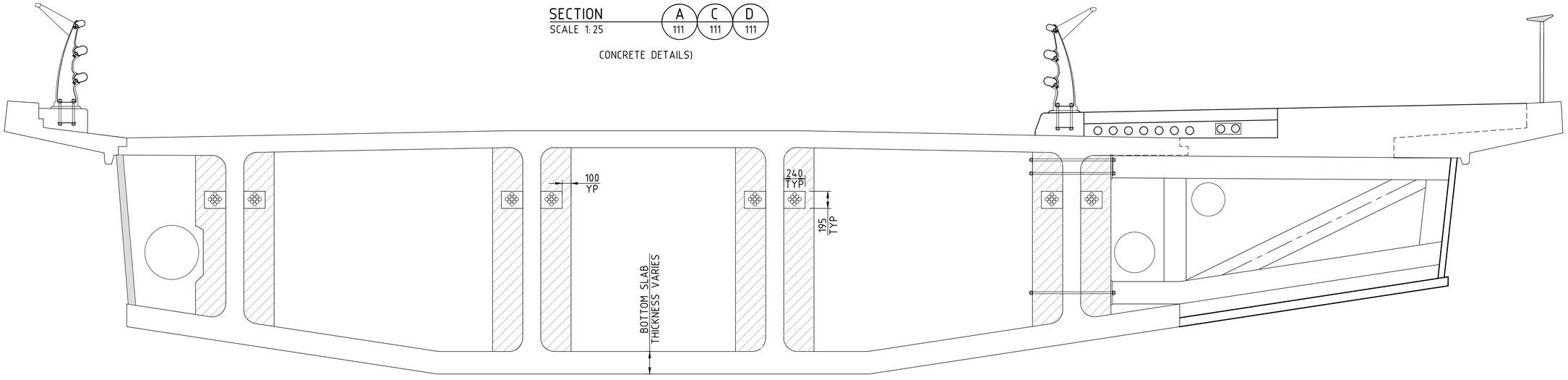

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(CONCRETE DETAILS)

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TITLE	NAME
DRAFTER	KV. ARULMURUGAN
DRAFTING CHECK	S. THIRU
DESIGNER	M. BALAKRISHNAN
DESIGN CHECK	V. VIGNESWARAN
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:25 0.25 0 0.50 1.00

DESIGNER: SMEC — Member of the Surbana Jurong Group

SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
EXISTING TENDON ENCASEMENT
SHEET 2

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
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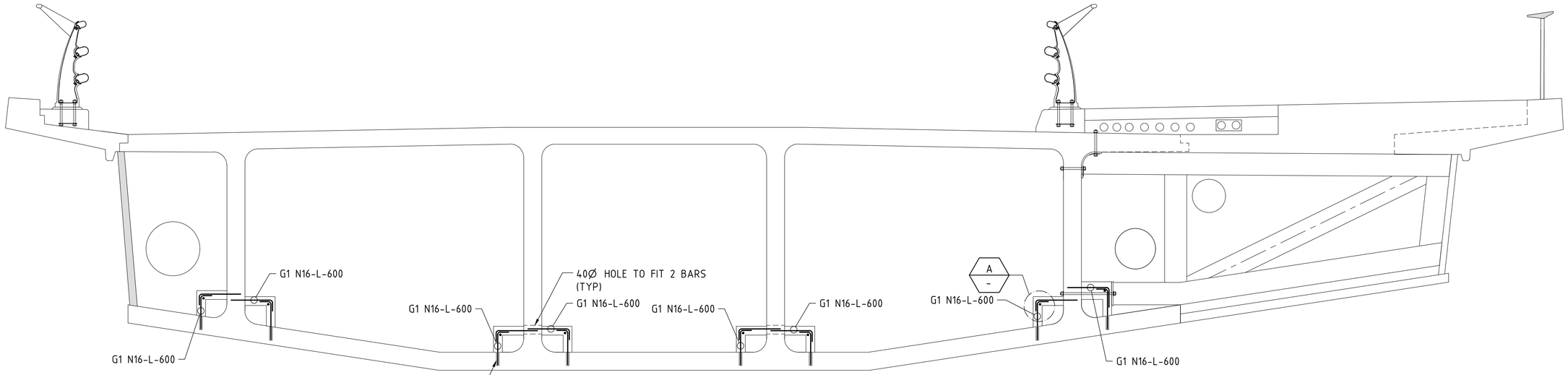

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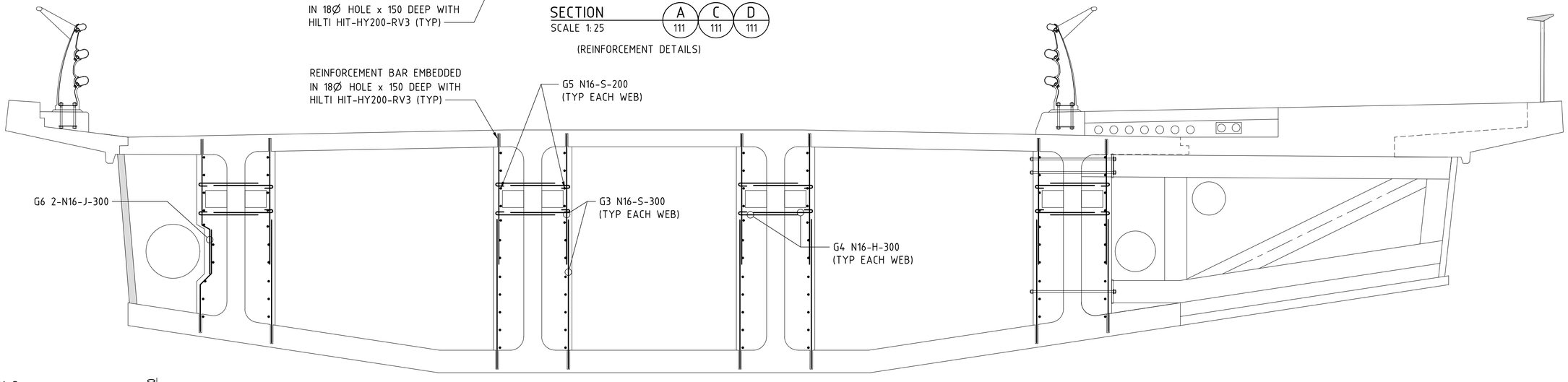

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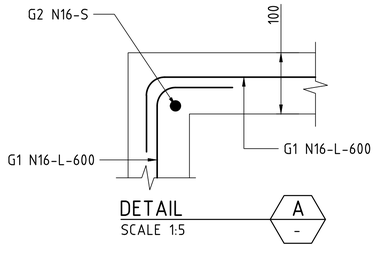

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						DRAFTING CHECK	S. THIRU
						DESIGNER	M. BALAKRISHNAN
						DESIGN CHECK	V. VIGNESWARAN
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:25 (0.25 0 0.50 1.00)

DESIGNER
SMEC
Member of the Surbana Jurong Group
© ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT
Australian Government
National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
EXISTING TENDON ENCASEMENT
SHEET 3

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-113	A

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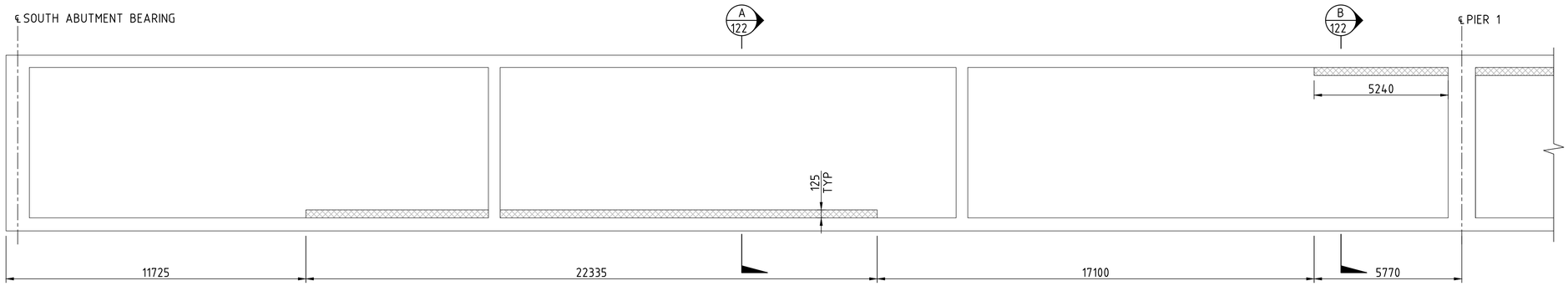

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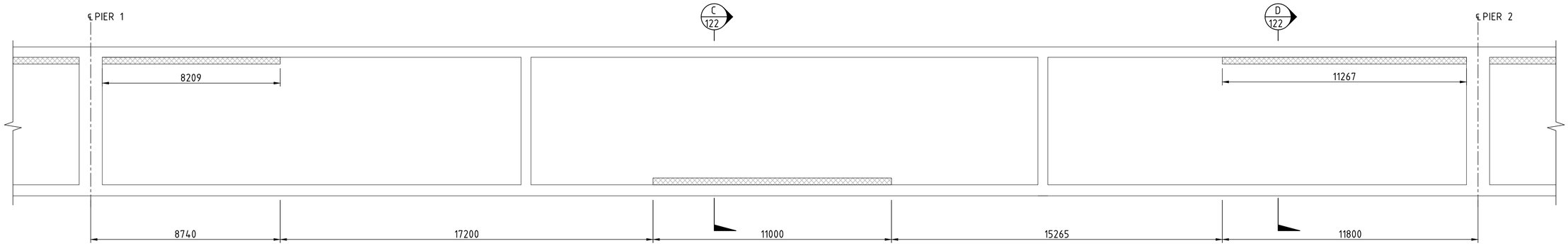
(SPAN 5 SIMILAR)



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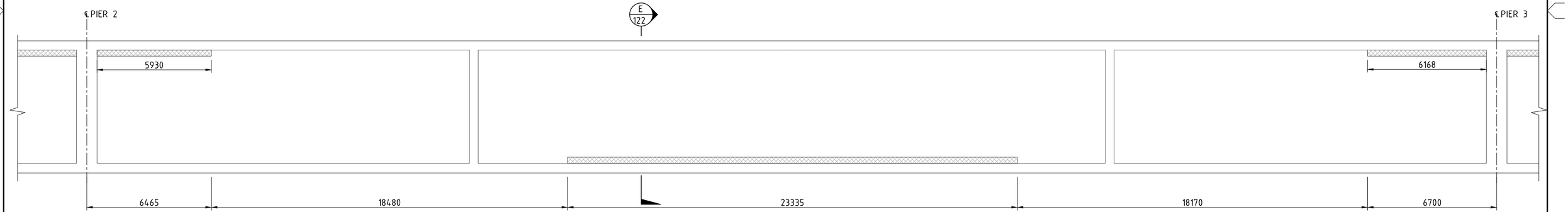

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						DRAFTING CHECK: S. THIRU
						DESIGNER: M. BALAKRISHNAN
						DESIGN CHECK: V. VIGNESWARAN
						PROJECT MANAGER: T. VAN NIEKERK
						PROJECT DIRECTOR: G. ROYLE

SCALES AT A1 SIZE DRAWING
HORIZ. 1:1000 10 0 10 20 30 40 50
VERT. 1:400 4 0 4 8 12 16 20

DESIGNER: SMEC — Member of the Surbana Jurong Group

SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
FLEXURAL STRENGTHENING WORKS
SHEET 1

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-121	A

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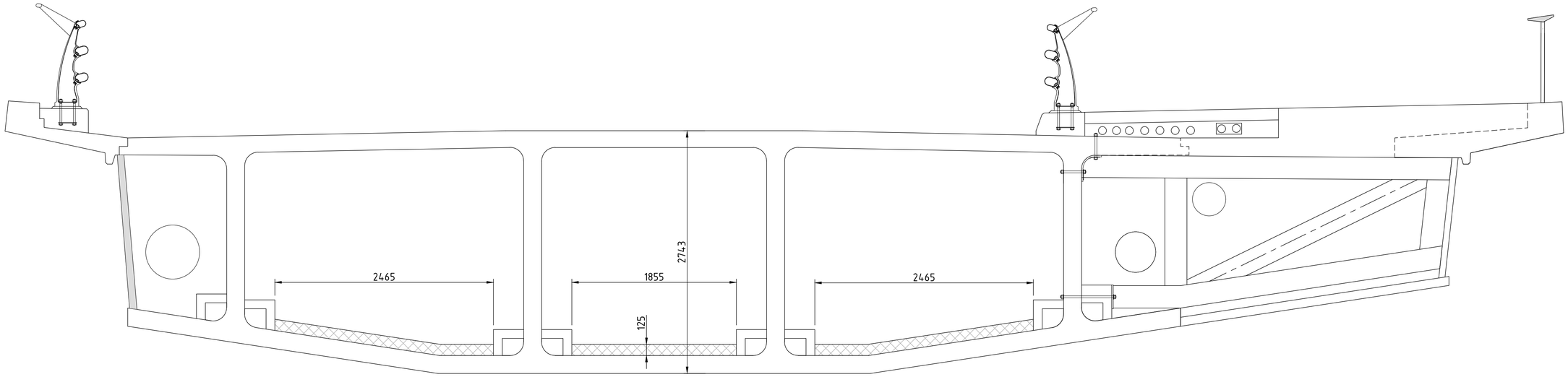
A1
X_ACTGov_TCCS_A1



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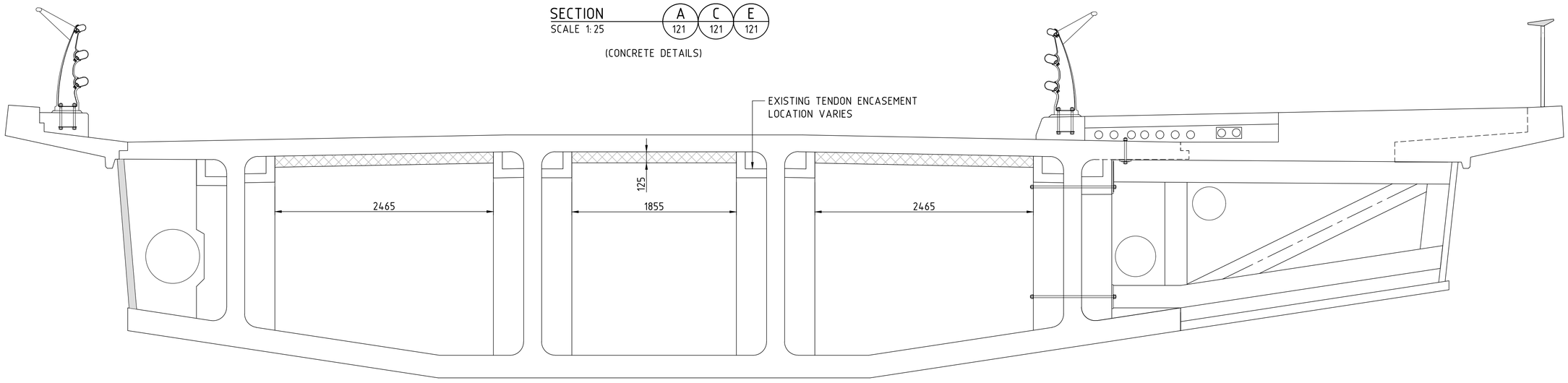
(CONCRETE DETAILS)



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SCALES AT A1 SIZE DRAWING
SCALE 1:25 (0.25 0 0.50 1.00)

DESIGNER: SMEC — Member of the Surbana Jurong Group

SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
FLEXURAL STRENGTHENING WORKS
SHEET 2

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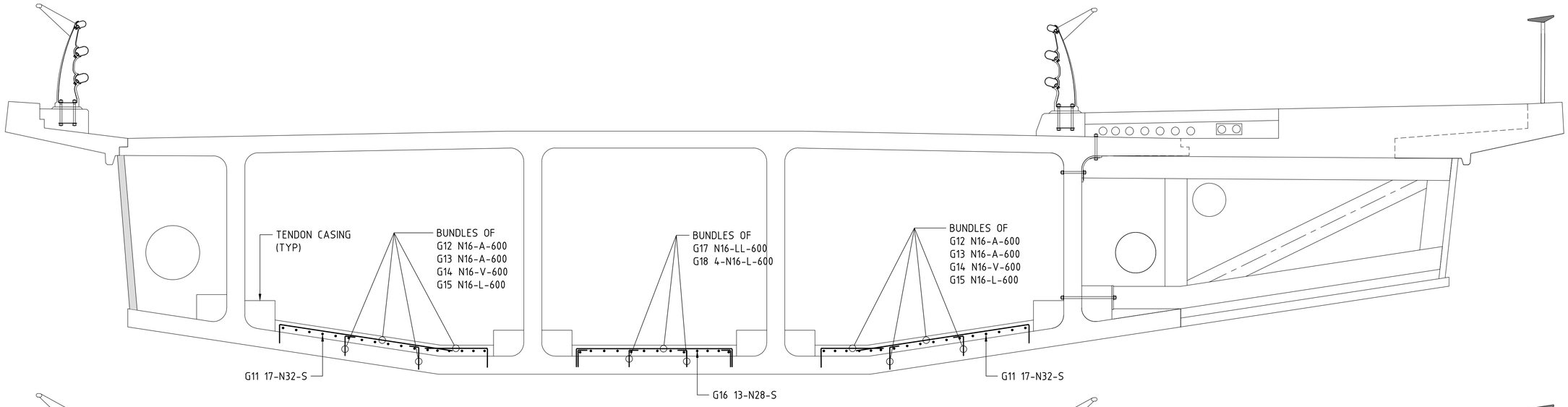

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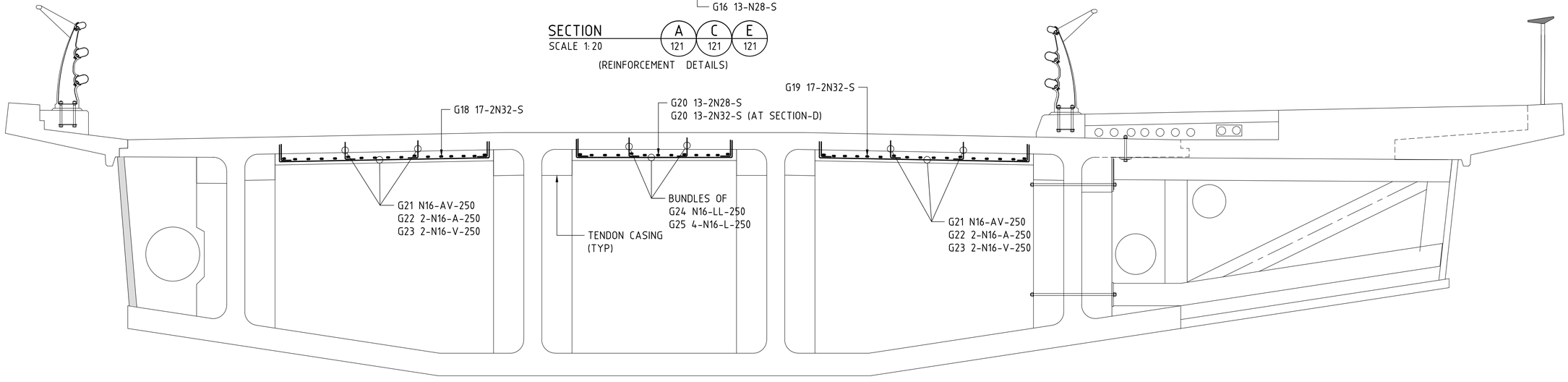

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						DRAFTING CHECK	S. THIRU
						DESIGNER	M. BALAKRISHNAN
						DESIGN CHECK	V. VIGNESWARAN
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:20 (0.2 0 0.2 0.4 0.6 0.8 1.0)

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
FLEXURAL STRENGTHENING WORKS
SHEET 3

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-123	A

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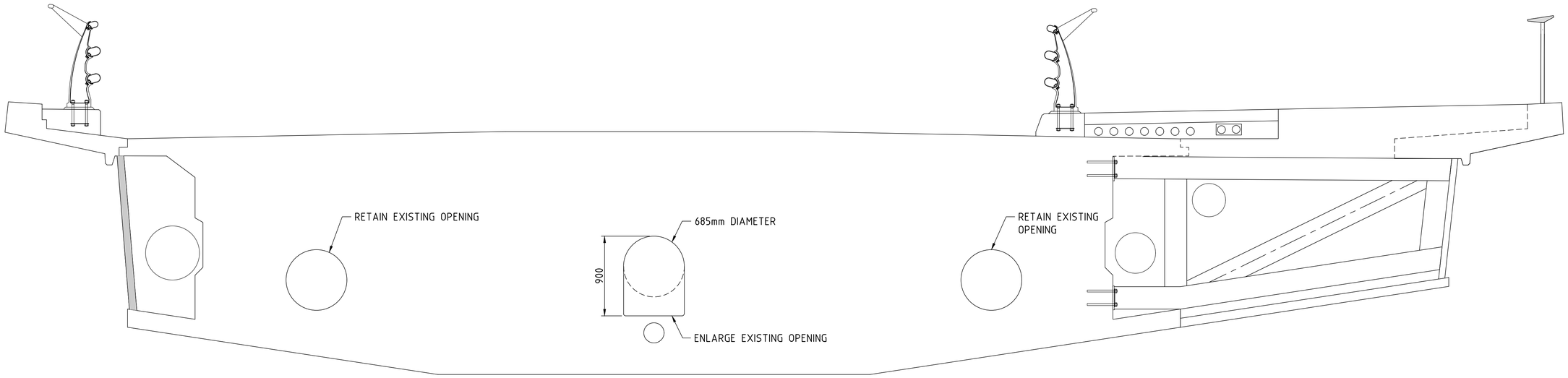

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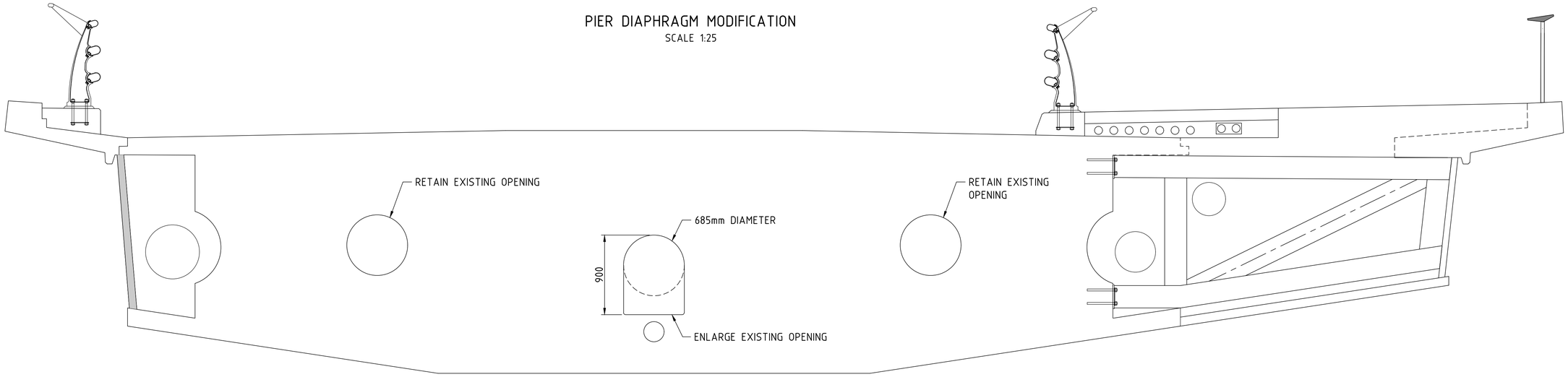

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SCALE 1:25

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1. FOR GENERAL NOTES, REFER TO DRAWING NO 111.

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PLOT DATE: 26 Apr 2023 TIME: 14:29:28

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TITLE	NAME
DRAFTER	KV. ARULMURUGAN
DRAFTING CHECK	S. THIRU
DESIGNER	M. BALAKRISHNAN
DESIGN CHECK	V. VIGNESWARAN
PROJECT MANAGER	T. VAN NIEKERK
PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:25 0.25 0 0.50 1.00

DESIGNER
SMEC
Member of the Surbana Jurong Group

SMEC PROJECT No 3002870

CLIENT
Australian Government
National Capital Authority

PROJECT TITLE
COMMONWEALTH AVENUE
BRIDGE RENEWAL
ACCESS OPENINGS
SHEET 1

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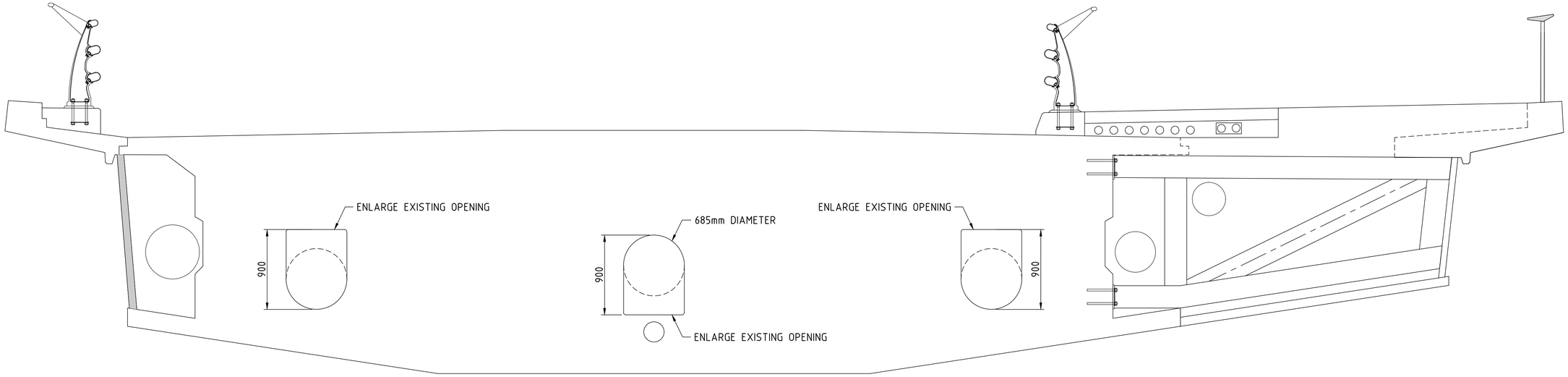
AS NOTED	30% DESIGN	3002870-ST-136	A



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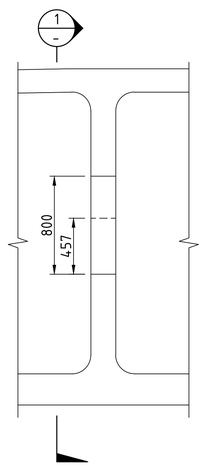

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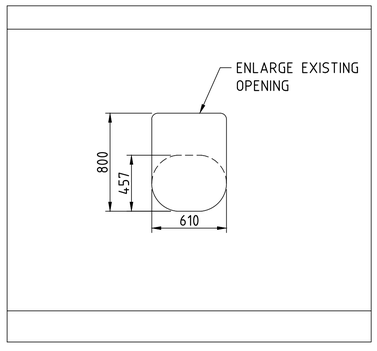
(SECTION THROUGH INNER WEB)
SCALE 1:25



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						DRAFTING CHECK	S. THIRU
						DESIGNER	M. BALAKRISHNAN
						DESIGN CHECK	V. VIGNESWARAN
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING: SCALE 1:25 (0.25 0 0.50 1.00)

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149 — SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
ACCESS OPENINGS SHEET 2

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-137	A

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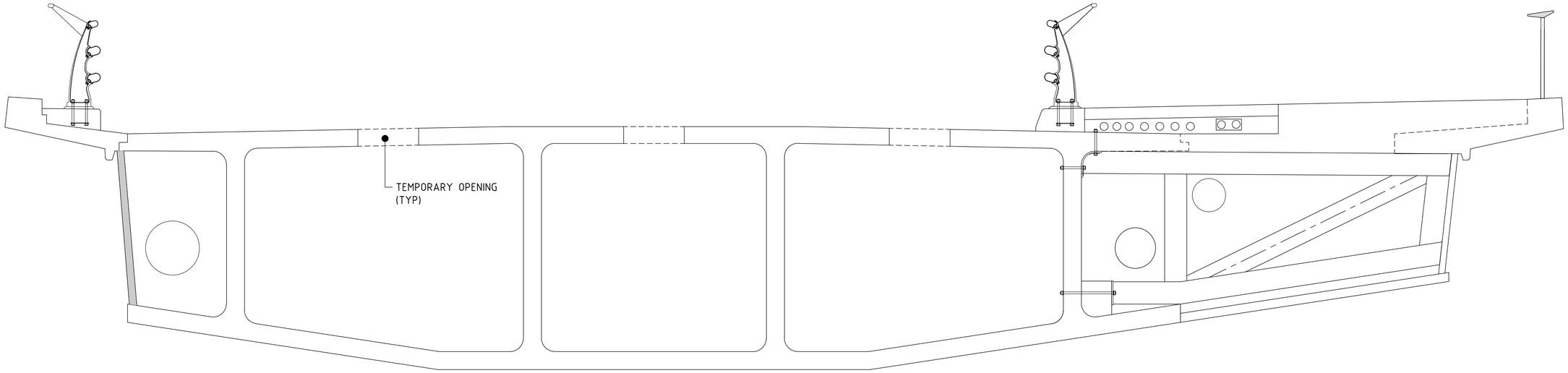

OPTIONAL TEMPORARY OPENING IN TOP SLAB
FOR THE CONSTRUCTION ACCESS
SCALE 1:25

NOTES
1. FOR GENERAL NOTES, REFER TO DRAWING NO 111.

150 mm ON ORIGINAL
A1

DRAWING FILE LOCATION / NAME: V:_Vault\Projects\3002\3002870\110_CADD\CAD\DWG\ST_Structural\3002870-ST-138.dwg					PLOT DATE: 26 Apr 2023	TIME: 14:30:24	
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						DESIGNER	M. BALAKRISHNAN
						DESIGN CHECK	V. VIGNESWARAN
						PROJECT MANAGER	T. VAN NIEKERK
						PROJECT DIRECTOR	G. ROYLE

SCALES AT A1 SIZE DRAWING
SCALE 1:25 (0.25 0 0.50 1.00)

DESIGNER: SMEC — Member of the Surbana Jurong Group — © ABN 47 065 475 149
SMEC PROJECT No 3002870

CLIENT: Australian Government — National Capital Authority

PROJECT TITLE: COMMONWEALTH AVENUE BRIDGE RENEWAL
ACCESS OPENINGS SHEET 3

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	30% DESIGN	3002870-ST-138	A

Commonwealth Avenue Bridge Renewal Project

Heritage Framework

Prepared for National Capital Authority

Australian Government
National Capital Authority

Figure 1: 1973. Commonwealth Avenue Bridge over Lake Burley Griffin in the fog.

Source: ACT Heritage Library Images, 000199, published in the Canberra News, 29 May 1973, p.17.

ACKNOWLEDGEMENT OF COUNTRY

Tonkin Zulaikha Greer acknowledge the traditional owners and custodians of the land on which they work and pay their respects to Elders past, present and emerging.

tonkinzulaikhagreer

ADDRESS **117 RESERVOIR STREET SURRY HILLS NSW 2010**
ABN **4600 2722 349**
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ISSUE DATE	PURPOSE	ISSUED BY
24/10/2022	Draft Issue to SMEC	
01/11/2022	Draft Issue to NCA	
29/11/2022	Minor amendments	

Australian Government
National Capital Authority

AGENCY **NATIONAL CAPITAL AUTHORITY**
ADDRESS **TREASURY BUILDING, KING EDWARD TERRACE, PARKES, ACT 2600, AUSTRALIA**
www.nca.gov.au

Contents

Figure 2: 1964. Commonwealth Avenue Bridge at night.
Source: National Archives of Australia, A1200, L46393

1.0
Introduction

1.1 Project Overview

The Commonwealth Avenue Bridge was designed in the late 1950s, built in the early 1960s and opened in November 1963. The Bridge is an elegant, slim line structure with modernist architectural design character.

The Bridge is a critical component of the transport network of Canberra and the Australian Capital Territory overall and forms a major link in Canberra's active transport network. The existing Bridge currently presents considerable limitations both at present and in the future including vehicle design load limitations, shared pedestrian and cycleway path width limitations and vehicle and shared path safety barrier design limitations.

The Project intent is to widen and strengthen the existing Bridge, increase its load bearing capacity to reflect current and forecast traffic load demands, upgrade vehicle and pedestrian safety barriers, and to accommodate wider shared pedestrian and cycleway paths.[1]

Key Project Objectives

The key Project Objectives include:

(a) renewal of the existing Bridge to cater for current and future traffic loads;

(b) ensuring the Project is effectively coordinated and developed with consideration to other strategic projects in the corridor;

(c) meeting the business needs of the Australian Government for the delivery of National Capital Authority (NCA) functions;

(d) delivering the best value to the Australian Government for its investment over the asset's whole of life;

(e) delivering in accordance with Australian Standards; and

(f) ensuring full compliance with relevant Australian government legislation, policies and procedures.

Aims

The Commonwealth Avenue Bridge Renewal Project will:

(i) increase the load-bearing capacity of the Bridge to T44/L44 bridge loading requirements to meet current and forecast traffic load demands, and to extend the bridge asset and functional design life (by at least 50 years) to match the load rating of the road network surrounding the Bridge;

(ii) relocate services currently located in the Bridge structure;

(iii) widen the shared pedestrian and cycleway paths on both sides of the Bridge to improve safety and comply with Austroads guidelines;

(iv) replace all barriers on both bridge spans to meet code requirements and improve safety for all users of the Bridge including consideration of integrated lighting into proposed barrier solutions; and

(v) make improvements to the Bridge approach ramps to provide better access to the Bridge for all users and to better integrate with the wider shared path network.

Key Design Elements

Key design elements identified in the brief include:

(i) strengthen the Bridge to accommodate T44/L44 loads to match the load rating of the feeder road network;

(ii) widen the existing road carriageway to 10.7 metres (comprising two 3.7-metrewide outside traffic lanes and a 3.3-metre-wide centre traffic lane);

(iii) widen the shared pedestrian and cycle paths by 2.6 metres from 2.4 metres to 5 metres clear width, consistent with Austroads standards;

(iv) implement medium performance, low transmitted force barriers, with a design that has negated the need for additional strengthening of the carriageways;

(v) upgrade access pathways to comply with the requirements of the Disability Discrimination Act (DDA) and to integrate into existing path and road networks;

(vi) upgrade and adjustment of the existing drainage, lighting and utility services that also consider future proofing of a light rail corridor and infrastructure impacts;

(vii) prepare heritage and urban designs sympathetic to the existing Bridge and urban and landscape design; and

(viii) prepare temporary works designs that consider traffic management and the minimisation of disruption to users, environmental management, safety during construction, integrity of the existing structure, construction staging impacts and visual amenity

1: National Capital Authority, Commonwealth Avenue Bridge Renewal Project, Design Consultant Service RFT, Project Brief, 2022.
2: ibid.

1.1.1 Report Purpose

Heritage considerations should underpin the development of options for the Commonwealth Avenue Bridge Renewal Project. This report aims to gather all relevant heritage information related to the site and to establish a heritage framework that will inform the design of the Commonwealth Avenue Bridge Renewal. It includes a review of the history and significance of the site, identifies heritage constraints and opportunities and provides guidelines for the design of new elements within this highly significant heritage context, with a focus on built heritage.

Impacts on significant fabric, setting and views should be minimised in accordance with the policies contained in the Lake Burley Griffin and Adjacent Lands—Heritage Management Plan, Volume 1, Lake Burley Griffin—Final Report, October 2009 and Parliament House Vista Heritage Management Plan, 2010.

1.1.2 Key Stakeholders

Consultation with stakeholders, including representatives from the National Capital Authority and Department of Climate Change, Energy, the Environment and Water has informed the preparation of this Heritage Framework.

1.1.3 Authorship

This Heritage Framework builds on the extensive archive of reports and studies, prepared by others, related to the Commonwealth Avenue Bridge and its surrounds, which are listed in the Reference section of this report.

Tonkin Zulaikha Greer Heritage have prepared this report on behalf of Spackman Mossop Michaels Landscape Architects for the National Capital Authority.

1.2 Methodology and Terminology

Methodology

This Heritage Framework has been prepared in accordance with the following guidelines and requirements:

- *Environment Protection and Biodiversity Conservation Act*,1999 (*EPBC Act*) and Regulations for the assessment of places against Commonwealth Heritage Criteria and Commonwealth Heritage management principles;
- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013, (The Burra Charter);
- Australian Heritage Commission (2002) Ask First: A Guide to Respecting Indigenous Heritage Places and Values; and
- Australian Heritage Council (2010), Identifying Commonwealth Heritage Values.

Heritage Conservation

Heritage conservation is the process of looking after important places so that their heritage values can be passed on to future generations. The Burra Charter provides a set of principles that guides conservation work in Australia. It advocates a cautious approach to change - to do as much as necessary to care for a place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained. If changes are made to a place, they should ideally be reversible, as once original fabric is gone it is lost forever.

A key principle of heritage conservation is the importance of understanding the significance of a place before making any decisions about its future. This ensures that the assessment process is as objective as possible and is based only on the intrinsic qualities of the place itself. It also ensures that work on heritage items is designed to retain the significance of the place.

Cultural significance

Cultural significance is defined by *The Burra Charter* as the aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.

The level of significance of a place and the type of impact proposed affects the statutory planning approval pathway of a project and the input required from a specialist heritage consultant. Heritage items can be of national, state or local significance.[1]

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013

In order to achieve a consistency in approach and understanding of the meaning of conservation by all those involved, a standardised terminology for conservation processes and related actions has been adopted. The terminology in *The Burra Charter* is a suitable basis for this.

The following terms apply to the historic fabric of the site and are included here to assist in understanding of the intent of the conservation requirements in this section.

Place means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Fabric means all the physical material of the place including components, fixtures, contents, and objects.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Maintenance means the continuous protective care of the fabric and setting of a place, and is to be distinguished from repair.

Repair involves restoration or reconstruction.

Preservation means maintaining the fabric of a place in its existing state and retarding deterioration.

Restoration means returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

Reconstruction means returning the place to a known earlier state and is distinguished from restoration by the introduction of new material.

Adaptation means modifying a place to suit the existing use or a proposed use.

Use means the functions of a place, as well as the activities and practices that may occur at the place.

Compatible use means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Setting means the area around a place, which may include the visual catchment.

Related place means a place that contributes to the cultural significance of another place.

Interpretation means all the ways of presenting the cultural significance of a place.

Limitations

Assessments of cultural significance made by others have been adopted for certain items in this report. In the opinion of the authors, the recommendations in this report would not be materially altered by any further primary research.

1.3 The Study Area

The Commonwealth Avenue Bridge is located in Parkes, Canberra. The study area comprises the bridge, which spans Lake Burley Griffin, and includes the landscaped areas associated with the bridge on either side of the lake. On the northern side of the lake the study area includes land around Barrine Drive, part of which is known as Commonwealth Park, and to the south, it includes the landscaped area to the north of Flynn Place, to the west of Patrick White Terrace.

The bridge itself, and the area to the east of the bridge, are located on national land managed by the National Capital Authority, whilst the land to the west of the bridge is managed by the ACT Government.

Figure 3: Location Plan.
Source: GML Commonwealth Avenue Bridge Heritage Assessment, 2020.

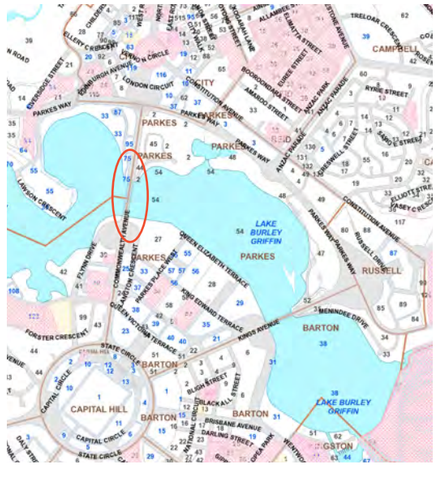


Figure 4: Block Plan with Commonwealth Avenue Bridge circled.
Source: ACT Government.

Figure 5: Study Area.
Source: Nearmaps.

1.4 Historical Context of the Commonwealth Avenue Bridge

The following historical chronology is based on the history contained in the *Commonwealth Avenue Bridge Heritage Assessment* prepared by GML Heritage in 2020, along with additional research.

YEAR	EVENT
Pre 1788	Home of the Ngunawal people.
	Molonglo River Crossings
	Scott's Crossing near Blundell's Cottage - low level ford only passable in dry weather.
1911	Lennox Crossing Bridge constructed.
1912	Commonwealth Avenue was an original element of Walter Burley Griffin's plan for the Federal Capital, forming the western edge of the National Triangle and providing a major organisational axis within the city, linking Capital and City Hills. Symbolically, Commonwealth Avenue was intended to represent the legal and political connection between Great Britain as the mother country and Australia as a member of its empire.
1913	Departmental Board Design for Canberra and Griffin Plan.[3]

3: GML Heritage, Commonwealth Avenue Bridge Heritage Assessment, 2020.

1912

Figure 6: 1912. [Competitor number 29 Walter Burley Griffin] City and environs.
Source: National Archives of Australia, A710, 38, Item ID 4185428.

Figure 7: 1912. [Competitor number 29 Walter Burley Griffin] City and environs - Detail showing location of Commonwealth Avenue Bridge orange.
Source: National Archives of Australia, A710, 38, Item ID 4185428.

Figure 9: 1912. Commonwealth of Australia Federal Capital Competition : view from summit of Mount Ainslie, [1] [picture].
Source: National Library of Australia, https://nla.gov.au:443/tarkine/nla.obj-150146795

1913

Figure 8: After Griffin's arrival in Australia the central basin was made wider and some topographic features were accounted for in the 1913 Preliminary Plan.
Source: Griffin Legacy, p.15 in GML Lake Burley Griffin - Heritage Assessment - Final Report, October 2009, p.93.

YEAR	EVENT
1916	First Commonwealth Avenue Bridge constructed with restricted funding. Timber trestle and beam bridge.
1920	Commonwealth Avenue one of first roads built under Griffin plan.
1922	Contract awarded for construction of timber bridge on Kings Avenue.
July 1922	Molonglo River flooded - Commonwealth Avenue Bridge damaged. Timber proposed for Kings Avenue Bridge diverted to construct bridge immediately south of Commonwealth Bridge known as Billabong Bridge. (Proposed timber Kings Avenue Bridge not constructed.)
October 1924	Second Commonwealth Avenue Bridge opened. More substantial, higher and with longer spans than before. Concrete piers and composite 'Leychester' trusses which incorporated steel in the lower chords.
May 1925	Torrential rains fell and rivers rose above 1922 level. The new bridges on Commonwealth Avenue (both the Billabong Bridge and the second Commonwealth Avenue Bridge) were damaged, and washaways occurred on the embankment and bridge approaches.
1926	Repairs carried out including raising roadway and bridge deck by almost a metre and adding a further truss span.
May 1927	Repairs completed.
1929	Scott's Crossing upgraded from a ford to a low level timber bridge with substantial concrete piers.
	Planning of Bridges over Lake Burley Griffin
1951	Remedial works carried out to Commonwealth Avenue Bridge.

1921-1922

Figure 10: 1921-22. Old Commonwealth Avenue Bridge over Molonglo River destroyed in July 1922 floods.
Source: National Archives of Australia, A3560, 232, Item ID 3106888.

Figure 11: 1921-31. Temporary bridge while Commonwealth Avenue was being rebuilt.
Source: National Archives of Australia, A3560, 662, Item ID 3112242.

Figure 12: 1921-31. Commonwealth Avenue Bridge from the Molonglo River.
Source: National Archives of Australia, A3560, 1850, Item ID 3130618.

1923-1924

Figure 13: 1923. Billabong Bridge in 1923.
Source: Canberra's Engineering Heritage, p.18.

Figure 14: 1924. Second Commonwealth Avenue Bridge.
Source: National Australian Archives, A3560, 661..

Figure 15: 1924. Completed Commonwealth Avenue Bridge looking south.
Source: National Archives of Australia, A3560, 666, Item ID 3112248.

1925

Figure 16: 1925. Second Commonwealth Avenue Bridge showing embankment form work.
Source: National Archives of Australia, A3560, 1224, Item ID 3118731.

Figure 17: 1925. Commonwealth Bridge over the Monoglo River showing floodwaters and depth gauge.
Source: National Archives of Australia, A3560, 3938, Item ID 3098112.

Figure 18: 1925. Commonwealth Bridge across Monoglo River, under construction Canberra, 1925.
Source: National Archives of Australia, A1200, L83955, Item ID 11484929.

1925-1926

Figure 19: 1925. Commonwealth Avenue Bridge over Molonglo River.
Source: National Archives of Australia, A3560, 1239, Item ID 3118777.

Figure 20: 1926. View from Parliament House to north west - Commonwealth Avenue Bridge on left.
Source: National Archives of Australia, A3560, 1450, Item ID 3121608.

Figure 21: 1926. Commonwealth Avenue Bridge embankment under repair following 1925 floods.
Source: National Archives of Australia, A3560, 1422, Item ID 3120825.

1926

Figure 22: 1926. Commonwealth Avenue Bridge embankment.
Source: National Archives of Australia, A3500, 1715, Item ID 3130215.

Figure 23: 1926. Keystone steam excavator at work on embankment of Commonwealth Avenue Bridge with horse drawn drays.
Source: National Archives of Australia, A3560, 1326, Item ID 3119176.

1926

Figure 24: 1926. Commonwealth Avenue Bridge downstream from Molonglo River.
Source: National Archives of Australia, A3560, 2079, Item ID 1964783.

Figure 25: 1926. Commonwealth Avenue Bridge looking south.
Source: National Archives of Australia, A3560, 1668, Item ID 3129147.

1927

Figure 26: 1927. Commonwealth Bridge showing flood damage with the abutments washed away. Molonglo River in flood.
Source: National Archives of Australia, A3560, 7668, Item ID 3238482.

Figure 27: 1927. View across Acton and Commonwealth Bridge from the Air Bachelors Quarters in the trees.
Source: National Archives of Australia, A3560, 3266, Item ID 3059334.

1928

Figure 28: 1927. Three unknown men near Commonwealth Avenue Bridge.
Source: National Archives of Australia, A3560, 3455, Item ID 3081117.

Figure 29: 1928. The original Commonwealth Avenue Bridge under construction.
Source: National Archives of Australia, A1200, L83799, Item ID 11777528.

Figure 30: 1928. Lennox crossing bridge over the Molonglo River looking towards Commonwealth Avenue Bridge.
Source: National Archives of Australia, A3560,, 4633, Item ID 3149437.

1928- 1929

Figure 31: 1928. Parliament House, West Block and Commonwealth Avenue Bridge from City Hill.
Source: National Archives of Australia, A3560, 4464, Item ID 3113734.

Figure 32: 1928. Commonwealth Avenue looking north, Albert Hall and Commonwealth Bridge from West Block Offices showing young trees.
Source: National Archives of Australia, A3560, 4237, Item ID 3103868.

Figure 33: 1929. Record fall of snow - man making a snowman on Billabong Bridge, Commonwealth Avenue.
Source: National Archives of Australia, A3560, 5705, Item ID 3167335.

1932-1934

Figure 34: 1932. Commonwealth Avenue, Albert Hall, Commonwealth Bridge from West Block Offices.
Source: National Archives of Australia, A3560, 6656, Item ID 3197937.

Figure 35: 1934. Commonwealth Avenue Bridge over the Molonglo River.
Source: National Archives of Australia, A3560, 7334, Item ID 3234795.

1946

Figure 36: 1946. The third Commonwealth Avenue Bridge, rebuilt after the 1925 floods, photographer Max Dupain.
Source: National Archives of Australia, A1200, L7658, Item ID 11155243.

1956

Figure 37: 1956. Commonwealth Avenue Bridge in flood, causing traffic jam, June 1956.
Source: National Archives of Australia, A7973, INT483/1, Item ID 11855955.

Figure 38: 1956. Commonwealth Avenue Bridge, Canberra in flood, causing a traffic jam, June 1956.
Source: National Archives of Australia, A7973, INT483/2, Item ID 11855956.

1960

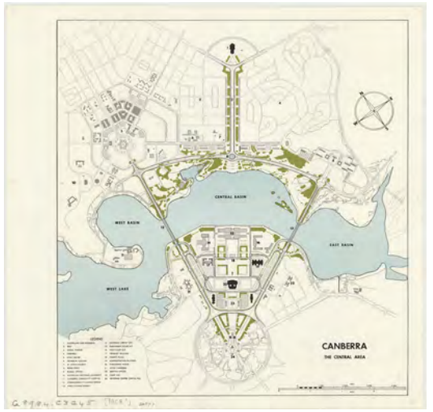


Figure 39: 1960. Canberra, the central area [cartographic material].
Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-363303659

Figure 40: 1962. Site of accident on Commonwealth Bridge.
Source: National Archives of Australia, A7973, INT630/1, Item ID 11715000.

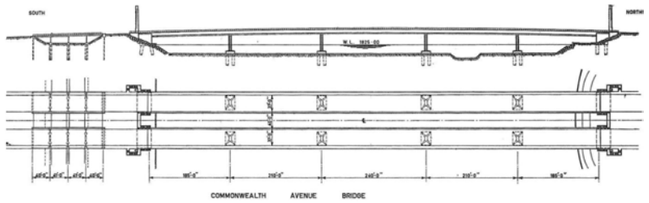


Figure 43: Elevation and plan showing five spans supported by four piers and two abutments, with a shorter beam bridge at the southern end providing an underpass for Flynn Drive. Road access is provided under the main bridge at the northern end.
Source: Birkett 1964, p.140.

YEAR	EVENT
1957	National Capital Development Commission established. Planning of lake commenced. Prime Minister Menzies invited the British architect, Sir William Holford, to advise on planning and aesthetic aspects of a modified version of the Griffin Plan (the gazetted 1925 Griffin Plan). His advice focused on the roads, bridges and landscape within the central and parliamentary areas, retaining the essential features of the Griffin Plan's parliamentary triangle flanked by Commonwealth and Kings Avenues.
	Hydrological studies and model testing was undertaken by the Department of Works before the location of the associated bridges was determined.
	National Capital Development Commission (NCDC) invited the London firm of engineering consultants, G. Maunsell and Partners to submit a bridge design for the Kings Avenue Bridge in association with architectural firm W. Holford and Partners.
October 1959	Construction contract awarded for Kings Avenue Bridge to the Australian civil engineering firm M.R Hornibrook Pty Ltd, under the supervision of the Commonwealth Department of Works.
February 1962	Kings Avenue Bridge completed.
	Bridge Construction, 1961–1963
	G. Maunsell and Partners and W. Holford and Partners designed a second bridge, broadly similar but more prestigious in appearance, for the major ceremonial thoroughfare of Commonwealth Avenue whilst Kings Avenue Bridge under construction.
	Construction Contract
1960	Tenders called for the construction of the Commonwealth Avenue Bridge.

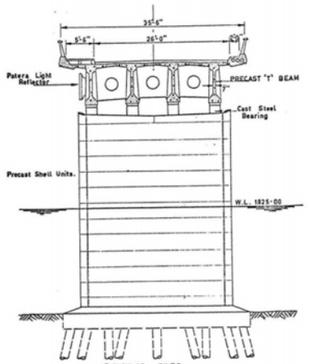


Figure 44: Kings Avenue Bridge design with broad precast sectional piers and prestressed 'T' beam superstructure.
Source: Birkett 1964, p.141.

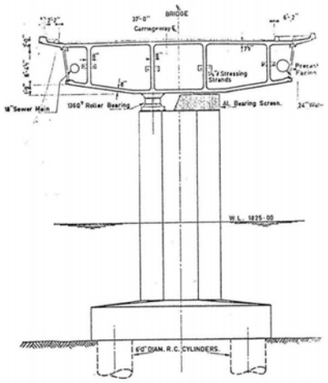


Figure 45: Commonwealth Avenue Bridge design with slender piers and wider precast box segment, post tensioned superstructure.
Source: Birkett 1964, p.142.

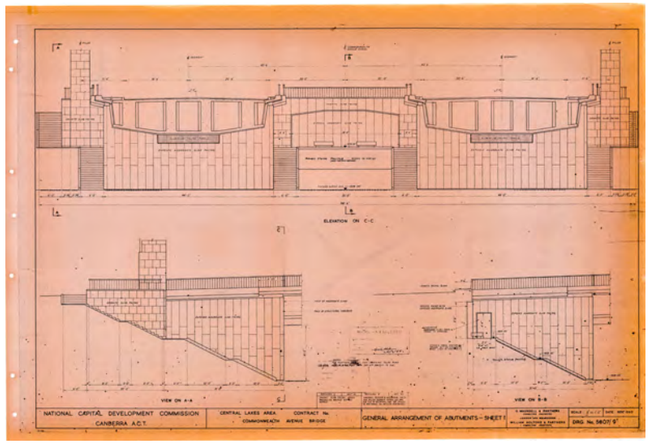


Figure 47: Commonwealth Avenue Bridge, General Arrangement of Abutments - Sheet 1, G Maunsell & Partners and William Holford & Partners, DRG No. 5807/9B.
Source: NCA.

Figure 41: Hydrological scale modelling of the lake, with Scrivener Dam and bridges.
Source: National Library of Australia, nla.obj-143692477.

Figure 42: Flow measurement at Kings Avenue Bridge, with Central Basin and Commonwealth Avenue Bridge.
Source: National Library of Australia, nla.obj-143692313.

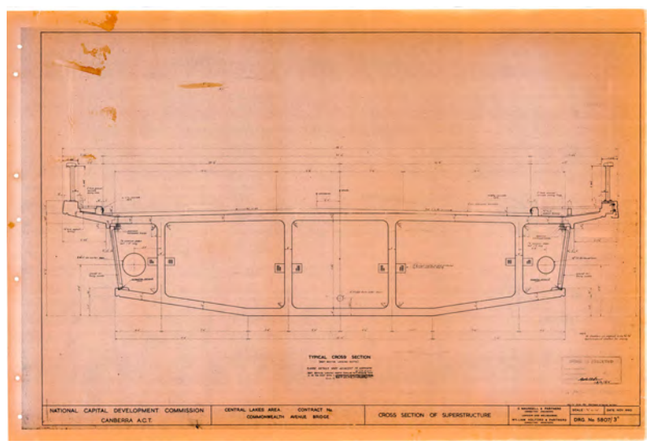


Figure 46: Commonwealth Avenue Bridge, Cross Section of Superstructure, G Maunsell & Partners and William Holford & Partners, DRG No. 5807/3A.
Source: NCA.

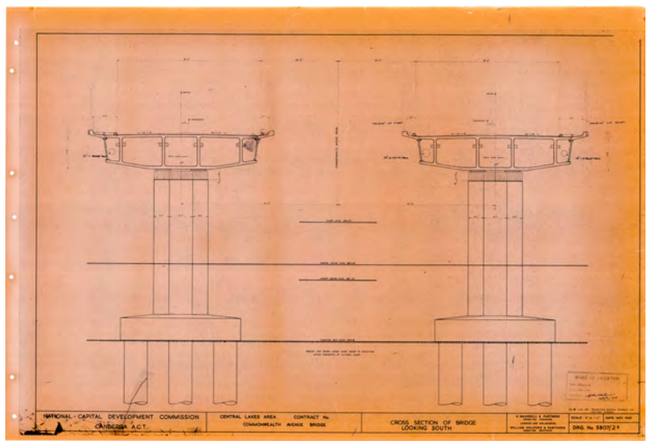


Figure 48: Commonwealth Avenue Bridge, Cross Section of Bridge, G Maunsell & Partners and William Holford & Partners, DRG No. 5807/2B.
Source: NCA.

YEAR	EVENT
January 1961	Contract awarded to same contractor as for Kings Avenue Bridge - M.R Hornibrook Pty Ltd - in association with Henry J Kaiser of the USA.
	Construction 1961-1963
1961-1963	Construction was supervised by the Commonwealth Department of Works, with Graeme Kelleher as the site supervising engineer.
	Inspection notes prepared for the National Association of Australia State Road Authorities (NAASRA)symposium on bridges held in Canberra in 1969 summarised below: The construction of the twin structure for the bridge was carried out on the dry flat, located south of the diverted Molonglo River. Concrete for in situ casting of the piles, piers and abutments was ready mixed and delivered to the site in trucks. After the piers and abutments were cast, heavily braced timber falsework was erected on concrete pads along the length of the bridge, with variations in height to follow the curve of the underside of the bridge superstructure in preparation for the placement of precast box segments. For the precast box segments, a casting yard was established on the flat to the East of Pier 1 and across from the Billabong Bridge (near the current site of the National Library of Australia). The concrete used was mixed on site in an adjacent horizontal pan mixer and delivered to the casting yard in an automatic hopper mounted on a mono-rail. The box segments were cast in steel moulds on a prepared base in which the intricate reinforcement for each four-web box was placed. When hardened, the 50 ton concrete box segments were moved from the beds and erected on the timber falsework in three movements by two overhead gantries on rails, one of which spanned the casting yard and the other both bridge superstructures. One-hundred-and-two box segments were placed end-to-end. After erection and final adjustment of the box segments and completion of the in situ pier diaphragmss and anchor blocks, the box segments were jointed and each span was partially stressed, starting from the north end. Final stressing was then carried out using 80 full-length high tensile steel tendons 28mm in diameter. Loads of 64 tonnes were simultaneously applied at the end of each tendon. This was at that time the longest single length of tendon that had been stressed. Further details of the stressing are provided in Appendix B. On completion of the stressing, the false work was disassembled, the protective concrete around the cables was poured, and the cantilevered footways and road kerbs were constructed. The handrails, parapet lighting, pipe lines and exposed aggregate panels were then placed and bituminous hot mix laid on the bridge decking. The timber trestles forming the falsework were removed in March 1963, allowing the river to be diverted under the new bridge and earthworks to proceed on the northern approach.

1961

Figure 49: 1961. Commonwealth Bridge under construction December 1961.

Source: National Archives of Australia, A1500, K7901, Item ID 30465029.

Figure 50: 1961. Commonwealth Bridge under construction December 1961.

Source: National Archives of Australia, A1500,K7902, Item ID 30465030.

1962

Figure 51: 1962.The Canberra lake and foreshore development [cartographic material].

Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-363258666

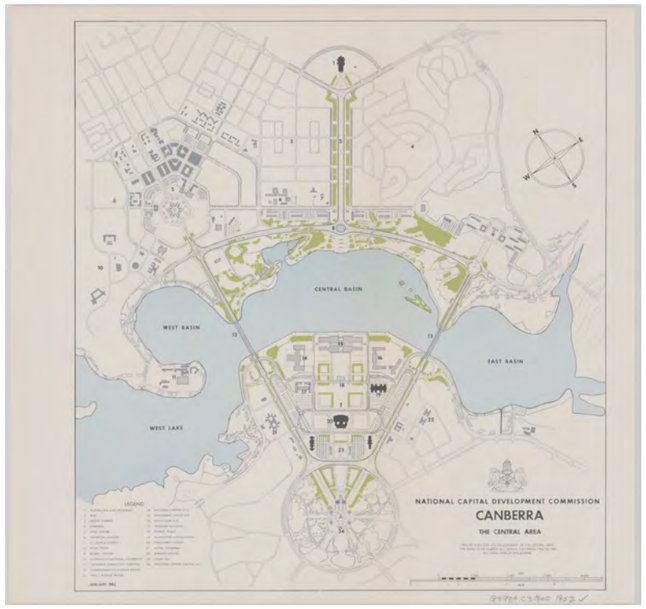


Figure 52: 1962. Canberra - the Central Area.

Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-866881993

1962

Figure 53: 1962-63. Bridge abutment, supporting an end span of the superstructure.
Source: National Library of Australia, nla.pic-an24577607-v

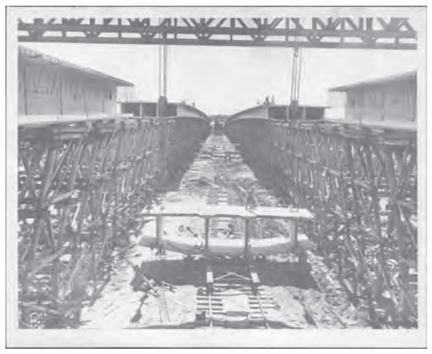


Figure 54: 1962. Commonwealth Avenue Bridge under construction, 1962 or 1963, 2 [picture.
Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-145674973

Figure 55: 1962. Commonwealth Avenue Bridge under construction, 1962 or 1963, 4 [picture.
Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-145675178

Figure 56: 1962. Commonwealth Avenue Bridge under construction, 1962 or 1963, 6 [picture.
Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-145674973

Figure 57: 1962. Commonwealth Avenue Bridge under construction, 1962 or 1963, 5 [picture.
Source: Trove,https://nla.gov.au:443/tarkine/nla.obj-145675273

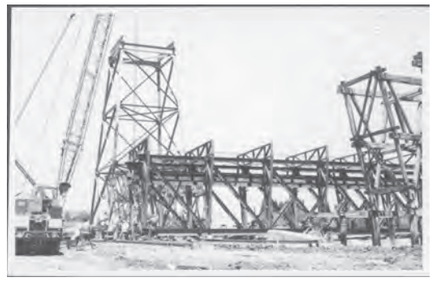


Figure 58: 1962. Commonwealth Avenue Bridge under construction, 1962 or 1963, 6 [picture.
Source: Trove,https://nla.gov.au:443/tarkine/nla.obj-145675374

Figure 59: Reinforcement placed around inner form of box segment.
Source: National Library of Australia, nla.obj 24577602

Figure 60: 1962. Bridge superstructure self supporting after post-tensioning. The timber falsework is in process of being removed.
Source: National Library of Australia, nla.obj-143758408-1

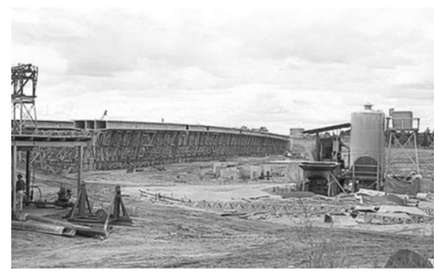


Figure 61: Multi-webbed box segments in place on top of the timber falsework. The concrete batching plant and casting yard are in the foreground.
Source: National Library of Australia, nla.obj-143758146-1

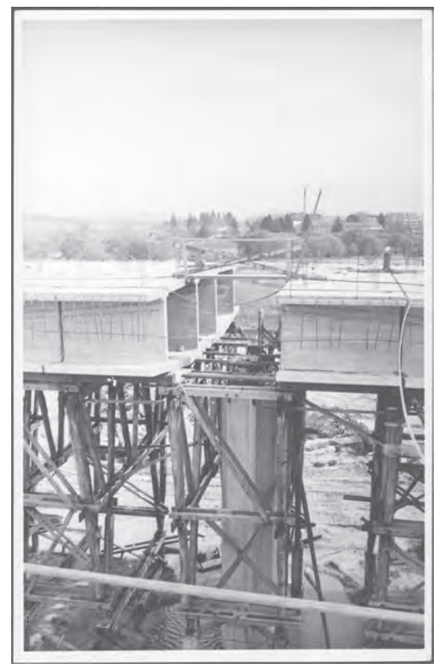


Figure 62: 1962. Commonwealth Avenue Bridge under construction, 1962 or 1963, 8 [picture.
Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-145675579

1964

YEAR	EVENT
	Completion and Opening
August 1963	Eastern carriageway opened to traffic.
Nov 1963	Western carriageway opened to traffic.
February 1964	Granite blocks from London's historic Waterloo Bridge were placed on the abutments at either end of the bridge.
17 Oct 1964	Prime Minister Sir Robert Menzies described the bridge as 'the finest building in the National Capital' at the inauguration of Lake Burley Griffin at the lakeside adjacent to the bridge.

Figure 63: 1964. Aerial view of Commonwealth Bridge. Australian News and Information Bureau, photographer W Pedersen.

Source: National Archives of Australia, A1200, L47281, Item ID 30709228.

Figure 65: Holford's scheme, as shown on an NCDC plan, showing a curved Parkes Way, less geometric northern edge to Central Basin, splayed edges to the south and park like landscaping.

Source: Reid, 2002, p.268, in GML, Lake Burley Griffin - Heritage Assessment - Final Report, October 2009, p.102.

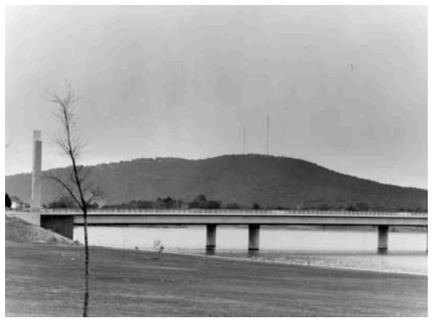


Figure 64: 1964. Black Mountain television tower view from Commonwealth Avenue Bridge.

Source: National Archives of Australia, B6295, 2585J, Item ID 30108281.

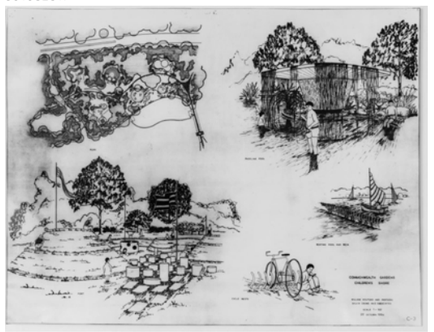


Figure 66: 1964. Sylvia Crowe's scheme for a playground in the Commonwealth Gardens, Canberra.

Source: University of Reading, Sylvia Crowe Collection: AR CRO DO1 G2/1/1, https://merl.reading.ac.uk/explore/online-exhibitions/design-for-play-landscape-institute/.

Figure 67: 1964.Commonwealth Avenue Bridge with small footbridge over an aquarium pool in foreground.

Source: National Archives of Australia, A1200, L47815, Item ID 11267734.

Figure 68: 1964.Commonwealth Avenue Bridge spanning Lake Burley Griffin, ACT.

Source: National Archives of Australia, A1200, L46447, Item ID 11701643.

Figure 69: 1964.Commonwealth Avenue Bridge crossing Lake Burley Griffin.

Source: National Archives of Australia, A1200, L47601, Item ID 11339797.

Figure 70: 1964.Commonwealth Avenue Bridge at night.

Source: National Archives of Australia, A7973, INT753/1, Item ID 11715869.

Figure 71: 1964.Commonwealth Avenue Bridge at night.

Source: National Archives of Australia, A1200, L46393, Item ID 11719029.

Figure 72: 1964. Kings Avenue Bridge 22.5.1964.

Source: National Archives of Australia, A7973, INT753/3, Item ID 117185870.

Figure 73: 1964. Kings Avenue Bridge 22.5.1964.

Source: National Archives of Australia, A7973, INT753/4, Item ID 11715871.

Figure 74: 1964. Kings Avenue Bridge 22.5.1964.

Source: National Archives of Australia, A7973, INT753/2, Item ID 11715893.

YEAR	EVENT
	Subsequent Changes to the Bridge
1960s	Number of accidents where cars mounted the kerb on the bridge, crossed the footway and hit or broke through the handrail. Public pressure for increased safety.
1970	Crash rails about a third of the height of the aluminium hand rails were installed.
	Captain Cook Memorial Jet installed near bridge.
1998	Barriers installed immediately above the heavier tubular crash rails on eastern side of bridge (not on western side).
2017	After much lobbying by Pedal Power, an ACT cycling organisation, a temporary additional rail was made to the northbound bridge.
???	Cycleway on western bridge widened by narrowing the roadway. Base of safety rails moved. Pathway construction insitu on eastern side and precast on western side. Cycleway on eastern side has also been widened at a different time.
9 Nov 1965	RG Menzies Walk opened - 4.5km walk along northern side of lake.
April 2018	Henry Rolland Park opened on the waterfront of Acton.
	Australians of the year walk opened.

1965

Figure 75: 1965. Aerial view of Commonwealth Avenue Bridge. Australian News and Information Bureau, photographer, W Nichol.

Source: National Archives of Australia, A1200, L52723, Item ID 7594948.

Figure 76: 1965. Aerial view of Commonwealth Avenue Bridge. Australian News and Information Bureau, photographer, W Nichol.

Source: National Archives of Australia, A1200, L52722, Item ID 11484840.

Figure 77: 1965. Commonwealth Bridge, Canberra.

Source: National Archives of Australia, A1500, K12616, Item ID 11701647.

1965

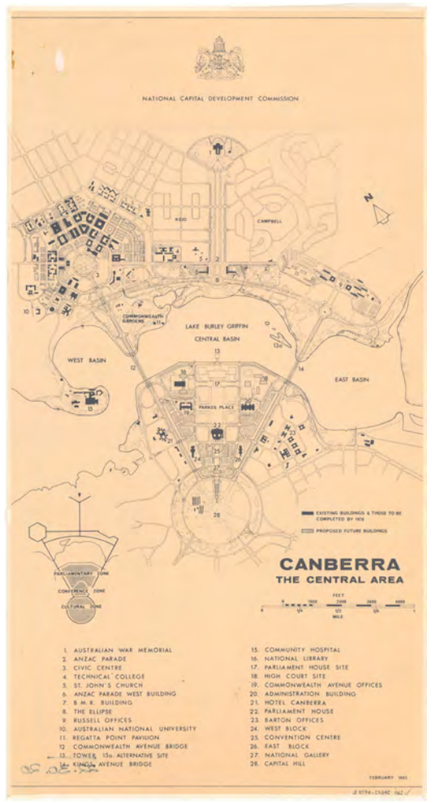


Figure 78: 1965. Canberra - the Central Area.

Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-363778623

1966

Figure 79: 1966. The tourist ferry, Mimosa, passes under Commonwealth Avenue Bridge on Lake Burley Griffin. Australian News and Information Bureau.

Source: National Archives of Australia, A1200, L54475, Item ID 11719040.

Figure 80: 1966. Lake Burley Griffin, Commonwealth Avenue Bridge.

Source: National Archives of Australia, A1500, K14662, Item ID 8295771.

Figure 81: 1966. Indian engineers at Lake Burley Griffin, Commonwealth Avenue Bridge, photographer, W Pedersen.

Source: National Archives of Australia, A1501, A6291/3, Item ID 7571356.

1966/67

Figure 82: 1966. Jean Pope - Philippine journalist, view from Black Mountain of the newly completed bridges, photographer, W Pedersen.
Source: National Archives of Australia, A1501, A6231/6, Item ID 7560641.

Figure 83: 1967. Aerial view.
Source: National Archives of Australia, A1200, L65181, Item ID 11719102.

Figure 84: 1967. Aerial view.
Source: National Archives of Australia, A1200, L65165, Item ID 11145692.

1967

Figure 85: 1967. Commonwealth Avenue Bridge from Parkes.
Source: National Archives of Australia, A8763, KN17067, Item ID 114081432.

Figure 86: 1967. Commonwealth Bridge ACT - unusual angle looking between piles, Australian News and Information Bureau.
Source: National Archives of Australia, A1200, L63643, Item ID 11202923.

Figure 87: 1967. Lake Burley Griffin at Commonwealth Bridge, police launch passing, Australian News and Information Bureau.
Source: National Archives of Australia, A1200, L63648, Item ID 11661722.

1968

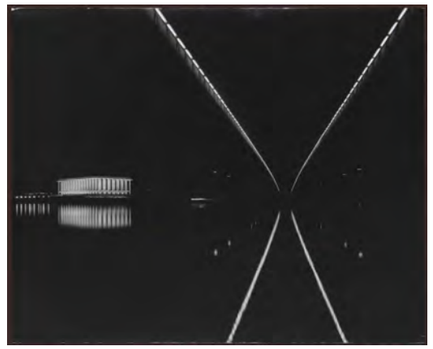


Figure 88: 1968. [National Library of Australia at night from beneath Commonwealth Avenue Bridge near Regatta Point, Canberra, 1968], Max Dupain photographer.
Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-144064689

1969

Figure 89: 1964-1980. Commonwealth Avenue Bridge, photographer Robin Smith.
Source: National Archives of Australia, B942, Item ID 30764630.

Figure 90: 1969. Commonwealth Bridge, Canberra.
Source: National Archives of Australia, A8763, KN20920, Item ID 11408154.

Figure 91: 1970. Captain Cook globe and Commonwealth Bridge, early morning.
Source: National Archives of Australia, A1500, K25911, Item ID 11925108.

1974

Figure 92: 1974. Looking to Civic over the Commonwealth Avenue Bridge.
Source: National Archives of Australia, A6135,K5/12/74/4 Item ID 11720731.

Figure 93: 1974. Canberra looking towards Commonwealth Bridge from Russell Hill.
Source: National Archives of Australia, A6135, K21/8/74/25, Item ID 11720697.

Figure 94: 1974. Commonwealth Avenue Bridge.
Source: National Archives of Australia, A6135,K18/10/74/85 Item ID 11963157.

1975

Figure 95: 1975. Commonwealth Avenue Bridge.

Source: National Archives of Australia, A6135, K28/7/75/42, Item ID 11720746.

Figure 96: 1975. Commonwealth Avenue Bridge.

Source: National Archives of Australia, A6135,K28/7/75/46 Item ID 11720750.

Figure 97: 1975. Commonwealth Avenue Bridge.

Source: National Archives of Australia, A6135,K28/7/75/41 Item ID 11720763.

1978

Figure 98: 1978. Aerial view of farmers demonstration on Commonwealth Avenue Bridge, 9 July 1985.

Source: National Archives of Australia, B583,86/1978 Item ID 31141232.

1985

Figure 99: 1985. Australian National University students conduct a 'funeral march' across the Commonwealth Bridge as part of ANU Bush Week. Photographer, Lende.

Source: ACT Heritage Library,002364, part of Canberra Times Collection.

1985

Figure 100: 1985. Aerial view of farmers demonstration on Commonwealth Avenue Bridge, 9 July 1985.

Source: National Archives of Australia, A6135,K9/7/85/42 Item ID 11737021.

Figure 101: 1985. Aerial view of farmers demonstration on Commonwealth Avenue Bridge, 9 July 1985.

Source: National Archives of Australia, B6135,K9/7/85/43 Item ID 11737022.

1987

Figure 102: 1987. Aerial view of Canberra around Lake Burley Griffin and Commonwealth Avenue Bridge.

Source: National Archives of Australia, A8746, KN26/10/87/37 Item ID 11721903.

1994

Figure 103: 1994. Northbound traffic on Canberra's Commonwealth Avenue Bridge.

Source: National Archives of Australia, A6135, K6/1/94/162 Item ID 11721922.

Figure 104: 1994. Cyclists crossing Canberra's Commonwealth Avenue Bridge.

Source: National Archives of Australia, A6135, K6/1/94/164 Item ID 11721955.

Figure 105: 1994. Canberra's Commonwealth Avenue Bridge.

Source: National Archives of Australia, A6135, K6/1/94/163 Item ID 11721923.

2018

Figure 106: Protestors walking across the Commonwealth Avenue Bridge holding banners and signs during the day of mourning march on Australia Day, Canberra, 26 January 2018.

Source: Trove, https://nla.gov.au:443/tarkine/nla.obj-735919880

1.5 Historical Context of Commonwealth Park

The history of the development of Commonwealth Park is outlined in the Canberra Central Parklands Heritage Management Plan, Prepared by Duncan Marshall, Dr Sandy Blair (Context Pty Ltd), Craig Burton, Alistair Grinbergs and Roslyn Russell for the National Capital Authority in 2009. Key historical plans, sourced from this document, are included for reference.

1918

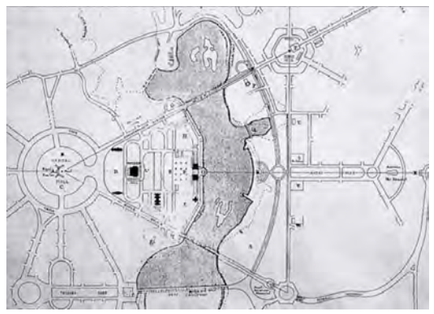
Figure 107: Detail of Griffins' 1918 Plan as Gazetted in 1925.

Source: Reid 2002, p. 179.

1945

Figure 109: Air photo of the Commonwealth Park area, 1945.

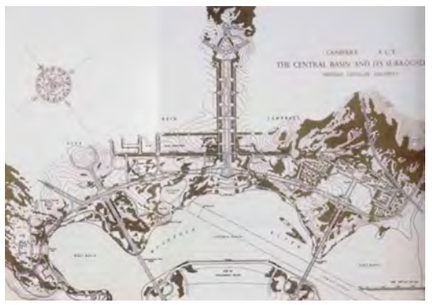
Source: Reproduced in Gray 1996.



1957

Figure 111: Holford's Plan of 1957.

Source: Reid 2002, p. 240.



1961

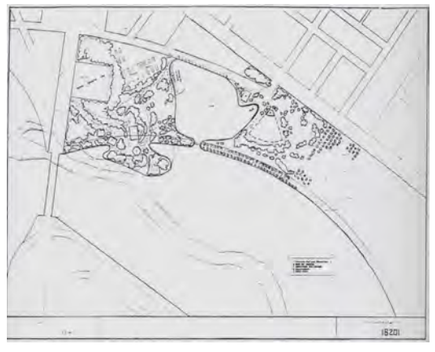
Figure 113: NCDC Landscaping Plan of 1961.

Source: Reid 2002, p. 272.

1933

Figure 108: Detail of 1933 Plan of Canberra showing extent of development.

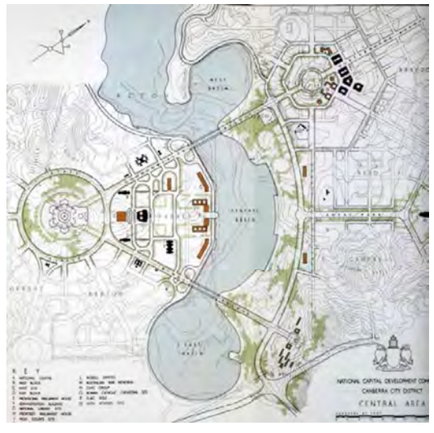
Source: Detail of 1933 Map of Canberra prepared by the Property & Survey Branch of the Department of the Interior, National Library of Australia..



1949

Figure 110: Plan by Pryor for Commonwealth Park, 1949.

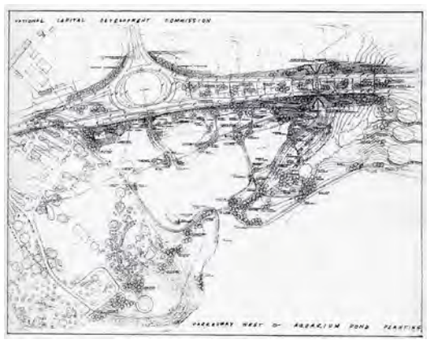
Source: Reproduced in Gray 1994.



1959

Figure 112: NCDC Plan of 1959.

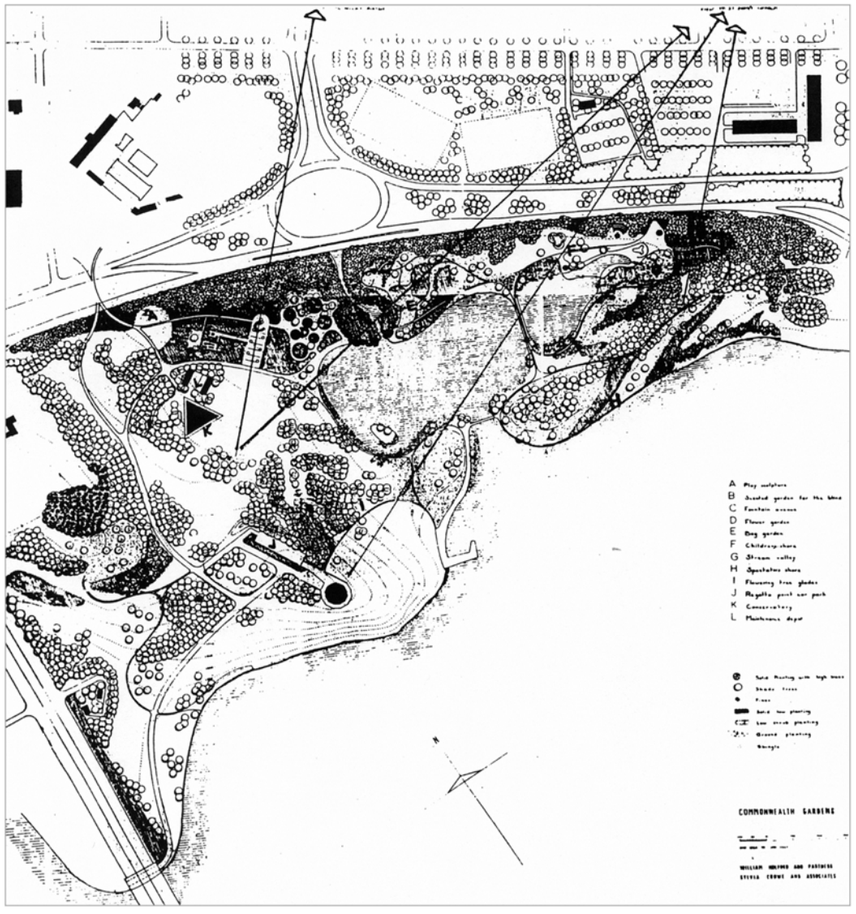
Source: Reid 2002, p. 264.



1963

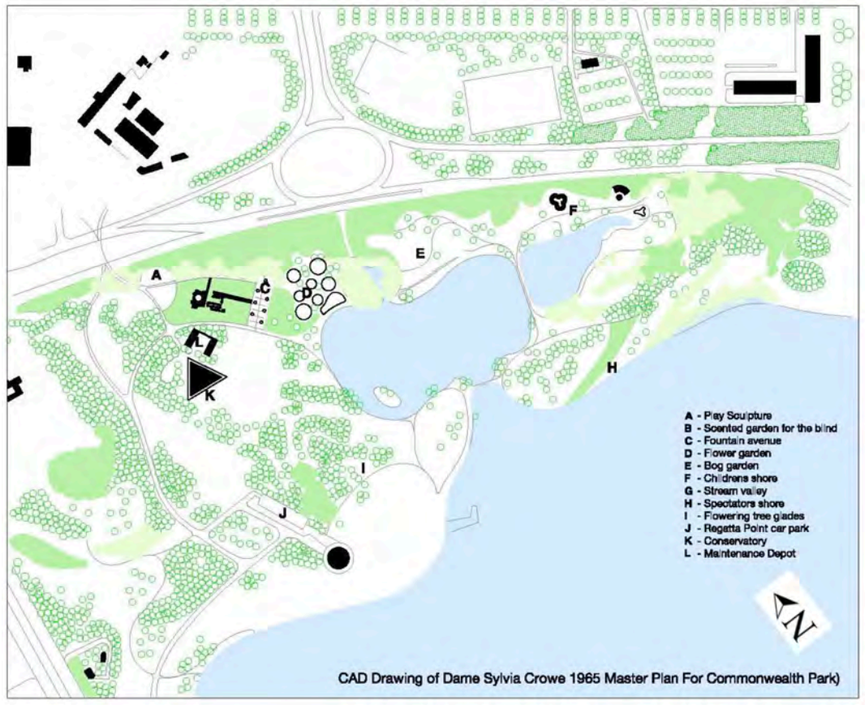
Figure 114: Plan of Commonwealth Park by Clough for the NCDC, 1963.

Source: Gray 1994.



1965

Figure 115: Dame Sylvia Crowe's Plan for Commonwealth Park (Original).
Source: NCA.



1965

Figure 116: Dame Sylvia Crowe's Plan for Commonwealth Park (Modern Re-Drawing).
Source: NCA.

1968

Figure 117: NCDC Plan for Commonwealth Park, 1968.
Source: Gray 1994.

1.6 Current Situation

The project team conducted site visits on 16 September and 19 October 2022.

Figure 118: Commonwealth Avenue Bridge viewed from Henry Roland Park

Figure 119: Commonwealth Avenue Bridge viewed from Henry Roland Park

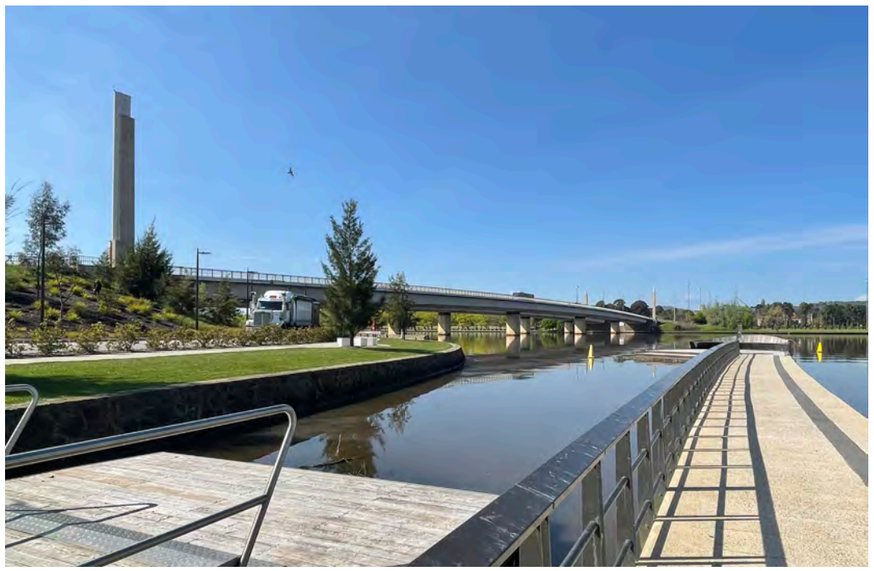


Figure 120: Commonwealth Avenue Bridge viewed from Henry Roland Park

Figure 121: Commonwealth Avenue Bridge viewed from Barrine drive.

Figure 122: Commonwealth Avenue Bridge viewed from Barrine Drive looking towards Parliament.

Figure 123: Base of Pylon situated NW of bridge.

Figure 124: View from Barrine Drive looking south.

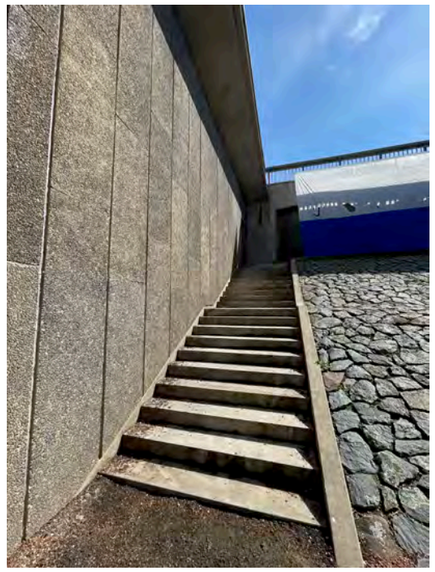


Figure 125: Stairs and embankment between the 2 bridges.

Figure 126: View from embankment between bridges towards Parliament House.

Figure 127: Plaque located between 2 bridges.

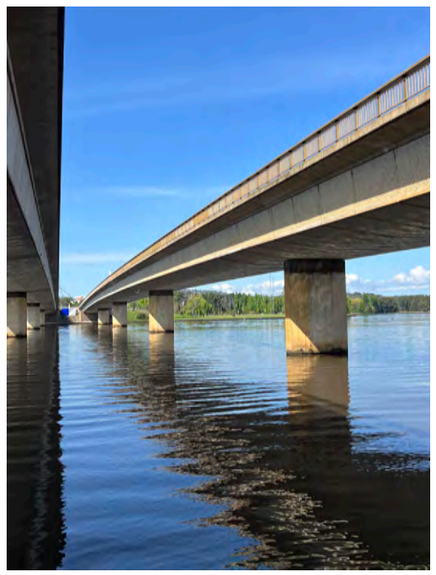


Figure 128: View of western bridge .

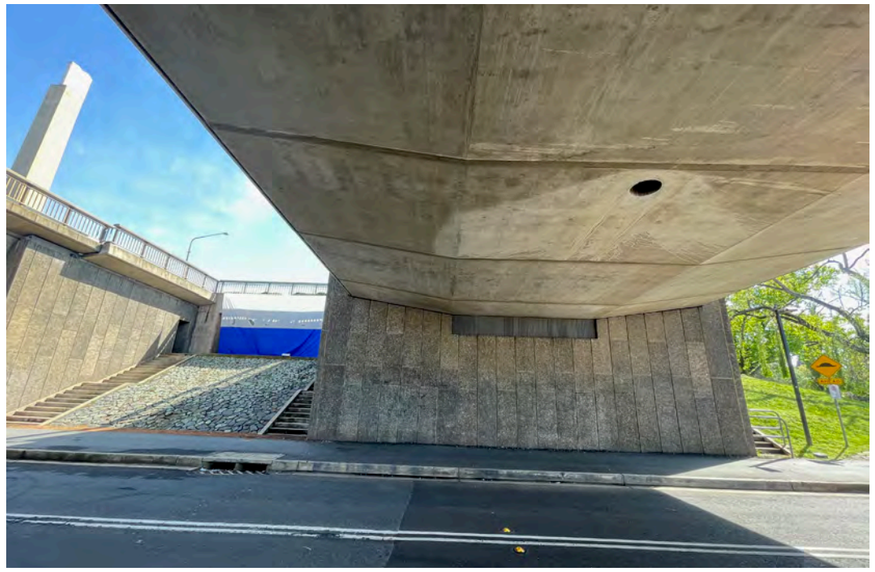


Figure 129: View of underside of eastern bridge on the city side.

Figure 130: Centred view of eastern bridge soffit and pier.

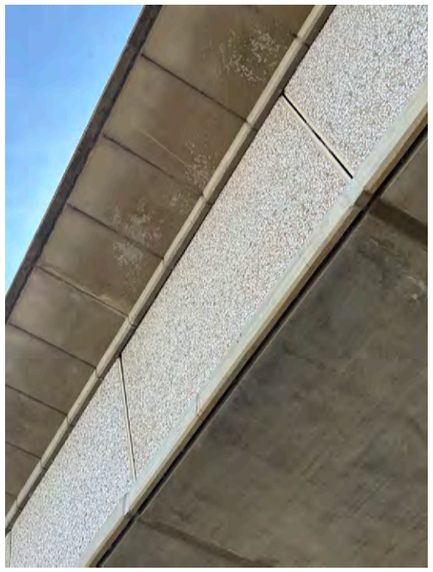


Figure 131: Detail shot of bridge edge showing precast panelling.

Figure 132: Detail shot of bridge edge showing precast panelling.

Figure 133: Detail shot of bridge edge showing precast panelling on eastern bridge.

Figure 134: View from Commonwealth Park.

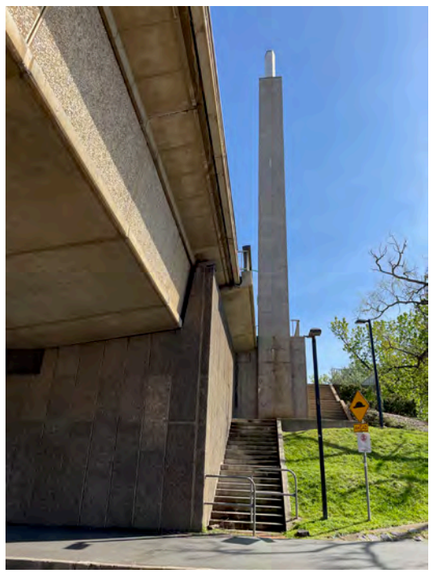


Figure 135: NE stair and Pylon.

Figure 136: NE junction of bridge, stair and Pylon.

Figure 137: NE Pylon and stair from across Barrine Drive.

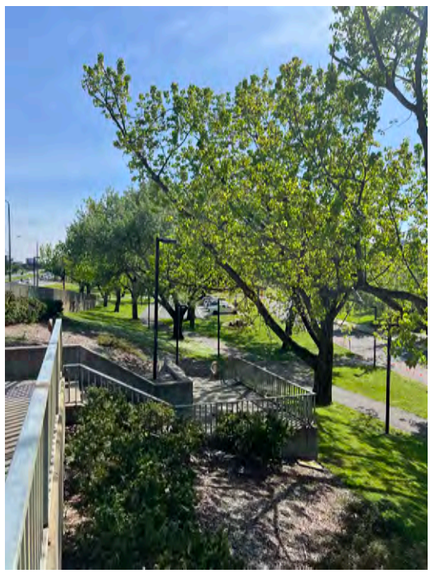


Figure 138: Stair connection to Commonwealth Park.

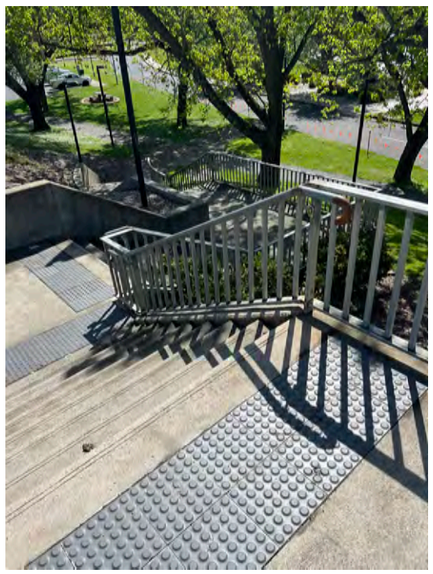


Figure 139: Stair connection to Commonwealth Park.

Figure 140: Stair arrangement around plinth to pylon.

Figure 141: Top of Stair connection to Commonwealth Park.

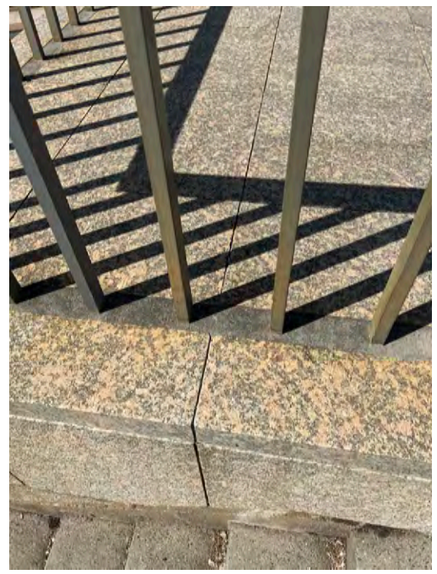


Figure 142: Balustrade detail to plinth.

Figure 143: NW Pylon.

Figure 144: Approach to bridge southbound.

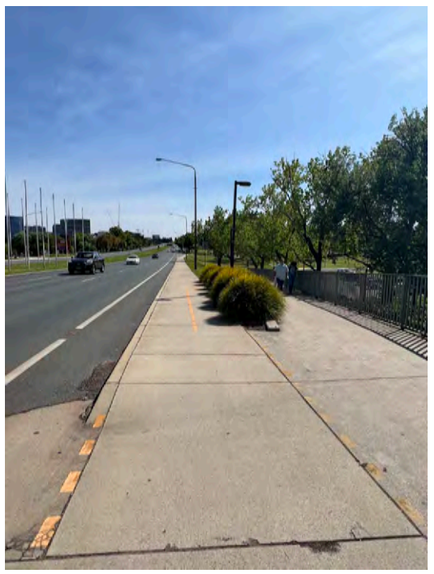


Figure 145: View of approach to bridge southbound.

Figure 146: Current barrier termination.

Figure 147: Barrier detail on southbound side.

Figure 148: Pedestrian/ cycleway pinch point southbound.

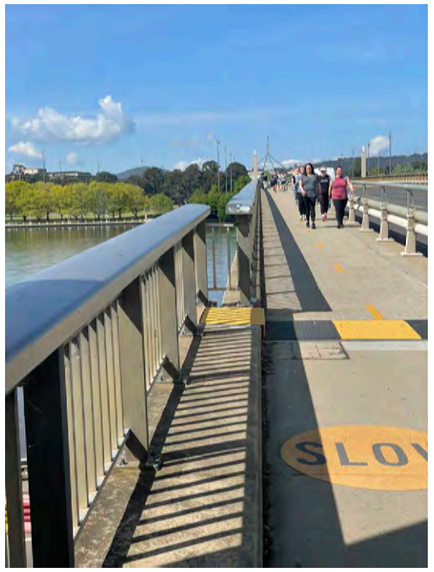


Figure 149: Balustrade junction on movement joint of bridge.

Figure 150: Pedestrian/ cycleway pinch point southbound.

Figure 151: Movement joint of bridge looking west.

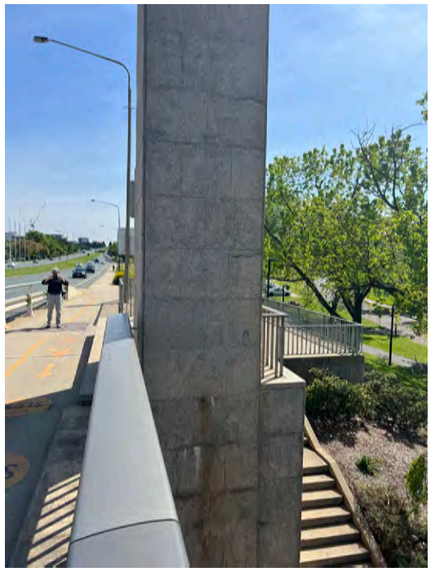


Figure 152: NE Pylon southern face.

Figure 153: Pedestrian/ Cyclepath southbound.

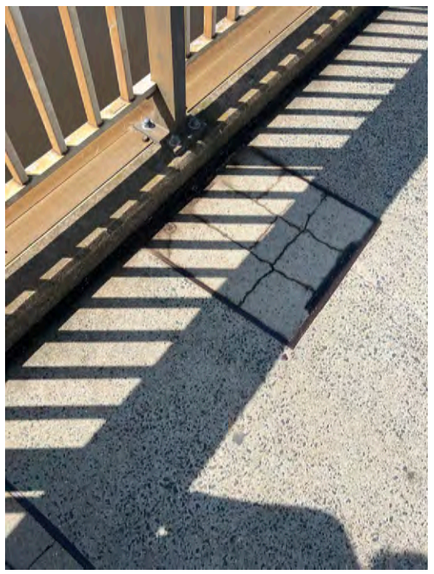


Figure 154: Balustrade fixing detail.

Figure 155: Balustrade lighting detail.

Figure 156: Southern Pylons viewed from southbound bridge.

Figure 157: SW Pylon across lanes.

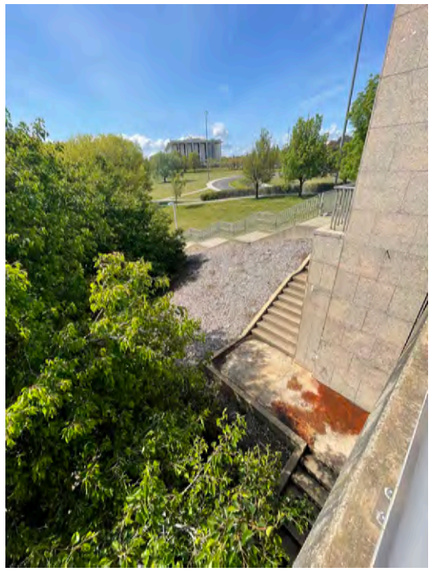


Figure 158: SE Pylon stair case.

Figure 159: SE stair and ramp access to bridge.

Figure 160: Section between Commonwealth Avenue Bridge and Flynn Drive bridges.

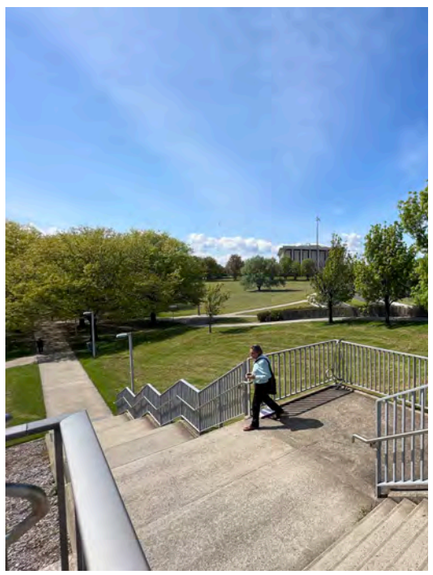


Figure 161: Stair connection to formal oak tree avenue.

Figure 162: Flynn Drive Bridge detail.

Figure 163: Plinth and stair detail SE Pylon.

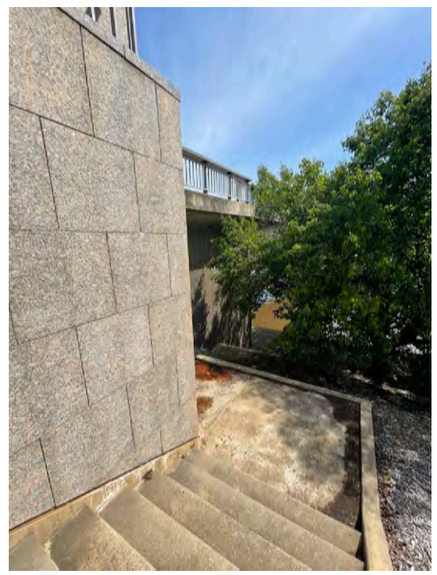


Figure 164: Plinth and stair detail SE Pylon.

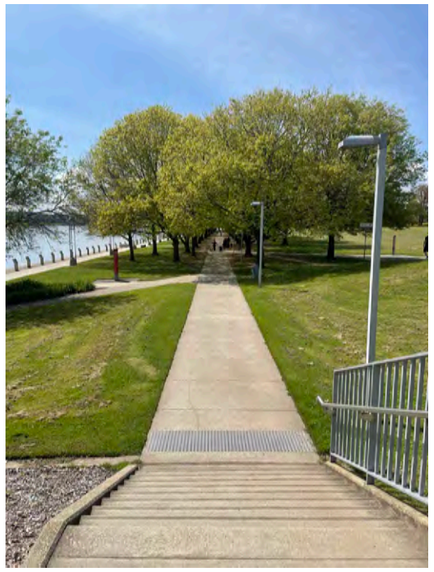


Figure 165: Stair connection to formal oak tree avenue.

Figure 166: Rammed path access to bridge.

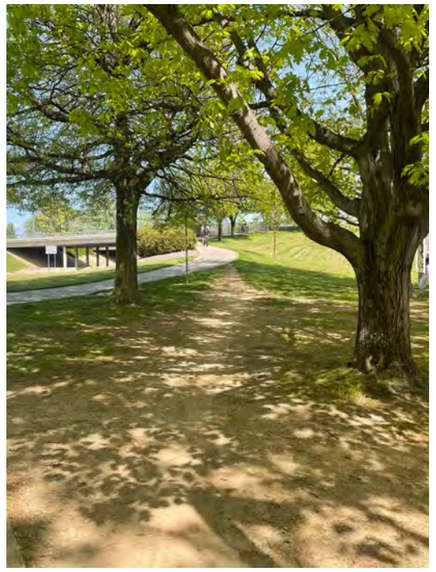


Figure 167: Desire lines coming off rammed path access to bridge.

Figure 168: Commonwealth Avenue bridge viewed from oak tree avenue.

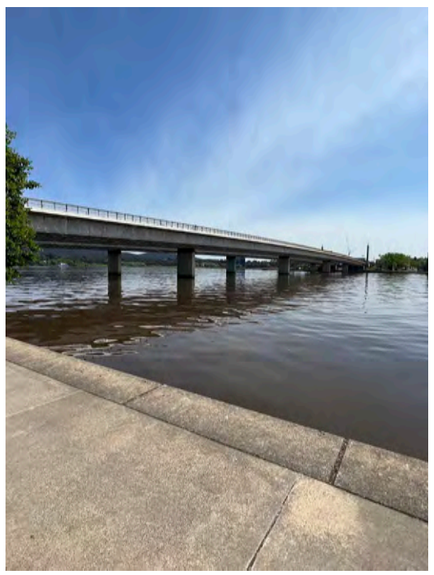


Figure 169: Bridge viewed from Australians of the Year walk.

Figure 170: Bridge viewed from lake foreshore walk.

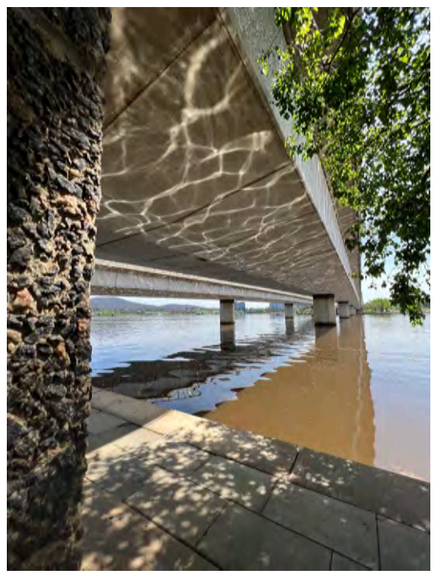


Figure 171: Detail bridge soffit with water reflection.

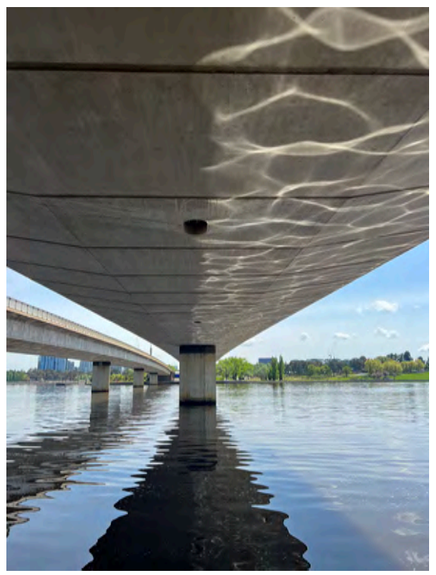


Figure 172: Soffit of southbound bridge showing hole with lighting.

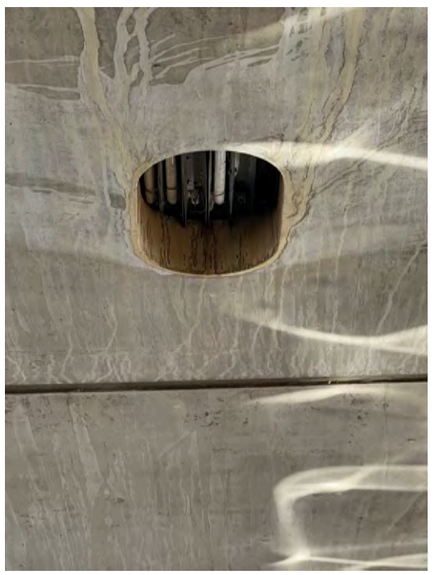


Figure 173: Detail of lighting.

Figure 174: View of northbound bridge.

Figure 175: Looking north towards the City Centre.

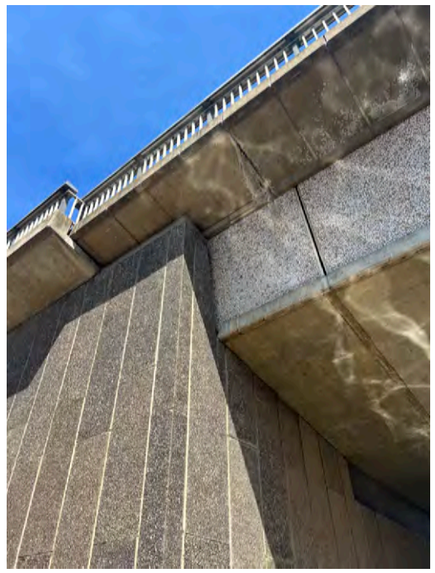


Figure 176: Southern bridge abutment.

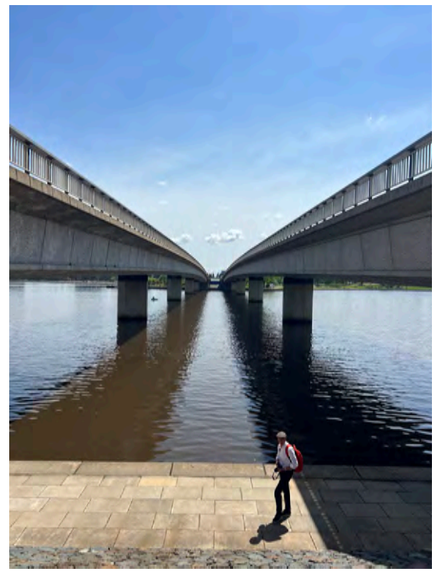


Figure 177: Looking north towards the City Centre.

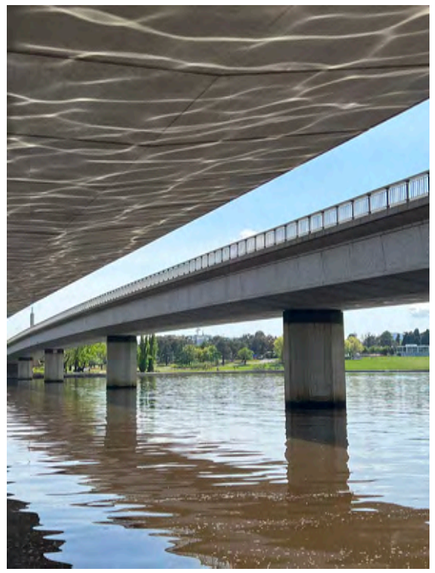


Figure 178: View of southbound bridge.

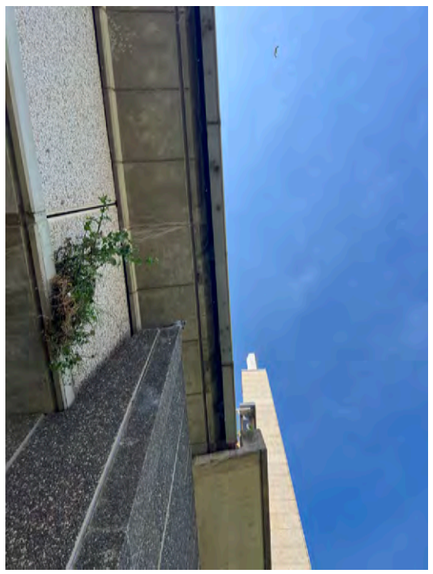


Figure 179: Detailed view of bridge connection and abutment.

Figure 180: View of abutment.

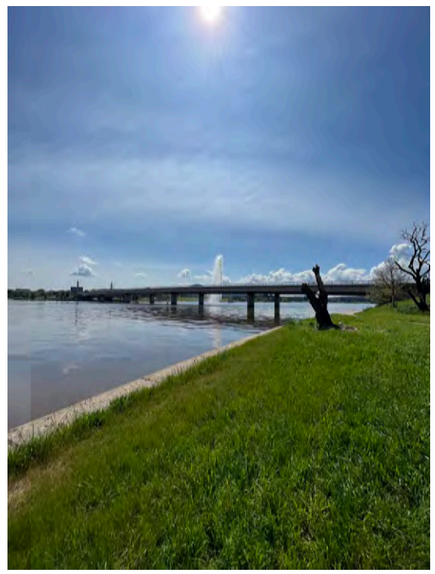


Figure 181: View of bridge from West Basin loop.

Figure 182: Flynn Drive cycle way.

Figure 183: Connection from Flynn Drive cycle way onto bridge north bound.

Figure 184: View northbound bridge.

Figure 185: Connection from Flynn Drive cycle way onto bridge north bound.

Figure 186: Flynn Drive bridge pathway.

Figure 187: Northbound pathway.

Figure 188: Substation on SW corner of bridge.

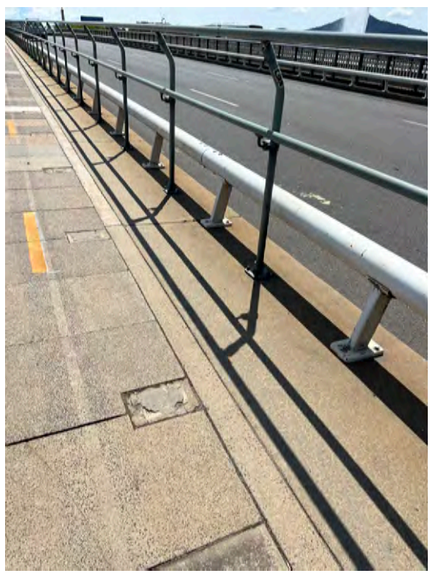


Figure 189: Current barrier detail north bound.

Figure 190: Pathway northbound on Civic side.

Figure 191: Pathway detail of pavement, barrier, balustrade and plinth.

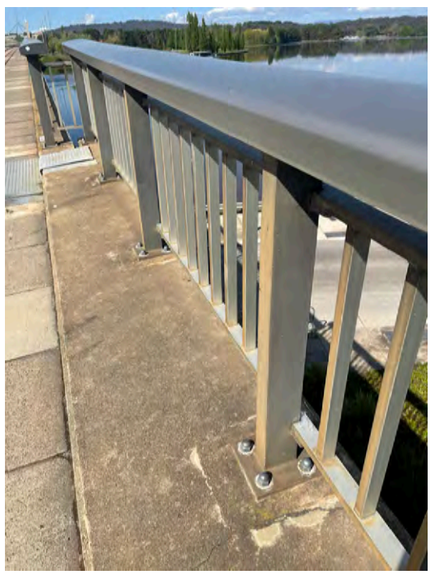


Figure 192: Balustrade detail.

Figure 193: Termination detail of north bound barrier.

Figure 194: NW Plinth and Pylon detail.

Figure 195: NW Pylon and pathway.

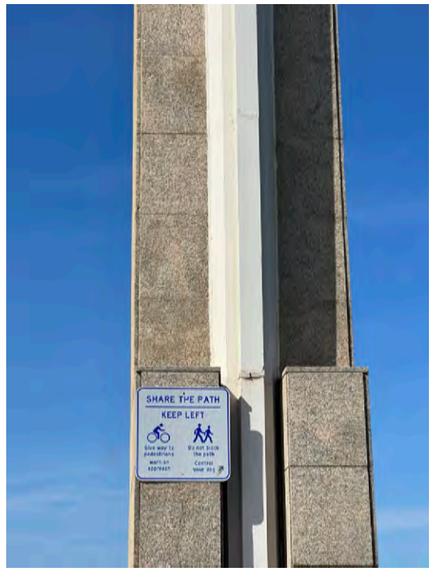


Figure 196: NW Pylon detail.

Figure 197: NW Pylon detail.

Figure 198: Termination detail of northbound barrier.

Figure 199: Cycle path termination northbound.

Figure 200: Base detail of widened path.

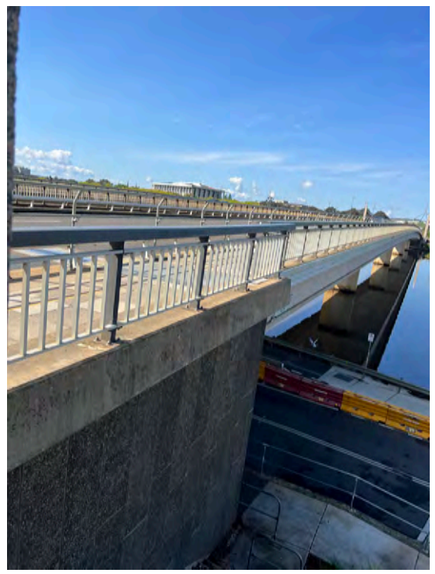


Figure 201: Edge detail abutment showing balustrade.

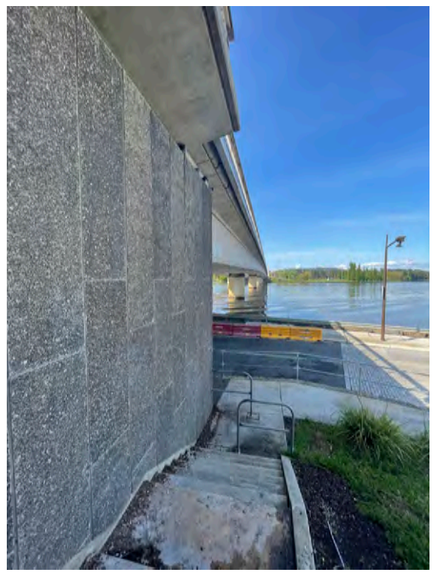


Figure 202: NW stair leading to Barrine Drive.

1.7 Heritage Statutory Context

The following summary of the heritage statutory context has been extracted from the GML Heritage, *Commonwealth Avenue Bridge Heritage Assessment*, September 2020[4] and relates to the bridge itself, which is under Commonwealth ownership. It is noted that land to the west of the bridge, on either side of the lake, is managed by the ACT Government and hence subject to different regulations.

1.7.1 Heritage Status

Commonwealth Avenue Bridge is not listed on the Commonwealth Heritage List (CHL) or National Heritage List (NHL) as an individual heritage place. It is, however, included within, or adjacent to, the boundaries of the following heritage places:

- Lake Burley Griffin and Adjacent Lands (CHL)
- Parliament House Vista (CHL)

Other Heritage Assessments

Commonwealth Avenue Bridge is also included within the following places which have been nominated for listing in the past:

- National Land Roads (nominated CHL)
- Canberra the Planned National Capital (nominated NHL)

Commonwealth Park is also included in the nomination for:

- Canberra Central Parklands

Although these nominations did not result in the places being listed, the heritage values identified in each of these Heritage Management Plans should still be acknowledged in any proposal for changes.

1.7.2 Environment Protection and Biodiversity Conservation Act 1999 (Cwth)

The Commonwealth Avenue Bridge is located on Commonwealth land and is managed by a Commonwealth agency, (the National Capital Authority (NCA)). It is therefore subject to the *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC Act*) and its regulations.

The *EPBC Act* is the federal government's central piece of environmental legislation. Under the *EPBC Act*, a Commonwealth agency that owns or controls a place that has, or might have, one or more Commonwealth Heritage values must take all reasonable steps to assist the Minister and the Australian Heritage Council in the identification, assessment and monitoring of the place's Commonwealth Heritage Values (s341Z). For best practice, all heritage aspects should be evaluated, including historic, natural and indigenous, and the assessments should be undertaken against the Commonwealth Heritage criteria set out in Section 10.03A of the EPBC Regulations.[5]

For Indigenous values and engagement, '*Engage Early Guideline 2016'* and *'Ask First'* should be referred to.

The *EPBC Act* provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places - defined in the *EPBC Act* as '*matters of National Environmental Significance*' (MNES).

Under this Act, an action will require approval from the Minister if the action has, or will have, or is likely to have, a significant impact on a MNES or Commonwealth land.

1.7.3 The National Capital Plan

The National Capital Plan (NCP) forms the strategic planning framework for Canberra and the ACT. In accordance with Section 10(1) of the Australian Capital Territory (Planning and Land Management) Act 1988 (Cwth), the NCP sets out detailed conditions for planning, design and development to ensure that 'Canberra and the Territory' are planned and developed in accordance with their national significance'.

The NCP specifies areas of land that have 'special characteristics of the National Capital' to be Designated Areas. The NCA has responsibility for determining detailed planning policy and the provision of Works Approval to ensure development is consistent with the NCP. Designated Areas are divided into a series of precincts, with detailed conditions of planning, design and development - Precinct Codes and General Codes - outlined for each precinct.

Commonwealth Avenue Bridge is located within the boundaries of the Lake Burley Griffin and Foreshores Precinct Code, and Commonwealth Avenue is identified as one of the main avenues of the Main Avenues and Approach Routes Precinct Code.[6]

Impacts on Heritage Values and Self Assessment Process

The NCA acts in accordance with the *EPBC Act* to ensure that it does not take any action that has, will have or is likely to have an adverse impact upon the identified heritage values (National and/or Commonwealth) of any place in its ownership or control. The NCA's established procedures and guidance for works proposals that take into account the heritage values of places included in the CHL and NHL are included in the NCA's Heritage Manual.

The Heritage Manual, which refers to the Significance Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies, 2012 (prepared by the Department responsible for the *EPBC Act*) informs staff how to identify the nature of an impact on a place with Commonwealth Heritage values, using the guidelines as the basis of its self-assessment process to reach a view on whether the impact is significant, with an adverse impact on heritage values of a place and if an *EPBC Act* referral is needed. The Heritage Manual provides examples of how to reach judgements, and the importance of taking a cautious approach.[7]

The process for National Capital Authority Works Approval

As with all actions proposed for Commonwealth Heritage Places in Designated Areas, the NCA's consideration of proposals is based on the relevant provisions of the National Capital Plan. Primarily, the NCA is obliged to comply with the works approval process for development proposals in Designated Areas.

The proposed works to Commonwealth Avenue Bridge require Works Approval and a submission to the NCA.[8]

4: GML Heritage, Commonwealth Avenue Bridge - Heritage Assessment, September 2020, p.3.

5: Commonwealth of Australia 2019, Working Together Managing Commonwealth Heritage Places, A Guide for Commonwealth Agencies, p.6. in GML Heritage report.

6: GML Heritage, Commonwealth Avenue Bridge Heritage Assessment, September 2020, p.3.

7: National Capital Authority Heritage Strategy, 2010-2013, in GML Heritage Memorandum, Commonwealth Avenue Bridge Handrail Upgrades - October 2016, pp.9-10.
8: Under the National Capital Plan, see NCA website. https://www.nca.gov.au/planning/works-approval

Figure 203: 1964. Commonwealth Avenue Bridge crossing Lake Burley Griffin.
Source: National Archives of Australia, A1200, L476111

2.0
Heritage Significance

2.1 Heritage Listing Summary

Commonwealth Avenue Bridge is not individually listed as a Heritage Item. It is, however, located within the curtilage of Lake Burley Griffin and Adjacent Lands and forms the western boundary of the Parliament House Vista.

The Heritage Assessment prepared by GML Heritage for the Commonwealth Avenue Bridge[9] assesses the significance of the bridge and concludes that it meets the criteria for Commonwealth listing. As such, it is important that any future changes to the bridge are planned in accordance with the *EPBC Act* and the NCA's internal self-assessment processes to minimise heritage impacts on the heritage values of the place.

2.1.1 Statutory Listings

Commonwealth Heritage List

The Commonwealth Heritage List was created under the *EPBC Act*. This statutory list recognises places of Commonwealth Heritage value which are owned by the Commonwealth Government.

NAME OF ITEM	PLACE NO.
Lake Burley Griffin and Adjacent Lands	105230
Parliament House Vista	105466

ACT Heritage Register

The ACT Heritage Register legally recognises and protects significant heritage places within the Australian Capital Territory. The following places are on the ACT Heritage Register or have been nominated and accepted under the previous ACT heritage legislation. It is noted that where places are located on National Land, under the control of the Commonwealth, the ACT Heritage Register does not legally apply.

NAME OF ITEM	ID NO.
Captain Cook Water Jet	Nominated

2.1.2 Non Statutory Listings

A listing on non-statutory registers does not provide any legal protection to heritage items or sites, but does demonstrate the recognised heritage value. Non-statutory heritage registers include the *Register of the National Estate* and those maintained by the Australian Institute of Architects, Engineers Australia and other organisations with an interest in heritage.

Register of the National Estate

The *Register of the National Estate* is a list of some 13,000 places of natural, Indigenous and historic significance throughout Australia that was originally established under the Australian Heritage Commission Act 1975. *The Register of the National Estate* ceased to be a statutory register in 2012 and is now maintained on a non-statutory basis as a publicly available archive and educational resource.

NAME OF ITEM	ID NO.
Lake Burley Griffin Conservation Area	101595
Parliament House Vista	13371

Register of the National Trust of Australia (ACT)

The National Trust of Australia (ACT) maintains a Register of Significant Heritage Places. National Trust listing is not a statutory listing and has no legal effect, but is a good indication of community concern for a place or item.

NAME OF ITEM
Lake Burley Griffin and Foreshores
Captain Cook Water Jet
The Parliamentary Triangle

2.1.3 Heritage Items in the Vicinity

There are many items of National, Commonwealth and State significance in the vicinity of the Commonwealth Avenue Bridge. These items are mapped on the following pages.

9: GML Heritage, Commonwealth Avenue Bridge - Heritage Assessment, September 2020.

2.1.4 Summary of Heritage Items in the Vicinity

The diagram to the right summarises heritage items, of varying levels of significance, in the vicinity of the Commonwealth Avenue Bridge.

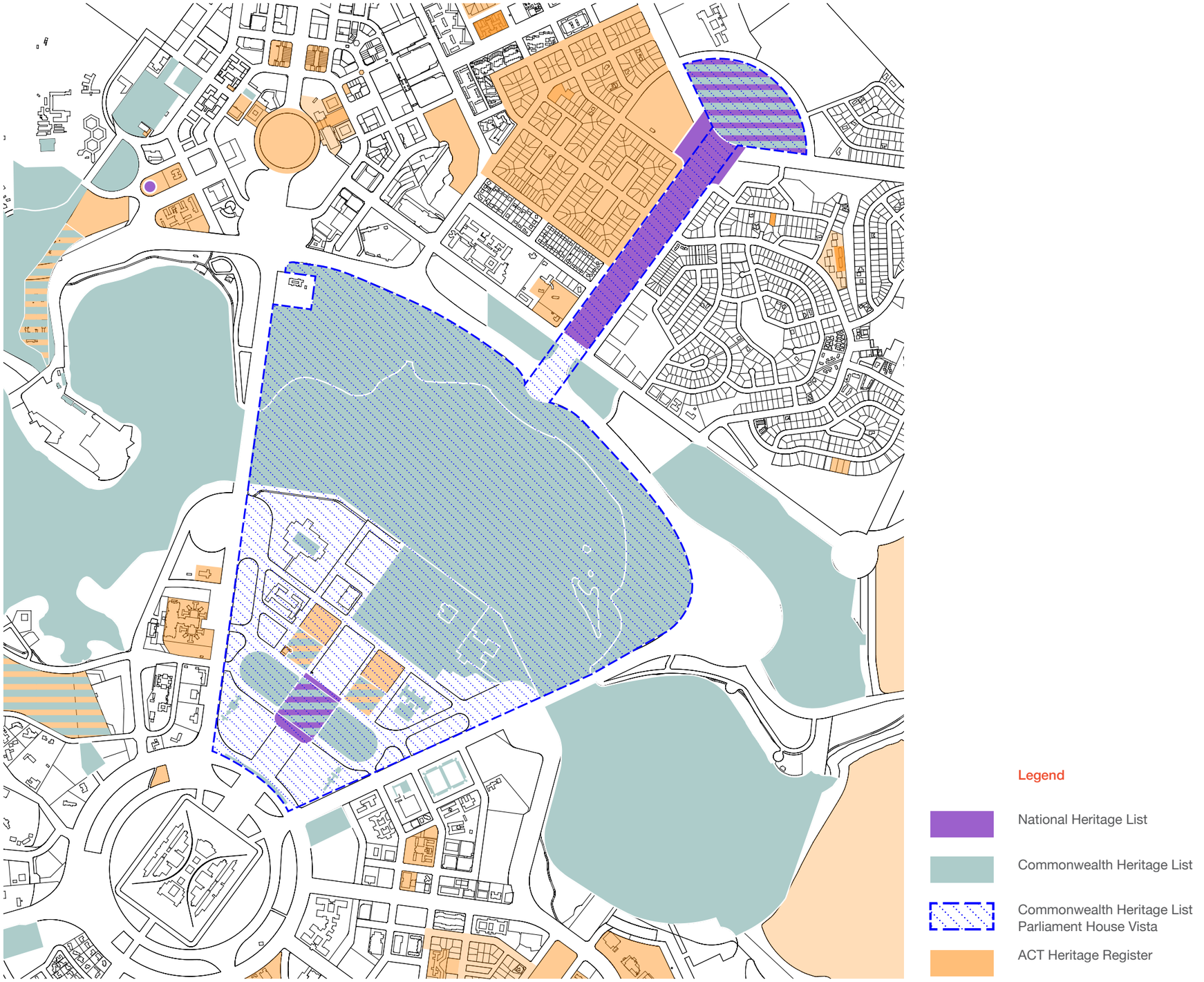


Figure 204: Heritage Listing summary diagram.
Source: TZG Architects, 2022.

2.2 National Heritage List

National Heritage items in the vicinity of the Commonwealth Avenue Bridge include:

	NAME OF ITEM	ID NO.
1	Australian War Memorial and the Memorial Parade.	105889
2	High Court - National Gallery Precinct.	105745
3	Old Parliament House and Curtilage.	105774
4	Australian Academy of Science Building.	105741

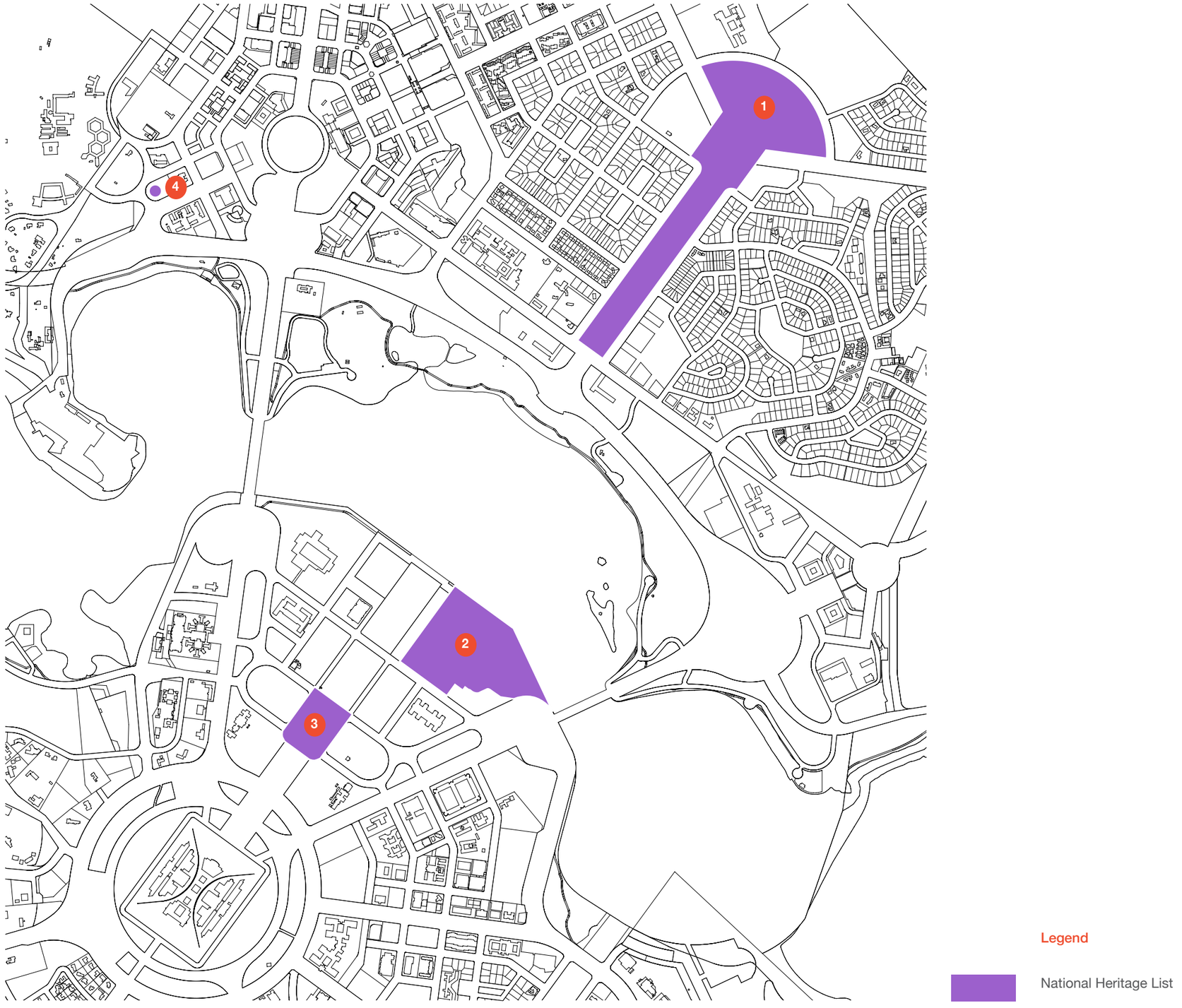


Figure 205: National Heritage Items diagram.
Source: ACT Government, online.

2.3 Commonwealth Heritage List

The Commonwealth Avenue Bridge is located within Lake Burley Griffin and Adjacent Lands heritage curtilage. It also defines one side of the Parliament House Vista curtilage.

There are many other Commonwealth Heritage items in the vicinity of the Commonwealth Avenue Bridge. These include:

	NAME OF ITEM	PLACE NO.
1	Parliament House Vista	105466
2	Lake Burley Griffin and Adjacent Lands	105230
3	National Library of Australia and surrounds.	105470
4	High Court of Australia.	105557
5	National Gallery	105558
6	John Gorton Building.	105472
7	National Rose Gardens.	105473
8	Old Parliament House and curtilage.	105318
9	Old Parliament House Gardens.	105616
10	Acton Peninsula Buildings.	Various
11	University House and gardens.	105190

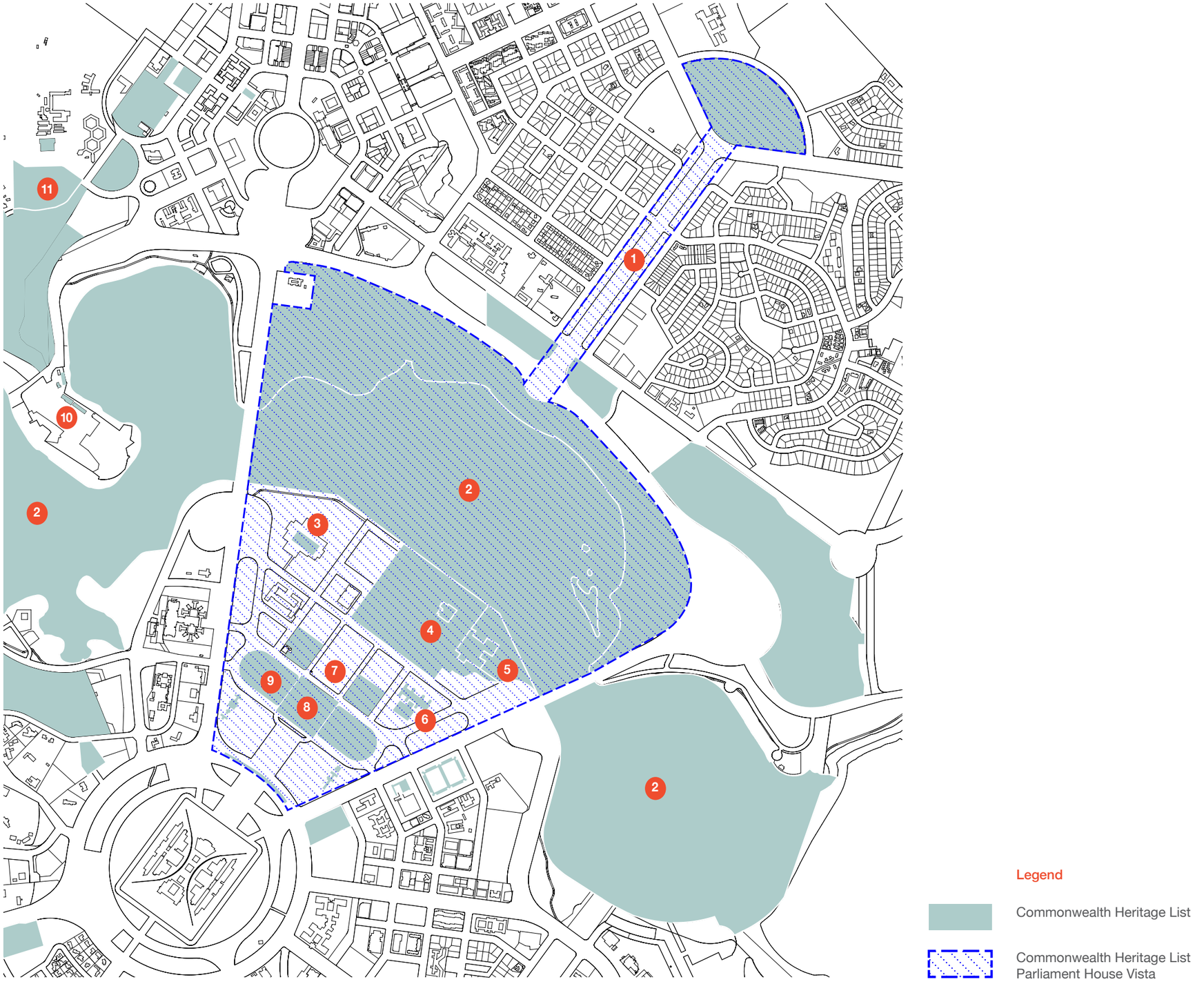


Figure 206: Commonwealth Heritage Items diagram.
Source: ACT Government, online.

2.3.1 Lake Burley Griffin and Adjacent Lands

The Commonwealth Avenue Bridge lies within the boundary of the Lake Burley Griffin and Adjacent Lands final values boundary.

The following assessment of significance has been extracted from the Heritage Management Plan (HMP) for Lake Burley Griffin and adjacent lands prepared by GML Heritage, with aspects relevant to the Commonwealth Avenue Bridge Renewal Project highlighted orange in the text that follows:

> The decision to list Lake Burley Griffin and Adjacent Lands on the Commonwealth Heritage List, pursuant to section 341JI of the *Environmental Protection and Biodiversity Conservation Act 1999* was reached on 8 April 2022. The Commonwealth Avenue Bridge lies within the curtilage of this listing which includes about 6640ha, comprising the following:
>
> 1. Lake Burley Griffin, extending to the outside walls where these exist or otherwise to a line drawn at the normal lake level, except that the line shall be drawn across the entrance to Lake Burley Griffin of the Molonglo River, Jerrabomberra Creek and Sullivans Creek. All islands within Lake Burley Griffin are included except for Aspen Island and the Carillon.
>
> 2. Scrivener Dam, Commonwealth Avenue Bridge and Kings Avenue Bridge.
>
> 3. Comprising Blocks 1, 3, 4, 5 Section 54 Parkes; Block 2 Section 38 Barton; Blocks 1, 2, 3, 4 Section 89 Acton; Block 1 Section 126 Yarralumla; Block 1 Section 129 Yarralumla; Block 1432 Central Canberra District.
>
> 4. Stirling Ridge and Attunga Point Yarralumla comprising Block 3 Section 128, Block 4 Section 22, Block 13 Section 108 Yarralumla.
>
> 5. Yarramundi Point comprising Block 1339, 1299, 1338, 1300, 1343 Canberra Central District.[10]

10: GML Heritage, Lake Burley Griffin Heritage Management Plan.

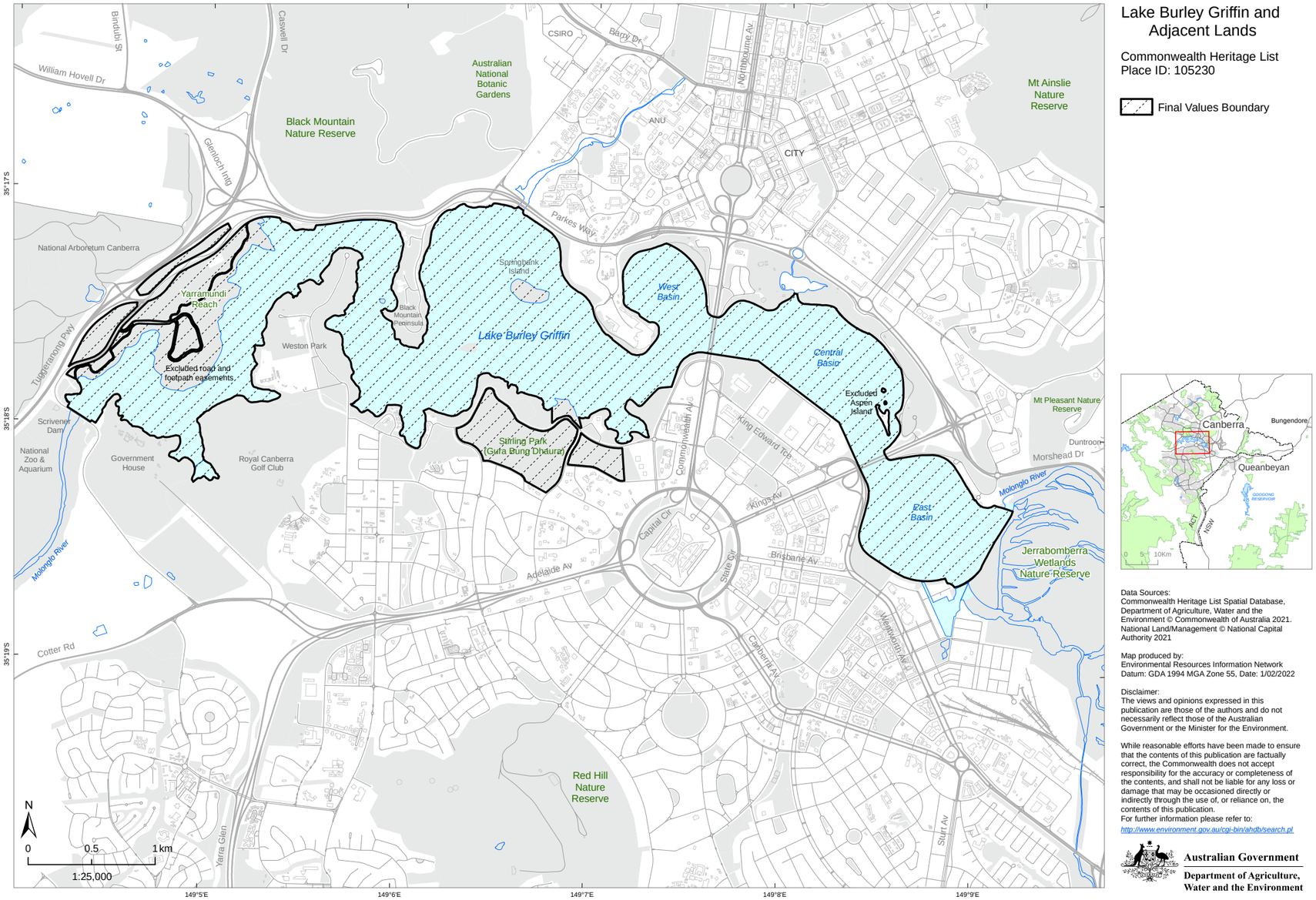


Figure 207: Lake Burley Griffin and Adjacent Lands Final Values Boundary.

Source: Department of Agriculture, Water and the Environment, available online.

Godden Mackay Logan summarise the heritage values relevant to the Commonwealth Avenue Bridge, identified in the Lake Burley Griffin HMP, as follows:

> Lake Burley Griffin and all its components and places, including foreshore plantings, reflective qualities, activities on the lake, lakeside vegetation, natural habitat areas, relationship to views and vistas of surrounding lands, particularly Mount Ainslie, Black Mountain and the Parliament House Vista, the dam, bridges, islands, relationships to the land axis, the designed foreshore parklands and important foreshore developments, meet the threshold for Commonwealth and National Heritage value.[11]
>
> As part of the significance assessment for the Lake Burley Griffin and Adjacent Lands HMP the Commonwealth Avenue Bridge was found to contribute to the assessment of the Lake against criteria A, B, C, E, F, G, H for Commonwealth Heritage Value.
>
> Significant attributes of Commonwealth Avenue Bridge include the elegant, designed form of the bridge, including its slim octagonal piers, spaced to provide views to West Basin, aluminium railings with strip lighting, the white colour of the precast concrete and the Waterloo Bridge stones. The bridge provides some of the most important views of Lake Burley Griffin, including surrounding near and distant topography, to both pedestrians and motorists.[12]

The bridge was also identified in the heritage assessment as an important element of Lake Burley Griffin as follows:

> Elements of creative and technical excellence constructed as part of Lake Burley Griffin include Scrivener Dam, Commonwealth Avenue Bridge and Kings Avenue Bridge, the Carillion, the Captain Cook Water Jet, Commonwealth Park, the islands and the lake's retaining walls.[13]
>
> The success and accuracy of the construction of the lake dam and the aesthetic qualities of the bridge are crucial to producing the image of Canberra as a highly sophisticated national capital - the equal of its international counterparts.[14]

CRITERIA	VALUES
CRITERION (a) The place has significant heritage value because of the place's importance in the course, or pattern, of Australia's natural or cultural history.	The Lake Burley Griffin and Adjacent Lands place has significant historic heritage value. Characteristics of the place with significant historic value include the following. From the early days of Canberra's establishment as the national capital, the gradual formation of Lake Burley Griffin marked major milestones in the capital city's creation. As a substantial national project, the construction and completion of Lake Burley Griffin demonstrates the push for national development during the years immediately after Federation and before the First World War, and again after the Second World War, under the Menzies government. Lake Burley Griffin is associated with the original city competition brief for the design of Canberra. Its final form at completion is consistent with the original guiding intentions set out in the competition brief. This link with the original brief connects us to the aspirations and vision Australians had for Federation and its capital city at the beginning of the twentieth century. The Lake's design and form reflect the story of its development including the tensions between designers, administrators and politicians in the development of the capital. The Lake's design reflects the influence of three major urban design movements including the City Beautiful movement, the Garden City movement and International Modernism. The use of City Beautiful and Garden City theories and ideas is reflected in the use and design of the lake to fulfill aesthetic, open space and outdoor recreation functions. The lake also forms part of the water axis and has been designed in parts to include symbolic, ceremonial, formal and informal and active and passive recreation space. The design influences of International Modernism can be seen in the engineering works within the place including the fish belly flap gates of Scrivener Dam, Commonwealth Avenue Bridge and Kings Avenue Bridge. The central area of Lake Burley Griffin provides an aesthetic and symbolic backdrop for many military and civil memorials along its foreshore. National events and ceremonies have and continue to be staged around, near and over the lake because of its beauty and function within the central national area. Stirling Park has a layered collection of Indigenous, pastoral and early capital city features including Aboriginal stone artefacts and arrangements, a scarred tree, old routes and tracks, exotic plantings, remnant mining sites, campsite and homestead sites and the remaining remnant structures of the former Westlake workers settlement. Westlake provided accommodation for early Canberra builders and tradesmen working on the construction of buildings like Old Parliament House, East Block, West Block and Hotel Canberra. The remnant layout of the Westlake settlement is still legible in the landscape demonstrating the living conditions of those early workers and their families who came to Canberra as builders and tradesmen. Over time this settlement became a strong community remembered today by former residents and their families. Roman Cypress Hill is a significant historic planting area. The remnant historic planting of Cupressus sempervirens was planted in 1919–1921 when the first planning and layout for Griffin's Canberra was being undertaken. Charles Weston's work to establish the landscape of the city is also partly demonstrated here. Today it is a remnant of Griffin's plan for the treatment of the western horizon. Only part of the hill planting remains in its original setting, the remaining planting area is located across the highway to the west. The Lindsay Pryor Arboretum is associated with the history of urban landscaping and city horticulture in Canberra. The historic planting in the arboretum area demonstrates some of Pryor's experimental work on the growth of a variety of tree species for potential use in the city's parks and streets. The planting and surrounding water areas also form part of the attractive parkland and water views from Government House. Features which express the significant historic values of the place include, but are not limited to: the lake as a whole including its edge treatments, the Captain Cook Water Jet, the Commonwealth and Kings Avenue bridges, Scrivener Dam, lake islands, the Lake's contribution to the geometry of Griffin's plan for Canberra; the remnant historic plantings of Cupressus sempervirens trees located on part of the hill known as Roman Cypress Hill; the remnant historic plantings within the Lindsay Pryor Arboretum; the site and remnant structures of the former Westlake settlement; the No 1 sewer vent in Stirling Park and the layered historic landscape of Stirling Park representing the Indigenous, pastoral and early capital city periods of Canberra.

11: GML Heritage, Lake Burley Griffin Heritage Management Plan, Vol1, p.5.
12: The views from Commonwealth Avenue Bridge are mapped in Figure 8.15 in the GML, June 2007, Lake Burley Griffin Heritage Assessment.
13: GML Heritage, Lake Burley Griffin Heritage Assessment, 2009, p.111.
14: ibid, p.153.

CRITERIA	VALUES
CRITERION (b) The place has significant heritage value because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.	The Lake Burley Griffin and Adjacent Lands place has significant rarity value because of the place's possession of uncommon, rare and endangered aspects of Australia's natural and cultural history. These rare aspects of the place are described below. **City Beautiful and Garden City exemplar** Lake Burley Griffin is an important exemplar design site which can demonstrate design and planning devices characteristic of the two most important town planning movements of the twentieth century; the City Beautiful and Garden City movements. Canberra is one of the few planned twentieth century cities in Australia and in the world. The city's national capital function provided planners and designers, like Griffin, with an opportunity to use their best and most innovative planning ideas drawing from the town planning practices of their time. In particular, the lake forms part of the water axis which Griffin used to arrange city elements and connect surrounding natural features. The grand scale of lake vistas along the water axis and in other areas gifts the National Triangle and city a sense of grandeur and beauty. The lake overall, also provides long water vistas which feature the surrounding, sometimes snow covered, Brindabella Mountains. Viewed from high vantage points like Black Mountain, Mt Ainslie and Red Hill, the lake is a distinctive character element providing a lake setting for its urban, residential and national capital activities and spaces. The lake also integrates the northern and southern sides of the central city. The formal areas of the lake also provide a water setting for national institutions which are showcased on its foreshore. The use of visual follies like the lake's islands, the National Carillon and the Captain Cook Memorial [water] Jet are examples of visual devices informed by the City Beautiful movement. From a Garden City perspective, the lake provides a variety of recreation spaces and is itself a huge open space in the middle of the central city area of Canberra. The lake area is almost twice the size of Central Park in New York. Stirling Park and Yarrumundi Reach are part of an extensive and generous system of parks and open space along the lake's foreshore. The treatment of Roman Cypress Hill also demonstrates the careful management of visual experiences which were planned deliberately in a dynamic way to enhance the visual experience of the city and National Triangle. The features which express these rarity values include but are not limited to the lake as a whole including its edge treatments, the Captain Cook Memorial Jet, the lake's two bridges, Scrivener Dam, lake islands, the lake's contribution to the realisation of the water axis, the Roman Cypress Hill planting, the use allocation of Stirling Park and Yarramundi reach as parkland, the long uninterrupted lake vistas and views (from the Lake) of the Brindabella Mountains and the many long water vistas afforded from the foreshore and for those using the lake for boating. **Engineering techniques** The 'fish-belly' flap gates of Scrivener Dam enable the lake's water levels to be controlled to a precise degree. The technology identified and built at Scrivener Dam (fish-belly-flap gates) is rare in Australia and represents the development of standards in hydrology and dam engineering in its time. **Natural areas** The large surviving grassy woodland area, now modified to grassland, at Yarramundi Reach displays important characteristics of the remnant Natural Temperate Grassland ecological community. This ecological community is recognised at a territory and national level as a threatened ecological community. The grassland at Yarramundi Reach provides habitat for the Striped Legless Lizard which is recognised at a territory and national level as a threatened species and the Perunga Grasshopper, also recognised as a threatened species. The White Box-Yellow Box-Blakely's Red Gum Grassy Woodland ecological community of Stirling Park is a recognised threatened ecological community. This community provides habitat for another threatened species, the Button Wrinklewort, and may provide suitable habitat for the vulnerable Gang-gang Cockatoo and Superb Parrot. Both the remnant Natural Temperate Grassland of Yarramundi Reach and the derived native grassland in the western section of Stirling Park may also provide important habitat for the critically endangered Golden Sun Moth. Wetland environments at Yarramundi Inlet, Acacia Inlet and Warrina Inlet, comprising reed beds, fringing terrestrial vegetation and open water, provide habitat for a diverse population of waterfowl and land birds. Latham's Snipe, the Common Greenshank, the Red-necked Stint and the Sharp-tailed Sandpiper, listed migratory wetland species, are recorded from these wetlands. Other locally rare species recorded here include the Greater Crested Grebe, the Little Bittern, the Little Grassbird and the Musk Duck.

CRITERIA	VALUES
CRITERION (b) The place has significant heritage value because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history. (Continued)	The wider aquatic ecosystem of the lake provides habitat for the threatened Murray Cod. Below the waters and along the shoreline of the lake are occurrences of limestone, including a limestone cave; rare examples of a feature from which the original postcontact settlement name for the Canberra locality, the 'Limestone Plains,' is derived. Early descriptions of the area often refer to limestone, but most examples have since been either built on or submerged under the lake. The features which express the natural rarity values include but are not limited to the whole area of designated grassland on Yarramundi Reach; the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland community on the slopes of Stirling Ridge; the lake habitat of the Murray Cod comprising the waterbody, aquatic vegetation and lake bed; the grassland habitat of the Striped Legless Lizard, Perunga Grasshopper and Golden Sun Moth, which includes the whole area of designated grassland on Yarramundi Reach and the western section of Stirling Park; the habitat of the Button Wrinklewort which includes the upper slopes of the central and western parts of Stirling Park; the wetland bird habitats along the foreshores and shallows of the two inlets along Yarramundi Reach and the one inlet to the east of Government House; the Acacia Inlet wetland at the northern end of Yarramundi Reach, extending south along the reach and including the majority of reed beds along the Reach foreshores, and the limestone formations occurring both above and below the surface of the lake.
CRITERION (c) The place has heritage value because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history	The Lake Burley Griffin and Adjacent Lands place has significant research value because of the place's potential to yield information that will contribute to an understanding of Australia's history and practice of urban planning, architecture and landscape architecture. Indigenous sites and natural sites are also able to yield important information. Specific areas or characteristics able to yield information are described below. **Design and planning studies** Lake Burley Griffin and its many 'design layers' is a source of information about key theories, practices and histories associated with urban planning, architecture and landscape architecture. Evidence of the work of key practitioners including Walter Burley Griffin, Marion Mahoney, John Sulman, Charles Weston, Lindsay Pryor, Sir William Holford, Dame Sylvia Crowe, Richard Clough, Peter Harrison, Trevor Gibson, and John Overall are also evident and are a valuable historic resource for further study and examination. The fish belly flap gates of Scrivener Dam and the two major bridges also provide the opportunity for further research and teaching potential associated with engineering practice and design technologies. The features which express these significant historic research values include but are not limited to Lake Burley Griffin and its designed and planned features associated with the design practitioners mentioned above. **Natural Science** The occurrence of threatened species in the Yarramundi grasslands (particularly the Striped Legless Lizard and Perunga Grasshopper) and at Stirling Park (Button Wrinklewort), and the ecological communities themselves (Natural Temperate Grassland and White Box-Yellow Box-Blakely's Red Gum Grassy Woodland) provide opportunities for ecological research on habitat and population relationships. The lake's wetlands offer similar opportunities for the study of resident and migratory birds. The freshwater ecosystems of the wider lake also provide research opportunities for the study of aquatic ecosystems. This research would be particularly focused within the context of artificially impounded water bodies in urban environments. The features which express these significant natural heritage research values include the whole area of designated grassland on Yarramundi Reach, the upper slopes of the central and western parts of Stirling Park and the lake waters, including the small wetland pockets near and around Yarramundi Reach. **Indigenous history** Indigenous sites within the place have the potential to reveal evidence of traditional lifeways and the economy of Indigenous people in the Canberra region prior to European settlement. The features which express these significant Indigenous research values include the Indigenous sites (12) at Yarramundi Reach and Stirling Park.

CRITERIA	VALUES
CRITERION (d) The place has significant heritage value because of the place's importance in demonstrating the principal characteristics of: a class of Australia's natural or cultural places; or a class of Australia's natural or cultural environments.	The Lake Burley Griffin and Adjacent Lands place has important representative values. The aspects or characteristics of the place which have representative value are as follows. **City Beautiful Design exemplar** The design and final form of Lake Burley Griffin demonstrate key aspects of important design philosophies and styles from the early twentieth century, including the City Beautiful Movement and the Garden City Movement. The influence of International Modernism from the mid- twentieth century is also evident. Lake Burley Griffin is representative of a small group of designed urban environments in Australia containing areas of water used primarily for ornamental purposes and is one of the largest and best-known examples. **Natural areas** Some areas within the place possess remnant vegetation. Collectively these areas represent the characteristics of the pre-1820s natural environment. These areas include: - adjacent to Yarramundi Inlet there is a surviving individual Eucalyptus viminalis representing the original Molonglo River riparian forest. This tree is the sole indicator of the past riparian forest in the study area; - small remnants of the Natural Temperate Grassland community which exist in patches between Alexandria Drive and the lake foreshore from Blue Gum Point to Attunga Point. These areas represent remnant examples of the pre1820s vegetation; - a large grassy woodland area, now modified to grassland, located at Yarramundi Reach. This area displays the significant characteristics of the Natural Temperate Grassland community; - a large remnant of the original White Box-Yellow Box-Blakely's Red Gum Grassy Woodland on the slopes of Stirling Ridge in Stirling Park; - a remnant eucalypt dry open forest, characteristic of north and west facing slopes in the ACT, located on the eastern ridge of Stirling Park; and - a re-growth Snow Gum stand at the northern end of Yarramundi Reach. This stand is characteristic of the natural woodland/forest transition in the southern tablelands. The features which express these significant representative values include but are not limited to Lake Burley Griffin surrounds and the natural features described above.
CRITERION (e) The place has significant heritage value because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group	Lake Burley Griffin and Adjacent Lands place has important aesthetic characteristics valued by: **For Australians** Lake Burley Griffin is recognised as a beautiful feature of Canberra. In particular the Lake provides an attractive water setting for national institutions, lakeside parklands and lakeside memorials. Lake Burley Griffin is also featured in many promotions of Canberra to the extent that it has become a landmark and signature element of the city and its presentation as the capital of Australia. **For the Canberra Community** Lake Burley Griffin is appreciated by Canberrans as a beautiful part of their city. Its visual appeal during the day and night is appreciated as an essential part of their city and as a 'signature' element of Canberra as a place. Some particular characteristics appreciated by Canberrans include the presence of large areas of water, the reflections and seasonal variations on the water surface, the formal water basins near the national institutions and Parliament buildings and the more natural, quieter areas of the lake like Yarramundi Reach. Views to the water are also valued because of the 'calm presence' it provides in an individual's experience of the nearby city area. The features which express these aesthetic values include but are not limited to the large size and varied shape of the lake; the lake's quiet and peaceful areas (particularly the secluded areas in the lower reaches); the water body and surface of the lake (including the maintenance of its water level); and the reflective qualities of the water.

CRITERIA	VALUES
CRITERION (f) The place has significant heritage value because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period	The lake's design, development and final completion is considered by experts to be an achievement of creative genius and demonstrates a high level of technical engineering and urban design achievement. This high level of achievement is demonstrated by the following aspects or characteristics of the place. Lake Burley Griffin is an essential element of the Griffin plan for the capital city of Canberra. Its design has been purposefully developed to reflect Canberra's function and status as the nation's capital. The lake is used as a unifying design element and incorporates key aesthetic and functional roles within the overall plan for the city. The design of Lake Burley Griffin strongly reflects two key periods of creative and technical accomplishment. In the early period of the lake's development the lake's design is associated with the City Beautiful and Garden City town planning movements. Work undertaken from the 1950s is associated with International Modernism. The overall form of the lake is most strongly associated with its original conception set out in the city design competition brief. The lake's edge treatments and details, such as islands, are more reflective of later periods of construction. The lake's form also reflects the way the designers made use of the city site and the Molonglo River's features. West Lake, in particular, is evidence of the original 'river' form of the city site. The basins are evidence of the former river flood plain as well as evidence of the ancient Molonglo Lake. The final form of the lake closely resembles Griffin's 1918 plan with the exception of the deletion of East Lake. This similarity provides evidence of the essential integrity of the plan for the lake as conceptually developed by Griffin while he was in Canberra. The design of the lake includes formal and informal parts and reflects some of Griffin's geometric devices. The lake's integration of government and civic functions (on its opposite banks) has also been retained, although the intensity of the planned relationship has been weakened in implementation. The design of Lake Burley Griffin and Associated Lands provides evidence of tensions over time between Griffin's primarily City Beautiful plan and the interplay of Garden City ideas and the influence of Holford and the National Capital Development Commission. Lake Burley Griffin demonstrates a number of urban design approaches and styles. These occur within a designed and richly symbolic environment which is absent in many other more contemporary urban places. This richness demonstrates a sophisticated design approach to the urban design of the lake and its surroundings. Some key features of this include: the link between the axes and landscape features; the inclusion of formal and informal lake areas; the purposeful links with both close and distant topography; the relationship between vertical and horizontal elements (like the National Carillon and the Captain Cook Memorial Jet); the mirroring of foreshore and surrounding natural features, the lake's provision of water frontage for national institutions; the relationship between areas of distinctive character planting (around the lake) which makes use of seasonal colour and texture and the lake's contribution to the presentation of the city area as a city in a natural landscape. Lake Burley Griffin also demonstrates a high degree of technical achievement in engineering. The construction of the two bridges and Scrivener Dam were projects which demonstrated high levels of achievement in their time. The features which express these values include but are not limited to the lake as a whole, Scrivener Dam, Commonwealth and Kings Avenue bridges, the islands within the lake and the lake's function as part of the water axis.
CRITERION (g) The place has significant heritage value because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Lake Burley Griffin and Adjacent Lands place is important to various communities as a landmark and as a signature element of Canberra. It also acts as an important reference point in the construction of Canberra's place identity. The use of the lake has also created strong associations with recreation users like rowers, small watercraft users and walkers. Special associations with the Australian community are also present. For Australians Lake Burley Griffin plays an important role in representing the image of Canberra to the nation and potentially internationally. Its 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 central focus of the national capital designed landscape. The lake is also valued as a place which provides an attractive setting for visitors walking or driving through the city and around key national institutions.

CRITERIA	VALUES
CRITERION (g) The place has significant heritage value because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (continued)	For the Canberra Community Lake Burley Griffin is highly valued by the Canberra community as an important and essential part of Canberra. The lake contributes significantly to Canberra's place identity and provides a range of recreation opportunities for all Canberrans. The lake also connects Canberrans to Canberra's function and purpose as the nation's capital as the lake is a central design element in the construction of the national capital. Canberrans are proud of the lake as a significant construction achievement. The unification of two parts of the city at completion of the lake is remembered. Lake Burley Griffin is highly valued by the Canberra community as an important community gathering place which is also used as a setting for large public events. The lake remains a place which has been experienced and enjoyed by Canberrans for over 35 years for leisure and as a visual delight. Lake Burley Griffin is highly valued by the Canberra community as a place that represents the realisation of the Griffin design for Canberra. The lake also creates a setting for community celebration and engagement. Lake Burley Griffin is also highly valued by the Canberra community as a place of personal memory and experience. The Canberra community has a strong attachment to the lake as a whole, as well as to a range of individual places on and around the lake. These values are shared across the community, irrespective of the nature, length and frequency of association. The features which express these social values include but are not limited to, the whole of Lake Burley Griffin.
CRITERION (h) The place has significant heritage value because of 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 Adjacent Lands place has significant associations with people of importance in Canberra's history of development. These associations include the following. Important people involved with the creative and technical aspects of the design and construction of Lake Burley Griffin include Walter Burley Griffin, Marion Mahony Griffin, Charles Scrivener, Sir William Holford, Dame Sylvia Crowe, Richard Clough and the National Capital Development Commission (NCDC). Lake Burley Griffin also has strong associations with Sir Robert Menzies who played pivotal role in the implementation of the lake's construction. His support is associated with the final push towards the lake's completion. Walter Burley Griffin is an important figure in Australia's cultural history because of his contribution to the design of Canberra as Australia's capital city. In recognition of his contribution Lake Burley Griffin has been named in appreciation of his work. Marion Mahony Griffin worked with Walter Burley Griffin on the design for Canberra. Her perspective drawings were a brilliant representation of the ideas presented in the competition drawings for Canberra. In recognition of her contribution the Marion Mahony Griffin view at Mt Ainslie has been named in appreciation of her work. Charles Scrivener surveyed and recommended the Canberra site for Australia's capital city. He also made recommendations regarding the suitability of this site for ornamental waters which pointed to the eventual creation of Lake Burley Griffin. British planner, William Holford, was engaged by the Menzies Government to recommend a way forward for the construction of Lake Burley Griffin. Holford did extensive work on the design of Lake Burley Griffin and its two bridges. Sylvia Crowe and Richard Clough were prominent landscape architects involved with the landscape development and planting works around the lake, and, in particular, of Commonwealth Park. The experimental planting plots within the Lindsay Pryor Arboretum are strongly associated with the pioneering and extensive work planned and carried out by Lindsay Pryor and his team in the landscaping of the city scape of Canberra. Many professions have been involved in planning, design and construction of Lake Burley Griffin including town planners, architects, landscape architects, engineers and surveyors. In the case of landscape architects and town planners in Australia, the growth of these professions in Australia has a strong association with Lake Burley Griffin and some of the adjacent lands within the place. The features which express these values include but are not limited to: the lake as a whole, including all its designed and engineered elements; the Roman Cypress Hill stand of Cupressus sempervirens and Pryor's surviving trial plantings covering the southern portions of Yarramundi Reach.

2.3.2 Parliament House Vista, Anzac Pde, Parkes, ACT, Australia

The Parliament House Vista has been included on the Commonwealth Heritage List since 22/06/2004.

Place ID: 105466

Place File No: 8/01/000/0075.

Location: About 260ha, comprising the whole of the area bounded by the northern alignment of State Circle, the western alignment of Kings Avenue, the southern alignment of Parkes Way and the eastern alignment of Commonwealth Avenue, excluding the Archbishops Residence and grounds being Block 1 Section 2 Parkes; the whole of Anzac Parade and Anzac Park and the whole of Section 39, Campbell.

There are many places of heritage significance in close proximity to the Commonwealth Avenue Bridge Renewal site, as shown in the diagram to the right.w

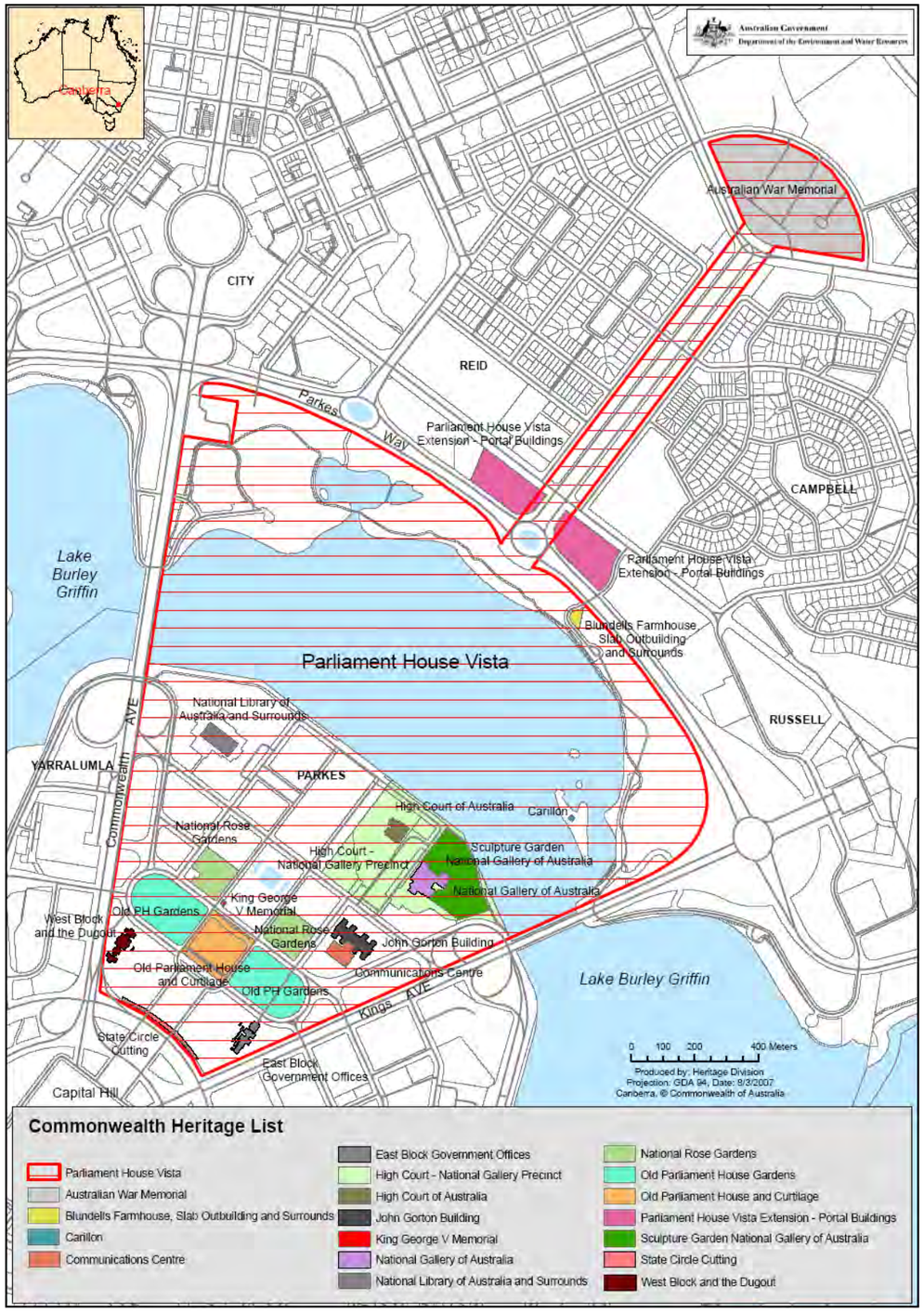


Figure 208: The Parliament House Vista Commonwealth Heritage boundary outlined and hatched in red, showing places of heritage significance within the vista.
Source: Department of the Environment and Water Resources, 2008.

CRITERIA	VALUES
CRITERION (a): Processes	The central national area of Canberra is strongly associated with the history of politics and government in Australia and the development of Canberra as the Australian National Capital. It is significant as the home of the Commonwealth Parliament, the focus of the Federal Government since 1927, initially in the Old Parliament House and from 1988 in the new Parliament House. The various government buildings in the area reinforce the association with Australian government and political history, including East and West Blocks, the Administrative Building, the Treasury Building and the High Court. The latter, being set apart from Parliament House but facing it is symbolic of the judicial role of the High Court as a physical representation of the separation of powers. The central national area has strong links with the planning and development of Canberra as the Australian Capital. The relocation of Parliament to Canberra and the central national area in 1927 was the focus of an intense period of development of the new city and gave purpose to Canberra as the Nation's Capital. Over time this association has been reinforced by the construction of major government buildings in the area, such as the Treasury Building, the Administration Building (now John Gorton Building), the Portal Buildings and latterly the new Parliament House, as well as the construction of major cultural institutions. The area as intended has become the focus of Commonwealth parliamentary and governmental activity as well as, to some extent, national cultural life. The area has been associated since 1941 with the development of Australian cultural life and national identity through the presence of such institutions as the Australian War Memorial, the National Gallery of Australia, the National Science and Technology Centre and the National Library of Australia. The national cultural institutions reinforce the national character of the area and are an important symbolic group in Australia's national cultural life. The Australian War Memorial and Anzac Parade memorials and, to a lesser extent, the other memorials have and continue to play a very important role in fostering aspects of national identity, in particular the Australian War Memorial through its role as a National Shrine for all Australians. The vista landscape is significant for its richness of features. Many places in the Vista area have individual heritage significance for their architectural design and historic importance. These include Old Parliament House and Curtilage, East Block Government Offices, West Block and the Dugout, John Gorton Building, the National Library of Australia, the High Court of Australia, the National Gallery of Australia, Blundells Farmhouse, Slab Outbuildings and Surrounds, the Australian War Memorial, the Portal Buildings, The High Court - National Gallery Precinct, the Carillon, and King George V Memorial. Within the area are important parklands and gardens enhancing the significance of the landscape setting. These include the Gardens of Old Parliament House (the former Senate and House of Representative Gardens) with their surviving layout, the Sculpture Garden of the National Gallery, the National Rose Gardens, Commonwealth Park, the Peace Park, the Lakeshore Promenade and Kings Park . Adding to the richness of the place is the manner in which Griffin's vision of democracy has also been emphasised, as places within the area have become identified with political protest actions by people, as exemplified in the significant Aboriginal Embassy site. **Attributes** The concentration of buildings, parklands and gardens that support Commonwealth parliamentary and governmental activity as well as, to some extent, national cultural life. These include Old Parliament House and Curtilage, East Block Government Offices, West Block and the Dugout, John Gorton Building, the National Library of Australia, the High Court of Australia, the National Gallery of Australia, Blundells Farmhouse, Slab Outbuildings and Surrounds, the Australian War Memorial, the Portal Buildings, The High Court - National Gallery Precinct, the Carillon, King George V Memorial, Sculpture Garden of the National Gallery, the National Rose Gardens, Commonwealth Park, the Peace Park, the Lakeshore Promenade and Kings Park and the Aboriginal Embassy site.
CRITERION (e): Aesthetic characteristics	The place has high aesthetic significance due to the visual impact of the extensive open sweeping vista along the land axis that can be experienced in two directions, the designed axes set within natural features of forested hills, patterns and textures of architectural massing accentuated by planned open spaces, water planes and tree plantings that are arranged across the area. The vista is significant for its visual drama with its ability to engage viewers in the visual perspective of the sweeping vista to the terminal features. The aesthetic significance is also a result of the large scale qualities of the axes, including the open green spaces, combined with patterns and symmetrical characteristics of the road networks and numerous designed smaller attributes. These include the rose gardens, the Old Parliament House Gardens, Commonwealth Park, the street tree plantings, the lake-land interface and the Sculpture Garden of the National Gallery, and many intimate spaces rich in texture, colour, fragrance and in some cases, art works and water features. **Attributes** The extensive vista along the land axis, the forested hills, patterns and textures of architectural massing accentuated by planned open spaces, water features and tree plantings, art works, the terminal features plus the interplay of scale and texture in the designed landscape.

CRITERIA	VALUES
CRITERION (f): Technical achievement	The Parliament House Vista is the central designed landscape of Canberra, that expresses the core of the Walter Burley Griffin design vision for Canberra. It is highly significant for its symbolic representation of the democratic interchange between the people and their elected representatives and its use of the natural landforms to generate a strong planning geometry. It expresses a masterly synthesis and ordering of topographical features and administrative functions to meet the needs of a national capital. The vista landscape embraces the central land axis and part of the water axis and most of the Parliamentary Triangle including the area known as the Parliamentary Zone. The significance incorporates Walter Burley Griffin's vision for the area, as the focus of Commonwealth parliamentary and governmental activity as well as national cultural life. This vision has been partly realised and the place is the setting for major, government, judicial and cultural institutions. The northern extent of the vista of Anzac Parade and the Australian War Memorial, despite differing from the original plan, are significant for memorial purposes developed in response to the needs of the people. Despite being modified to a lesser degree to accommodate the impact of wars on Australians, the Vista now presents as a philosophical concept expressed in urban planning, landscape and architecture, to achieve a grand vision of a symbolic, unified and visually dramatic place. The Parliament House Vista incorporating the central national area, is the core of the most ambitious and most successful example of twentieth century urban planning in Australia. It is important for its design pattern with large landscape and waterscape spaces with their enframement by treed avenues and at the lake by bridges, the terminal vista features of the Australian War Memorial and Mount Ainslie at the northern end and Parliament House at the southern end, with the Carillon and Captain Cook Jet creating balanced vertical features in the water plane. The spatial setting of the buildings as features in the landscape reflects Beaux Arts planning concepts and the building masses and their careful location complement the significance of the overall landscape pattern. Across the Parliamentary Triangle, the buildings of Old Parliament House, and East and West Blocks provide a distinctive Stripped Classical architectural patterned horizontal band, that contributes to the symmetrical overall patterning of the landscape. At a higher elevation, Parliament House is a significant feature terminating the southern end of the land axis, culminating the classical landmark image of the triangle apex. The John Gorton Building (the former Administrative Building) and the Treasury Building balance the composition on King George Terrace while at the Lake edge the post-war architecture of the National Library of Australia and the High Court - National Gallery Precinct are prominent modern architectural forms and have a significant historical layering effect. The Portal Buildings provide balanced building massing at the southern end of Anzac Parade. Avenues of trees along the terraces, roads and pathways of deciduous, pine, and eucalypt species provide colour, character, and contrast, emphasisng the significance of the formal symmetrical design. Lombardy Poplars in groups of four, form sentinels at key locations. Water fountains, and statues also reinforce the significance of the total design pattern of the place. On the northern expanse of the vista the landscape pattern is the wide sweeping avenue space emphasised by red scoria gravel in the central strip and edged by large Blue Gums. Many places in the Vista area have individual heritage significance for their architectural design and historic importance. These include Old Parliament House and Curtilage, East Block Government Offices, West Block and the Dugout, John Gorton Building, the National Library of Australia, the High Court of Australia, the National Gallery of Australia, Blundells Farmhouse, Slab Outbuildings and Surrounds, the Australian War Memorial, the Portal Buildings, The High Court - National Gallery Precinct, the Carillon, and King George V Memorial. Within the area are important parklands and gardens enhancing the significance of the landscape setting that include the Sculpture Garden of the National Gallery, a significant native style garden, and the National Rose Gardens. Commonwealth Park, the Peace Park, the Lakeshore Promenade and Kings Park are important landscapes for their design and popular use. Adding to the richness of the place is the manner in which Griffin's vision of democracy has also been emphasised, as places within the area have become identified with political protest actions by people, as exemplified in the significant Aboriginal Embassy site. **Attributes** The whole of the vista, including all elements and features contained within it, as well as the natural wooded hills beyond.

CRITERIA	VALUES
CRITERION (g): Social value	The area has strong and special associations with the broad Australian community because of its social values as a symbol of Australia and Federal Government. The values have developed over many years since Canberra's creation and the relocation of the Parliament in 1927 gave them a special focus. The special association is reflected in the use of the area as the location for national memorials, the number of tourists who have and continue to visit the area, the media portrayal of Canberra and federal politics and the continuing use of the area as the venue for occasional ceremonies and political protests by sections of the community. Memorial features include sculptures, plaques, commemorative trees, water features and gardens. The collection of sculptures, associated art and design which comprise the Anzac Parade Memorials, give expression to key aspects of the history of Australia's armed forces and Australia's war involvement, and possess high social value. The special association for the community is also the use of the area by people demonstrating against government decisions. The central national area, particularly Parkes Place in front of Old Parliament House, has been used for countless demonstrations. The landscape spaces are important for social activities of visitors and Canberra residents and these include Canberra festivals, water events, national events and parades such as Anzac Day Parade and the Dawn Service, and other commemorative services. **Attributes** Memorial features including sculptures, plaques, commemorative trees, water features and gardens. Also, recreational landscape spaces and gathering spaces in which the community may demonstrate.
CRITERION (h): Significant people	The central national area has a special association with its designer, Walter Burley Griffin. Griffin is an important figure in Australia's cultural history for his overall design of Canberra as the Nation's Capital. The special association between the central national area and Griffin results from the area being the centrepiece of the planning geometry for Canberra and perhaps the only part of his Canberra plan to survive relatively intact. The area has a strong association with Marion Mahoney Griffin who prepared the perspective drawings of the Vista. The Vista area has a strong association with numerous architects and planners, in particular John Smith Murdoch, Chief architect of the Commonwealth Government, and Thomas Charles Weston, Superintendent of Parks, Gardens and Afforestation in Canberra, and notable planners of the National Capital Development Commission such as Sir John Overall, Peter Harrison and Paul Reid. **Attributes** The whole of the vista, its planned layout, and the view from the top of Mount Ainslie which illustrates the realisation of Marion Mahoney Griffin's perspective drawing.

CRITERIA	VALUES
CRITERION (h) The place has significant heritage value because of 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 Adjacent Lands place has significant associations with people of importance in Canberra's history of development. These associations include the following. Important people involved with the creative and technical aspects of the design and construction of Lake Burley Griffin include Walter Burley Griffin, Marion Mahony Griffin, Charles Scrivener, Sir William Holford, Dame Sylvia Crowe, Richard Clough and the National Capital Development Commission (NCDC). Lake Burley Griffin also has strong associations with Sir Robert Menzies who played pivotal role in the implementation of the lake's construction. His support is associated with the final push towards the lake's completion. Walter Burley Griffin is an important figure in Australia's cultural history because of his contribution to the design of Canberra as Australia's capital city. In recognition of his contribution Lake Burley Griffin has been named in appreciation of his work. Marion Mahony Griffin worked with Walter Burley Griffin on the design for Canberra. Her perspective drawings were a brilliant representation of the ideas presented in the competition drawings for Canberra. In recognition of her contribution the Marion Mahony Griffin view at Mt Ainslie has been named in appreciation of her work. Charles Scrivener surveyed and recommended the Canberra site for Australia's capital city. He also made recommendations regarding the suitability of this site for ornamental waters which pointed to the eventual creation of Lake Burley Griffin. British planner, William Holford, was engaged by the Menzies Government to recommend a way forward for the construction of Lake Burley Griffin. Holford did extensive work on the design of Lake Burley Griffin and its two bridges. Sylvia Crowe and Richard Clough were prominent landscape architects involved with the landscape development and planting works around the lake, and, in particular, of Commonwealth Park. The experimental planting plots within the Lindsay Pryor Arboretum are strongly associated with the pioneering and extensive work planned and carried out by Lindsay Pryor and his team in the landscaping of the city scape of Canberra. Many professions have been involved in planning, design and construction of Lake Burley Griffin including town planners, architects, landscape architects, engineers and surveyors. In the case of landscape architects and town planners in Australia, the growth of these professions in Australia has a strong association with Lake Burley Griffin and some of the adjacent lands within the place. The features which express these values include but are not limited to: the lake as a whole, including all its designed and engineered elements; the Roman Cypress Hill stand of Cupressus sempervirens and Pryor's surviving trial plantings covering the southern portions of Yarramundi Reach.
Condition and Integrity	The central National area is an extensive cultural landscape with a variety of landscape and building features. Individual elements vary in their condition and integrity. At a general level, the area is in fair to good condition. The values relating to the cultural landscape design and special association with Griffin are degraded by the changes made over time to Griffin's plan. The location of Old Parliament House, removal of Camp Hill, location of the new Parliament House and parts of the road layout as constructed are all variations from Griffin's plan. Given these changes, the area displays only a poor to medium level of integrity with regard to these values. In 1994 the National Capital Planning Authority released details of the Central National Area Design Study. This includes proposals for significant changes to the area.

Summary Statement of Significance

Design Importance

The Parliament House Vista is the central designed landscape of Canberra, that expresses the core of the Walter Burley Griffin design vision for Canberra. It is highly significant for its symbolic representation of the democratic interchange between the people and their elected representatives and its use of the natural landforms to generate a strong planning geometry. It expresses a masterly synthesis and ordering of topographical features and administrative functions to meet the needs of a national capital. The vista landscape embraces the central land axis and part of the water axis and most of the Parliamentary Triangle including the area known as the Parliamentary Zone. The significance incorporates Walter Burley Griffin's vision for the area, as the focus of Commonwealth parliamentary and governmental activity as well as national cultural life. This vision has been partly realised and the place is the setting for major, government, judicial and cultural institutions. The northern extent of the vista of Anzac Parade and the Australian War Memorial, despite differing from the original plan, are significant for memorial purposes developed in response to the needs of the people. Despite being modified to a lesser degree to accommodate the impact of wars on Australians, the Vista now presents as a philosophical concept expressed in urban planning, landscape and architecture, to achieve a grand vision of a symbolic, unified and visually dramatic place (Criterion F.1)

(Australian Historic Themes 7.4 Federating Australia, 8.10 , Pursuing excellence in the arts and sciences)

The Parliament House Vista incorporating the central national area, is the core of the most ambitious and most successful example of twentieth century urban planning in Australia. It is important for its design pattern with large landscape and waterscape spaces with their enframement by treed avenues and at the lake by bridges, the terminal vista features of the Australian War Memorial and Mount Ainslie at the northern end and Parliament House at the southern end, with the Carillon and Captain Cook Jet creating balanced vertical features in the water plane (Criterion F.1).

The spatial setting of the buildings as features in the landscape reflects Beaux Arts planning concepts and the building masses and their careful location complement the significance of the overall landscape pattern. Across the Parliamentary Triangle, the buildings of Old Parliament House, and East and West Blocks provide a distinctive Stripped Classical architectural patterned horizontal band, that contributes to the symmetrical overall patterning of the landscape. At a higher elevation, Parliament House is a significant feature terminating the southern end of the land axis, culminating the classical landmark image of the triangle apex. The John Gorton Building (the former Administrative Building) and the Treasury Building balance the composition on King George Terrace while at the Lake edge the post-war architecture of the National Library of Australia and the High Court - National Gallery Precinct are prominent modern architectural forms and have a significant historical layering effect. The Portal Buildings provide balanced building massing at the southern end of Anzac Parade (Criterion F.1).

Avenues of trees along the terraces, roads and pathways of deciduous, pine, and eucalypt species provide colour, character, and contrast, emphasisng the significance of the formal symmetrical design. Lombardy Poplars in groups of four, form sentinels at key locations. Water fountains, and statues also reinforce the significance of the total design pattern of the place. On the northern expanse of the vista the landscape pattern is the wide sweeping avenue space emphasised by red scoria gravel in the central strip and edged by large Blue Gums (Criterion F.1).

The vista landscape is significant for its richness of features. Many places in the Vista area have individual heritage significance for their architectural design and historic importance. These include Old Parliament House and Curtilage, East Block Government Offices, West Block and the Dugout, John Gorton Building, the National Library of Australia, the High Court of Australia, the National Gallery of Australia, Blundells Farmhouse, Slab Outbuildings and Surrounds, the Australian War Memorial, the Portal Buildings, The High Court - National Gallery Precinct, the Carillon, and King George V Memorial (Criteria F.1 and A3).

Within the area are important parklands and gardens enhancing the significance of the landscape setting. These include the Gardens of Old Parliament House (the former Senate and House of Representative Gardens), important for expressing their history in plantings, sports facilities, modest features and layout pattern. Also important is the Sculpture Garden of the National Gallery, a significant native style garden, and the National Rose Gardens. Commonwealth Park, the Peace Park, the Lakeshore Promenade and Kings Park are important landscapes for their design and popular use (Criteria F.1 and A3.)

Adding to the richness of the place is the manner in which Griffin's vision of democracy has also been emphasised, as places within the area have become identified with political protest actions by people, as exemplified in the significant Aboriginal Embassy site (Criteria F.1 and A3).

Historic Importance

The central national area of Canberra is strongly associated with the history of politics and government in Australia and the development of Canberra as the Australian National Capital. It is significant as the home of the Commonwealth Parliament, the focus of the Federal Government since 1927, initially in the Old Parliament House and from 1988 in the new Parliament House. The various government buildings in the area reinforce the association with Australian government and political history, including East and West Blocks, the Administrative Building, the Treasury Building and the High Court. The latter, being set apart from Parliament House but facing it is symbolic of the judicial role of the High Court as a physical representation of the separation of powers (Criterion A.4, Australian Historic Themes: 7.2 Developing institutions of self-government and democracy).

The central national area has strong links with the planning and development of Canberra as the Australian Capital. The relocation of Parliament to Canberra and the central national area in 1927 was the focus of an intense period of development of the new city and gave purpose to Canberra as the Nation's Capital. Over time this association has been reinforced by the construction of major government buildings in the area, such as the Treasury Building, the Administration Building (now John Gorton Building), the Portal Buildings and latterly the new Parliament House, as well as the construction of major cultural institutions. The area as intended has become the focus of Commonwealth parliamentary and governmental activity as well as, to some extent, national cultural life. (Criterion A.4) (Australian Historic Themes: 4.1 Planning urban settlement, 7.2 Developing institutions of self-government and democracy, 7.3 Federating Australia).

The area has been associated since 1941 with the development of Australian cultural life and national identity through the presence of such institutions as the Australian War Memorial, the National Gallery of Australia, the National Science and Technology Centre and the National Library of Australia. The national cultural institutions reinforce the national character of the area and are an important symbolic group in Australia's national cultural life. The Australian War Memorial and Anzac Parade memorials and, to a lesser extent, the other memorials have and continue to play a very important role in fostering aspects of national identity, in particular the Australian War Memorial through its role as a National Shrine for all Australians (Criterion A.4, Australian Historic Themes 8.8 Remembering the Fallen).

Social Importance

The area has strong and special associations with the broad Australian community because of its social values as a symbol of Australia and Federal Government. The values have developed over many years since Canberra's creation and the relocation of the Parliament in 1927 gave them a special focus. The special association is reflected in the use of the area as the location for national memorials, the number of tourists who have and continue to visit the area, the media portrayal of Canberra and federal politics and the continuing use of the area as the venue for occasional ceremonies and political protests by sections of the community. Memorial features include sculptures, plaques, commemorative trees, water features and gardens. The collection of sculptures, associated art and design which comprise the Anzac Parade Memorials, give expression to key aspects of the history of Australia's armed forces and Australia's war involvement, and possess high social value (Criterion G.1, Australian Historic Themes 8.8 Remembering the fallen, 8.9 Commemorating significant events and people).

The special association for the community is also the use of the area by people demonstrating against government decisions. The central national area, particularly Parkes Place in front of Old Parliament House, has been used for countless demonstrations (Criterion G.1).

The landscape spaces are important for social activities of visitors and Canberra residents and these include Canberra festivals, water events, national events and parades such as Anzac Day Parade and the Dawn Service, and other commemorative services (Criterion G.1).

Aesthetic Value

The place has high aesthetic significance due to the visual impact of the extensive open sweeping vista along the land axis that can be experienced in two directions, the designed axes set within natural features of forested hills, patterns and textures of architectural massing accentuated by planned open spaces, water planes and tree plantings that are arranged across the area. The vista is significant for its visual drama with its ability to engage viewers in the visual perspective of the sweeping vista to the terminal features. The aesthetic significance is also a result of the large scale qualities of the axes, including the open green spaces, combined with patterns and symmetrical characteristics of the road networks and numerous designed smaller attributes. These include the rose gardens, the Old Parliament House Gardens, Commonwealth Park, the street tree plantings, the lake-land interface and the Sculpture Garden of the National Gallery, and many intimate spaces rich in texture, colour, fragrance and in some cases, art works and water features (Criterion E1).

Associational Value

The central national area has a special association with its designer, Walter Burley Griffin. Griffin is an important figure in Australia's cultural history for his overall design of Canberra as the Nation's Capital. The special association between the central national area and Griffin results from the area being the centrepiece of the planning geometry for Canberra and perhaps the only part of his Canberra plan to survive relatively intact. The area has a strong association with Marion Mahoney Griffin who prepared the perspective drawings of the Vista. The Vista area has a strong association with numerous architects and planners, in particular John Smith Murdoch, Chief architect of the Commonwealth Government, and Thomas Charles Weston, Superintendent of Parks, Gardens and Afforestation in Canberra, and notable planners of the National Capital Development Commission such as Sir John Overall, Peter Harrison and Paul Reid (Criterion H.1).

Figure 209: 1912. Commonwealth of Australia Federal Capital Competition : perspective view of Canberra [picture]
Source: National Library of Australia, https://nla.gov.au:443/tarkine/nla.obj-150297001

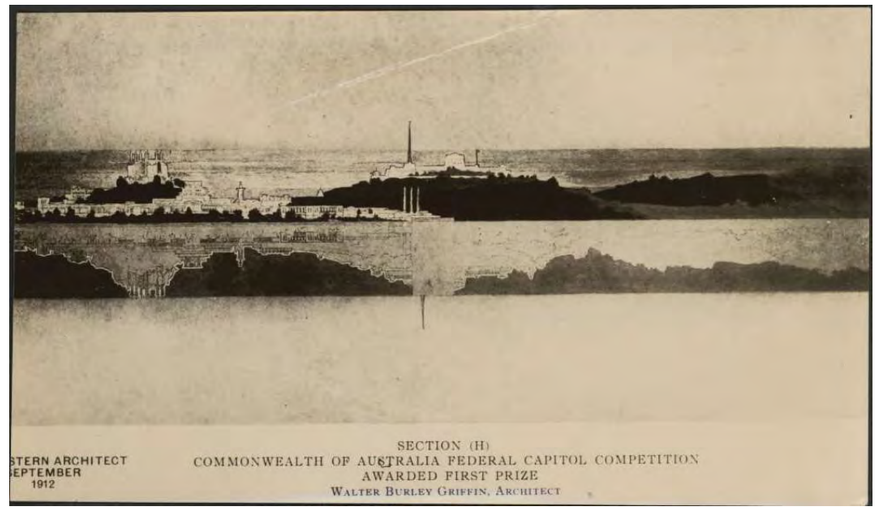


Figure 210: 1912. [Walter Burley Griffin's winning competition submission in Commonwealth of Australia Federal Capitol Competition: Section (H)] [picture].
Source: National Library of Australia, https://nla.gov.au:443/tarkine/nla.obj-150144991

History

The heritage listing for the Parliament House Vista contains the following historical summary:

> The Australian Constitution left the location of the Capital to be decided by the new Federal Parliament. It declared that Melbourne would be the temporary home for the Federal Parliament and public servants until a new city was built at least 100 miles from Sydney. An agreed territory of 903 square miles included the water catchment of the Cotter River and the river valley of the Molonglo for the setting for the city. The Department of Home Affairs commenced works for services and city planning. In 1910 the Secretary of the Federal Department of Home Affairs, David Miller requested permission of Minister O'Malley to conduct a design competition to elicit ideas for the city.
>
> At the time the Federal Capital area was proclaimed, the river flats of the Molonglo, Mount Ainslie, Camp Hill and Kurrajong Hill had been extensively denuded of vegetation from a long period of clearing and grazing. Some exotic trees were established in parts of the area, around structures such as Blundell's cottage and St Johns Church and graveyard.

The Canberra Plan

> Walter Burley Griffin won the competition for the design of Canberra in 1912. The plan was expressed in beautifully rendered illustrations prepared by Griffin's wife Marion Mahoney Griffin as plans, elevations and sections painted on silk.
>
> The order of the city was for a great triangle aligned with the mountains which rose above the site. The triangle was to be defined by tree-lined avenues and spanned the central basin of an impounded lake. The triangle would consist of a series of terraces arranged in the functions of government and representing democracy. It was a synthesis of function and design where the Order of the Site (the natural environment) and the Order of Functions (the needs of the people) are perfectly integrated by specific geometry (Reid 2002). The Capitol was a main feature of the design
>
> In terms of vistas, the Griffin vision was represented in two renderings drawn by Marion Mahony Griffin. In the rendering looking from Mt Ainslie towards the Capitol, the drama of the vista focuses on the Capitol, the building representing the aspirational forces in Australian national life, with the final termination in the mountains beyond. Below the Capitol, the Parliament House and the Government departments are terraced down to the Lake providing a symbol of a transparent democracy in action. The observer is standing at Mt Ainslie, a point representative of the power and influence of nature and the highest point of the vista. Griffin's plan for the ideal city, the philosophical triumvirate of humanity, democracy and nature is iconographed along the land axis which together with the water axis is the ordering geometry of the vista and the city. Griffin envisaged a dense city with a coming together of the population in a Casino (something akin to the recreational city gardens in pre war Berlin, Copenhagen, and Stockholm) and Plaisance descending from the foot of Mt Ainslie. Intersected by a busy commercial street, Constitution Avenue, the Plaisance unfolded to the area designated for cultural activity from which the people could look across the lake (or water axis) to the area of national government that was climaxed by the building symbolic of national achievement and aspiration, the Capitol.
>
> Griffin's 1913 land use plan for the central National area indicates his intentions. Moving from north to south along the land axis, he proposed a park at the northern end of the land axis, public gardens on the north side of the lake, the lake itself (now Lake Burley Griffin), government buildings flanking a central terrace court to the south of the lake, Parliament House on Camp Hill, the Capitol building on Capital Hill flanked by the Governor General's residence to the west and the Prime Minister's residence to the east. The Capitol building was not intended to be the Parliament but rather to be for popular reception and ceremonial activities or for archives or otherwise to commemorate Australian achievements. Griffin's philosophical vision expressed in a remarkable urban planning form has been affected by the realities of Australian political and cultural life as well as by the circumstances and juxtapositions of historic events. Australian planners following Griffin have rearranged the icons to reflect the dominant realities and meanings of Australian life.
>
> Griffin's various plans for the central National area of Canberra all included a basic planning framework, which has been constructed and survives to the present. This framework includes the land axis, joining Capital Hill and Mount Ainslie, the water axis, the radiating avenues from Capital Hill, Commonwealth and Kings Avenues, the arc of Parkes Way, the northern punctuation of the land axis by the Australian War Memorial, the roads encircling Capital Hill, State and Capital Circles and the southern punctuation of the land axis by the Parliament House of 1988. In addition to the alignment of axes and avenues which defined Griffin's city plan the triangle was a basic element on which the whole city was built. In his design Griffin had created three urban centres connected by main avenues. Capital Hill as the government centre, Mt Vernon as the municipal centre and Mt Pleasant as the market centre were integral to the plan. The northern avenue, Constitution Avenue, was the municipal axis.
>
> Griffin prepared a preliminary plan in 1913 and a revised plan in 1918 following which the Official Plan was gazetted in 1925. Griffin left in 1920 leaving development under the control of the Federal Capital Advisory Committee (FCAC) chaired by the planner, John Sulman. The Committee had been appointed to complete sufficient permanent buildings to enable Parliament to move from Melbourne to Canberra.

Development

> Tree planting began in the early years of Canberra's development, and by 1921 some 17,000 trees were planted (Hendry). Within the Vista area tree planting commenced around 1923 in Prospect Parkway, now known as Anzac Parade. Early images show tree planting in a scalloped arrangement along the length of the avenue
>
> For 3 years from 1925, trees were planted in association with the construction of the Provisional Parliament House. The formal structural planting around the House including Cedars, Cypresses and Lombardy Poplars was completed for the opening (Hendry). The planting proposals were finalised by Charles Weston, Superintendent of Parks, Gardens and Afforestation, and from 1926, carried out by his successor Alexander Bruce. The planting design aimed to create through the use of a balanced mix of evergreen and deciduous trees, formally shaped grassed vistas and 'outdoor rooms' in scale with the Provisional Parliament House. The formally arranged groups of Lombardy Poplars to achieve 'sentinel' features at the entrances and the pedestrian reference points in the landscape, is attributed to the involvement of John Smith Murdoch, Chief Architect for the Commonwealth Government, in the design. Cedars were used at right angles to the Land Axis. Most of the trees planted in Parkes Place were exotics with the only eucalypts planted adjacent to the Senate and House of Representatives Gardens (Gray 1995).
>
> The first major structure to be placed within the area was the Old Parliament House, then called the Provisional Parliament House. In 1923 the Commonwealth Parliament agreed to the proposed building which was sited in front of Camp Hill, Griffin's intended location of the permanent Parliament House. At the time, Griffin protested recognising that if built, the provisional building would remove any possibility of a permanent Parliament House being built on Camp Hill. Nonetheless the Commonwealth proceeded. In 1925 the Federal Capital Commission (FCC) was established under Sir John Butters. The Commission replaced the FCAC. The FCC was responsible for moving the public service to Canberra and otherwise establishing the city in time for the opening of Parliament House.
>
> A number of other significant projects were undertaken at the same time as the construction of (Old) Parliament House, which was designed by John Smith Murdoch and completed in 1927. Either side of the Parliament House, private gardens were established for the use of Members of Parliament. On either side of Camp Hill, two government office buildings were constructed, known as East and West Blocks and these were also completed in 1927. East and West Blocks were also designed by Murdoch in a similar style to Old Parliament House.
>
> In 1926 a delegation of the Empire Parliamentary Association visited the new Parliament House and planted an avenue of 12 commemorative trees, to mark the event of the first use of the House of Representatives. Ten Roman Cypresses (CUPRESSUS SEMPERVIRENS 'STRICTA') were planted at right angles to the House with each tree planted by a

delegate and marked by a brass plaque. To commemorate the opening of Parliament House in 1927, the Duke of York planted a Bunya Pine (ARUACARIA BIDWILLI) near Kings Avenue. The Marquis of Salisbury and Mr Arthur Henderson planted the Lombardy poplars in the courtyards of the Provisional Parliament House (Pryor and Banks 1991, Gray 1995).

In 1927 the Canberra National Memorials Committee named the area in front of Parliament House - Parkes Place, to commemorate Sir Henry Parkes. King Edward, King George and Queen Victoria Terraces, and Langton and Walpole Crescents were named for links to the first 50 years of Federation (Gray 1995).

The Gardens designed and constructed as part of the Old Parliament House Complex was conceived by the Federal Capital Advisory Committee in the early1920s and constructed by the Federal Capital Commission from the mid 1920s in time for the opening of Parliament in May 1927. Formal enclosed gardens were the style of the time and James Orwin of the Sydney office of the Director of Works for NSW prepared sketch plans that were finalised by Murdoch. Most of the trees for the Parliamentary gardens were planted by late 1925. Around the same time road patterns for the Parliamentary area following Griffin's concepts were prepared.

Formal rose gardens in front of the House were first proposed by Weston in 1924. The idea was finally realised when the National Rose Gardens were established in 1933 by the Canberra Horticultural Society in association with the Department of the Interior. The design was developed by A. Bruce based on the plan of petals of an open bloom with colours arranged from deep red in the central area progressing through yellow, white pink and coppery shades. Rose gardens were also commenced around the same time in the Senate and House of Representatives Gardens. By 1938, these gardens were established with formal garden beds and recreation courts, and surrounded by young cypresses which were later clipped into hedges (Patrick and Wallace).

Following the opening of the Provisional Parliament House by the Duke of York on 9 May 1927, the area in front of the House was used for official ceremonies for Anzac and Remembrance Days with a temporary cenotaph, until the opening of the Australian War Memorial in 1941. Initially this area had simple landscaping treatment of lawns. Rose gardens were added in the 1950s, and the car parking area in the forecourt added in the 1960s.

Weston and Murdoch were both given British Empire Awards in 1927 for their contribution to the nation.

In 1946 a major tree thinning of the Parliamentary Zone was initiated by Lindsay Pryor, Superintendent, Parks and Gardens. All the golden cypresses, white poplars, pin oaks and Lawson's cypress on King George Terrace were removed (Gray 1995).

In order to accommodate other government departments, a competition was held in 1924 for the design of the Administrative building, flanking the land axis in Parkes, which was to house about eight departments. The building was to be the first in the Parliamentary Triangle and its design was considered important because it would influence future buildings in the central National area. In 1924, G Sydney Jones won the competition. Work started in 1927 and the foundations were completed in 1928. However, work was stopped at this point because of the Depression. There were then many delays. The design of the proposed building was modified in 1946, construction started again in 1947 and the new design required the demolition of the original foundations. The building was substantially completed in 1956. The building is claimed to have been the largest Australian office building when completed. It was renamed as the John Gorton Building in 1999.

The major development at the northern end of the land axis was the construction of the Australian War Memorial. The site was agreed in 1923 and in 1928 Griffin expressed the view that the proposed site was suitable for the memorial. Construction began in 1928 but was not completed until 1941.

Although a memorial to King George V was proposed in 1936 it was not until 1941 that the architectural part was constructed but the bronze figure was not developed until after World War II. It was unveiled in 1953 but attracted criticism for blocking the vista to the Australian War Memorial. In 1968 King George Terrace was realigned and the memorial was moved to its current location west of the land axis, on a corner of the western part of the National Rose Garden.

In 1955 a Select Senate Committee of Inquiry urged tree planting and landscape works to be undertaken in Canberra under the direction of the National Capital Development Commission. The Commission sought guidance from landscape designers including Lord William Holford and Dame Sylvia Crowe. Holford recommended that a predominantly Australian character be retained around Lake Burley Griffin with autumn coloured foliage trees used in a dramatic way. Parliament House was to be built on the lakeside with a great forecourt. In 1968 the lakeshore location was rejected in favour of Camp Hill or Capital Hill. During the 1960s, the landscaping of the Parliamentary Triangle was modified to create more formality in Parkes Place. This included realigning roads, installing the four fountains in the pools in the land axis, paving and the relocation King George V statue.

The National Capital Development Commission (NCDC) Act of 1957 set in motion a significant phase in the development of Canberra with the support of Robert Menzies Liberal government. The report of British Town Planner Sir William Holford stressed the need for 'unified design' for Canberra. This view was supported by the Senate Select Committee which propagated Holford's concept of a 'park like landscape...in the heart of Canberra, in which monumental buildings functioned both as symbols of government and of Australian unity'. The visual design of this landscape, the views along the main axial lines and avenues as well as the grouping of monumental buildings were considered to be the elements upon which the success of Canberra as a city of world standing depended. Holford's recommendations included siting the future houses of parliament on the lakeside and developing two monumental buildings on the municipal axis north of a new road connection, which became Parkes Way. The NCDC's acceptance of the Holford vision set the design context for the completion of Anzac Parade and the construction of the Portal Buildings under the direction of NCDC architects and planners. The Portal Buildings have heritage significance.

After a number of schemes for Canberra's lake, detailed planning of the Lake edges was begun in 1954. Lake Burley Griffin was created in 1964 by the damming of the Molonglo River by Scrivener Dam. It reached its predicted level of 556 metres in the same year. The northern shore of the lake between Commonwealth and Kings Avenues was landscaped from about this time to create Commonwealth and Kings Parks. In 1970, two vertical features were opened in the central basin of the lake. The Carillon, located on Aspen Island in the eastern part of the central basin, was a gift from the British Government to mark the fiftieth Jubilee of the founding of Canberra in 1963. In the western part of the central basin is the Captain Cook Memorial water jet commissioned by the National Capital Development Commission as part of the Cook Bicentenary year. In 1968 a small restaurant was built on a corner of the western part of the National Rose Garden.

NCDC architect and landscape architect Gareth Roberts and architect and landscape architect Richard Clough collaborated on the design of Anzac Parade and its architectural elements at this time. The two Portal Buildings, Anzac Park East and Anzac Park West, were completed in 1965 and 1966 respectively. With the establishment of the Australian War Memorial in the 1940s, the surrounding landscape was imbued with an associated symbolic character. This included the creation of Anzac Park and Anzac Parade. Anzac Park became the setting for a series of memorials commemorating Australian involvement and sacrifice in war. Anzac Parade was opened by Her Majesty Queen Elizabeth II on Anzac Day 1965, the fiftieth anniversary of the landing of the Anzacs at Gallipoli. It is the setting for a series of memorials commemorating Australian involvement and sacrifice in war and is the major national venue for the Anzac Day March and other ceremonies to commemorate those who served Australia in times of conflict. It has a deep symbolism for many Australians and its vista, linking the Memorial with Parliament House, adds aesthetic and emotional value to the place, which has become part of one of the major cultural landscapes of Australia. The notion of a ceremonial space of this grandeur is not found elsewhere in Australia.

Over time the spaces flanking the land axis to the south of the Lake have been filled with government buildings of varying character. These include the Treasury Building established 1967-70, the National Library in 1968, the High Court in 1980, National Gallery in 1982 and the National Science and Technology Centre in 1988. Associated with the Gallery is the extensive and significant Sculpture Garden established in 1982.

In 1972 an informal Aboriginal Embassy was established in front of Old Parliament House. The Embassy became the focus of a campaign for land and other rights for Aboriginal and Torres Strait Islander people. In 1992 the Embassy was re-established.

The most recent major change to the central National area was the construction of a new Parliament House on Capital Hill. In 1974, The site of Capital Hill for Parliament House, was chosen by a joint sitting of both Houses of Parliament. An Act of Parliament extended Parliamentary jurisdiction over work in the Parliamentary Triangle, henceforth known as the Parliamentary Zone. Completed in 1988, the building has resulted in a number of significant changes to the area. The relocation of the Parliament to the new building left the Old Parliament House without its original use. The construction of the building also resulted in the levelling of Camp Hill, Griffin's intended location for a Parliament House and its incorporation into the broader formal landscape of the new Federation Mall. Finally, the new Parliament House involved the construction of a large complex of buildings and extensive new landscape areas. The changes affected most of Capital Hill. The winning design, by Mitchell, Giurgola and Thorp Architects, considered the land axis of Canberra as the fundamental gesture of the City, a line around which all other design has evolved in circular and radial directions (Reid 2002).

During 2001-2002 new designed features were constructed across the Land Axis of the Vista landscape. These are Commonwealth Place and Reconciliation Place. In addition, a rotunda with exhibition, called Magna Carta Place is located to the west of the former Senate Garden.

Following the construction of Parliament House, emphasis was placed on the landscape of the Parliament Zone. The development of Federation Mall with its trees and central space was to balance Anzac Parade and to complete the visual Land Axis from Capital Hill to the War Memorial.

Use

By the turn of the century (2000-2001), the area was used for countless public events. These include memorial services such as the Anzac Day March and the Dawn Service, public protest demonstrations, celebration events, sporting activities, water races, art displays, fireworks and large-sale concerts. In addition it is used by people informally for weddings, picnics, and fairs. The area is a popular destination for tourists and schoolchildren.

Description

The central National area of Canberra is an extensive cultural landscape comprising buildings, roads, parks, tree plantings and a lake. The area is designated for Parliamentary and National Capital uses. The major features of the area include: Parliament House with its gardens and paved areas, State Circle Cutting (geological feature), Old Parliament House and curtilage, East Block, West Block and the Dugout, the John Gorton Building, the National Gallery of Australia, the High Court of Australia, the High Court - National Gallery precinct, National Science and Technology Centre, the National Library of Australia, Treasury Building, National Rose Gardens, The Sculpture Garden of the National Gallery, King George V Memorial, Aboriginal Embassy, the Portal Buildings, Australian War Memorial and memorials along Anzac Parade, Aspen Island, the Carillon, Kings Park, HMAS Canberra Memorial, Merchant Navy Memorial, Blundell's Cottage, Commonwealth Park, Kings Park, the Peace Park, Regatta Point Exhibition Building and Restaurant, Captain Cook Memorial Water Jet, the Lakeshore Promenade, and extensive mature plantings and avenues of trees such as those along Anzac Parade. The area also includes fountains, roads, car parks, landscaped areas, a restaurant, kiosk and the residence of the Catholic Archbishop. The spaces, particularly the Land Axis, are a major feature.

The central National area has a strong sense of symmetry based on the land axis. The Parliament House, Old Parliament House and Australian War Memorial are located on the axis. In addition, the landscape features of Federation Mall, Parkes Place (the landscape feature not the roads) and Anzac Parade are also located on the axis. Other major features in the area are generally balanced about the axis such as: East and West Blocks, the gardens of Old Parliament House, the Portal Buildings, the eastern and western parts of the National Rose Gardens, Administrative and Treasury Buildings, the National Gallery/High Court group and the National Library/National Science and Technology Centre group, as well as the Carillon and Captain Cook Memorial water jet. The road system also generally reflects the symmetrical planning of the area based on the land axis.

The Anzac Parade Memorials comprises two main components, Anzac Parade and Anzac Park. Either side of Anzac Parade is bounded by Anzac Park. Treed sloping grassy strips contain 10 symmetrically placed aprons prepared for national memorials. In 2002 there were 11 memorials on Anzac Parade, tributes to the men and women of the Australian military. These memorials are: (1) the Australian Hellenic Memorial, Limestone Avenue intersection, (2) the Australian Army Memorial, near Currong Street, (3) the Australian National Korean Memorial, near Currong Street, (4) the Australian Vietnam forces National Memorial, opposite Booroondara Street, (5) the Desert Mounted Corps Memorial, opposite Amaroo Street (commonly known as the Light Horse Memorial), (6) the New Zealand Memorial (7) the Rats of Tobruk Memorial , opposite (5), (8) Royal Australian Air Force Memorial, opposite Page Street, (9) the Australian Service Nurses Memorial, (10) the Royal Australian Navy Memorial, and (11) Kemal Ataturk Memorial, Fairbairn Avenue intersection.

The array of mature tree plantings are all regarded as important. Some are classified as notable by Pryor and Banks (1991) and these include CALOCEDRUS DECURRENS on King George Terrace planted in 1927, CUPRESSUS ARIZONICA planted in 1926 on King George Terrace, EUCALYTUS GLOBULUS at the Australian War Memorial, E. MAIDENII group planted c 1927. Commemorative trees in the Parkes area, include the CUPRESSUS SEMPERVIRENS 'Stricta' planted in 1926 by nine members of the Empire Parliamentary Association, ARAUCARIA Bidwilli PLANTED BY THE duke of York in 1927 to commemorate his visit to Canberra to open the first Parliament House and CUPRESSUS ARIZONICA, planted by the wife of the then United States President, Mrs Lady Bird Johnson, at the time of their visit to Canberra in 1966. Within Commonwealth Park are a QUERCUS ROBUR planted by Princess Marina in 1964, and a CURRESSUS GLABRA planted by Mrs Lady Bird Johnson. Within the curtilage of the Australian War Memorial is a PINUS HALPENSIS planted by the Duke of Gloucester in 1934, believed to have been raised from seed from a cone collected from Lone Pine Ridge, Gallipolli in 1915. Also in curtilage is a EUCALYPTUS NICHOLII to replace the E. PAUCOFORA planted by Queen Elizabeth in 1954 to mark the begining of the Remembrance Driveway to Sydney (Pryor and Banks 1991).

2.3.3 Commonwealth Avenue Bridge - Heritage Assessment 2020

In 2020, GML prepared a heritage assessment to determine the level of significance of the Commonwealth Avenue Bridge.

> The assessment was prepared in accordance with the requirements of the *EPBC Act* and Regulations. Section 10.03A of the EPBC Regulations provides nine Commonwealth Heritage criteria for identifying and assessing the Commonwealth Heritage values of a place.
>
> Section 528 of the *EPBC Act* defines the 'heritage value' of a place as including the place's natural and cultural environment, having aesthetic, historic, scientific or social significance, or other significance, for current and future generations of Australians. Cultural value can equate to Indigenous and/or non- Indigenous ('historic') heritage value.
>
> Heritage values can be embodied in physical and intangible 'attributes', such as the location, function, form, fabric, characteristics and associations with a place. Associations, or non-physical values or attributes, can relate to the use, access, traditions, cultural practices, knowledge or sensory and experiential responses that the place evokes.[15]

The following heritage assessment has been extracted from the GML report, with the Statements of Heritage Value highlighted orange. Any changes to the bridge should consider these values and aim to minimise heritage impacts. Mitigation strategies should be developed where impacts are unavoidable.

15: GML Heritage, Commonwealth Avenue Bridge Heritage Assessment, 2020.

CRITERIA	VALUE
CRITERION (a): Historic Processes The place has significant heritage value because of the place's importance in the course, or pattern, of Australia's natural or cultural history.	**Assessment** Commonwealth Avenue Bridge is historically significant for its development by the National Capital Development Commission (NCDC)—an agency established by the Australian Government to revise the building of Canberra based on the Griffin Plan of 1918 and 1925. Commonwealth Avenue Bridge, together with Kings Avenue Bridge, represent a significant part of Canberra's planning history, landscape design and development. Commonwealth Avenue Bridge, as the most prominent physically and ceremonially of the two bridges, was designed to have outstanding quality, which directly responded to the functional need and aesthetic suitability that exactly suited its designed landscape setting of the then new lake (for the Lake Burley Griffin Scheme) and Canberra's natural environment. The bridges complete two sides of the National Triangle and are integral to the NCDC's design of the Lake Burley Griffin Scheme, which, when implemented, unified northern and southern Canberra. The Scheme was the NCDC's first major engineering and urban planning achievement in the development of the capital city; achieved with prominent firms G. Maunsell and Partners and W. Holford and Partners. The completion of the Scheme, the bridges and the lake is also significant as it represents a major historical and physical change for Canberra—the replacement of earlier rural-style timber bridges over the Molonglo River and flood plain transformed the area , formalising the road layout to more fittingly express the symbolic and ceremonial importance of the national capital. With the opening of Parliament House on Capitol Hill in 1988, Commonwealth Avenue Bridge has become more important as a major approach to the Parliament of Australia. The bridge, and Commonwealth Avenue, are part of the road network that is symbolic of democracy and the connection between the people and the government. Commonwealth Avenue Bridge has historic engineering significance within Australia: • as an early example of prestressed concrete to create a post tensioned superstructure in Australian history; • as the second post-tensioned bridge to be completed in the nation after The Narrows Bridge in Perth—it employs external post-tensioning cables as distinct from internal pre-stressing membranes within the precast concrete beams (as with the Tasman Bridge, Hobart, and Kings Avenue Bridge, Canberra); • as the first prestressed concrete bridge to employ multi-webbed precast box segments, which increased the complexity (compared with 'I' sections in The Narrows and square box sections in the Gladesville Bridge, Sydney) but reduced the amount of concrete and associated cost, and allowed improved appearance and finish; and • an early prestressed concrete bridge to employ digital computing for stress analysis and design. (Note: the Gladesville Bridge was world's first). Commonwealth Avenue Bridge **meets** criterion (a). **Statement of Heritage Value** Commonwealth Avenue Bridge is historically significant for its development by the NCDC as part of the Lake Burley Griffin Scheme and represents a significant part of Canberra's planning history, landscape design and development. Historically, Commonwealth Avenue Bridge is significant for its design and engineering significance within Australia. **Attributes** Attributes under this criterion include: • the bridge's location and symbolic function in the national capital; and • the concrete bridge construction.

Figure 211: Extent of site for Commonwealth Avenue Bridge Heritage Assessment.

Source: GML, Commonwealth Avenue Bridge Heritage Assessment, September 2020, p.2.

CRITERIA	VALUE
CRITERION (b): Rarity The place has significant heritage value because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.	**Assessment** Commonwealth Avenue Bridge is a rare example in Australia of a precast, post–tensioned, concrete bridge, embodying multi-webbed box segments. It was the first in Australia to depart from the simple form of 'I' section or square box segment, resulting in an aesthetically sleek and 'modern' appearance when viewed from any direction. The bridge is rare for its design to have a symbolic pride of place in the national capital as part of the Lake Burley Griffin Scheme. The Scheme was the NCDC's first major engineering and urban planning achievement in the development of the capital city. It is also a rare example of bridge lighting, of the time, that was integrated into the handrail and parapet, illuminating the roadway and walkways, and enabling the bridge elevation to be viewed from a distance. The lighting design enhances that of the lighting prototyped in Kings Avenue Bridge, the first use of such integrated lighting in Australia. Commonwealth Avenue Bridge **meets** criterion (b). **Statement of Heritage Value** Commonwealth Avenue Bridge is a rare example in Australia of a precast, post-tensioned, concrete bridge, embodying multi-web box segments. The bridge is rare for its design to have a symbolic pride of place in the national capital as part of the Lake Burley Griffin Scheme and for the integration of lighting within the handrail and parapet of the bridge in terms of bridge design within Australia. **Attributes** Attributes of the bridge under this criterion include: • the precast post-tensioned structure; • complex multi-webbed box segments; • aesthetically and architecturally sleek lines, as seen from different viewing points; and • pioneering lighting integrated into the bridge design.
CRITERION (c) : Research Potential The place has heritage value because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.	**Assessment** Commonwealth Avenue Bridge has heritage value for the advancement of structural engineering and bridge construction in Australia. It represents a turning point in terms of materials used for major urban bridges— from steel to prestressed concrete. It also provides an understanding of the early use of digital computing in structural analysis and bridge design. Commonwealth Avenue Bridge **meets** criterion (c). **Statement of Heritage Value** Commonwealth Avenue Bridge demonstrated the advancement of structural engineering and bridge construction in Australia, particularly in the shift in material from steel to prestressed concrete in major bridge construction, and in the early use of digital computing in the design and structural analysis of its post tensioned concrete superstructure. **Attributes** Attributes under this criterion include: • the whole bridge; and • the bridge in its wider landscape setting.

CRITERIA	VALUE
CRITERION (d): Characteristic The place has significant heritage value because of the place's importance in demonstrating the principal characteristics of: a class of Australia's natural or cultural places; or a class of Australia's natural or cultural environments.	**Assessment** The Commonwealth Avenue Bridge is an important early example of a pioneering design to achieve the principal characteristics for a modern, technical engineering solution, with an aesthetically appropriate and elegant long-spanned bridge in Australia. Historically, the design of the bridge is representative of the post-World War II period of modernisation and optimism, and of the NCDC striving toward innovation to reflect Australia's aspiration to have a truly contemporary 'international-style' capital city. The bridge is also an early example of the development of segmented and prestressed concrete bridges in Australia. It was the second in Canberra and the third in Australia to be completed, all of which were designed by the same firm of consulting engineers, G. Maunsell and Partners. Together with the Narrows Bridge in Perth, Commonwealth Avenue Bridge is an excellent example of an early class of modern prestressed concrete bridge that is characterised by long slender spans, and which is 'smooth-lined' and 'uncluttered' in design. This is a departure from the earlier style of major bridges, such as Sydney Harbour and Storey Bridges, which were of open steel lattice form. In comparing the bridge with the Kings Avenue Bridge, Commonwealth Avenue Bridge is: • of greater prominence through its location on Commonwealth Avenue, which is the intended ceremonial approach to the Parliamentary Zone/ National Triangle; • more impressive in form and features, as befitting its ceremonial role (which is also reflected in its name); and • of a greater level of technical complexity and degree of detailing and finish. Commonwealth Avenue Bridge **meets** criterion (d).
	Statement of Heritage Value Commonwealth Avenue Bridge is representative of early development of segmented and prestressed concrete bridges in Australia, and of a class of design in modern bridges characterised by long slender spans, and a 'smooth-lined' and 'uncluttered' approach.
	Attributes Attributes under this criterion include: • the whole bridge, for its segmented and prestressed concrete construction; and • the bridge, in conjunction with Kings Avenue Bridge, in its wider landscape setting.

CRITERIA	VALUE
CRITERION (e): Aesthetic The place has significant heritage value because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group	**Assessment** Commonwealth Avenue Bridge has significant heritage value to the Canberra community for its aesthetic characteristics. The aesthetic characteristics of Commonwealth Avenue Bridge were an integral part of the NCDC's brief achieved by the engineers, G. Maunsell and Partners and the designers, W. Holford and Partners. They achieved a 'well-proportioned bridge, of unusual interest, not unworthy of the position for which it is intended' and 'the feature of the landscape that has had the most influence on the design of the bridge is the lowness of the relief in relation to surface distance.' The elegant and simple design of the Commonwealth Avenue Bridge is appreciated by the Canberra community both, as a feature in its own right, and in relation to the broader designed landscape setting of Lake Burley Griffin and the Central National Area. The characteristics held by the community confirm the distinctive qualities and architectural design, comprising a low-profile and streamlined concrete form which complements, rather than dominates, the designed surrounding landscape setting. Commonwealth Avenue Bridge is: • a key element within Canberra's design and planning, making reference to the Griffin Plan and providing clear definition of the National Triangle through its symmetry with Kings Avenue Bridge; • visually distinctive and possesses iconic qualities because of its design, form and setting, which contributes to the aesthetic qualities of the Central National Area that are unique to Canberra; and • provides a great vantage point to appreciate the lake, special events and other elements of Canberra's urban landscape. Views to the bridge, both during the day and at night, are widely enjoyed from key locations, including lookouts, around Canberra. The bridge possesses evocative qualities that provoke strong emotional responses, such as optimism, tranquillity, familiarity and delight by the local community. The bridge is widely recognised for its design excellence—its formal elegance and dramatic nature are widely represented and appreciated by the community through photography. Commonwealth Avenue Bridge **meets** criterion (e). **Statement of Heritage Value** Aesthetically, Commonwealth Avenue Bridge is highly valued by the Canberra community for its distinctive qualities and architectural design which complements the designed surrounding landscape setting. The elegant and simple design of the bridge is appreciated both as a feature in its own right and as part of the broader designed landscape of the Central Canberra. Commonwealth Avenue Bridge is also valued as a key element in Canberra' design and planning and its visually distinctive and iconic qualities. The views to and from the bridge, both during the day and night, are widely enjoyed and valued by the Canberra community. **Attributes** Attributes of the bridge under this criterion include: • simple, unadorned, and streamlined form, low-profile design, concrete materials and light colour; • vertical pylons defining the 'ends/entry'; • aluminium railings with integrated strip lighting for night-time illumination; • location and alignment—defining one arm of the National Triangle and providing symmetry with Kings Avenue Bridge; • pedestrian/bicycle accessibility; • openness around the bridge; • views to and from Commonwealth Avenue Bridge; and • context and visual setting of Lake Burley Griffin, national institutions, lakeside parklands and distant hills/mountains.

CRITERIA	VALUE
CRITERION (f): Creative or Technical Achievement The place has significant heritage value because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period	**Assessment** Commonwealth Avenue Bridge demonstrates a high degree of creative and technical achievement in Canberra's building and development by the NCDC in the 1960s, and more generally in Australia's progress in the post–World War II period of innovation and optimism. Commonwealth Avenue Bridge was the first prestressed concrete bridge to employ multi-webbed precast box segments, which increased the complexity (compared with 'I' sections in The Narrows and square box sections in the Gladesville Bridge, Sydney) but reduced the amount of concrete and associated cost, and allowed improved appearance and finish. The bridge is an early example of the use of computers in the design and structural analysis of its post- tensioned concrete superstructure. Commonwealth Avenue Bridge **meets** criterion (f).
	Statement of Heritage Value Commonwealth Avenue Bridge demonstrates a high degree of creative and technical achievement in Canberra's building and development by the NCDC in the 1960s, and more generally in Australia's progress in the Post World War II period. It was the first prestressed concrete bridge to employ multi-webbed precast box segments and is a very early example of the use of digital computers in bridge design and to analyse, and compute the structure and stress, influencing the physical design.
	Attributes Attributes of the bridge under this criterion include: • the whole bridge, particularly multi-webbed precast box segments.
CRITERION (g): Social Values The place has significant heritage value because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	**Assessment** Commonwealth Avenue Bridge is valued by the Canberra community as: • an important landmark in Canberra; • an accessible public space that supports movement around the city for work, recreation and leisure activities; • a place of personal memory and experience that provides a sense of connection with the past and is part of a shared sense of community identity; • a public place that connects the community to memories of important times of joy, contentment, sadness and grief; • a physical and symbolic marker within the city because it evokes a sense of permanence and reliability for the Canberra community; • it provides an experiential connection to the natural environment; and • a symbolic and physical link between the civic and governmental areas of Canberra, recognised as an important element in the ceremonial route to Parliament House and more generally seen as symbolic of democracy and the connection between the people and the government. The value of the Commonwealth Avenue Bridge extends beyond utility and function for physical connection and transport across the lake. The bridge is appreciated by the Canberra community for its continuing contribution to the development of a strong sense of familiarity, social connection and enduring attachment. The bridge helps bring the community together through private and public experiences, including recreational activities, events and protests. The bridge is of contemporary Indigenous/Aboriginal cultural heritage significance (rather than part of a traditional cultural heritage value) as it is a key part of the National Sorry Day march route from Commonwealth Park to the Aboriginal Tent Embassy. The walk is regularly attended by thousands of Canberrans in support of the Aboriginal community. Commonwealth Avenue Bridge meets criterion (g).
	Statement of Heritage Value Commonwealth Avenue Bridge is valued by the Canberra community as a key element within Canberra's designed landscape and planning, that supports movement around the city and brings the community together through public and private experiences. Commonwealth Avenue Bridge is an important landmark within Canberra and is a key part of the National Sorry Day march route.

CRITERIA	VALUE
CRITERION (g): Social Values The place has significant heritage value because of the place's strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (continued)	**Attributes** Attributes of bridge under this criterion include: • social and cultural association for a substantial part of the Canberra community; • public accessibility (pedestrian and bicycle) and function; • location and alignment in Canberra's designed landscape; • design of Commonwealth Avenue Bridge, including all components which make up its form, scale, materials and colours; • visual setting comprising Lake Burley Griffin, national institutions, surrounding lakeside parklands, and hills/mountains; and • regular route for National Sorry Day march.
CRITERION (h): Significant People The place has significant heritage value because of 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	**Assessment** Commonwealth Avenue Bridge is associated with the National Capital Development Commission (NCDC), which was established by the Australian Government to revise and implement the planning of Canberra, based on the Griffin Plan of 1918 and 1925. It is associated with well-known international and national identities from the engineering and architecture profession from the time of its construction, including: • the engineering design firm G. Maunsell and Partners, founded by British engineer Guy Maunsell; • the construction firm M. R. Hornibrook Pty Ltd, an Australian company, founded by Manuel Richard Hornibrook; and • W. Holford and Partners; an architectural firm, founded by Sir William Holford, an advisor to the NCDC. Commonwealth Avenue Bridge **meets** criterion (h)
	Statement of Heritage Value Commonwealth Avenue Bridge is important for its association with the NCDC plus well-known international and national identities from the engineering and architecture profession of the time, including the engineering design firm G. Maunsell and Partners, the architectural firm W. Holford and Partners, and Australian construction firm, M.R Hornibrook Pty Ltd.
	Attributes The attributes under this criterion include: • Commonwealth Avenue Bridge and its landscape context.
Criterion (i): Indigenous Tradition The place has significant heritage value because of the place's importance as part of Indigenous tradition.	**Assessment** Consultation undertaken with RAO's confirms that Commonwealth Avenue Bridge is not a culturally significant place, or of value as part of Indigenous/Aboriginal tradition. Commonwealth Avenue Bridge **does not meet** criterion (i).
	Statement of Heritage Value Commonwealth Avenue Bridge is not a culturally significant place, or of value as part of Indigenous/Aboriginal tradition.
	Attributes -

Summary Statement of Significance

The GML Report contains the following summary Statement of Significance:

> Commonwealth Avenue Bridge is a place of Commonwealth Heritage value.
>
> The assessment in Section 5.3 determines that Commonwealth Avenue Bridge meets criteria (a) historic processes, (b) rarity, (c) research potential, (d) characteristic, (e) aesthetic, (f) creative or technical achievement, (g) social and (h) significant people, and is eligible for nomination and inclusion in the CHL. In meeting eight of the nine criteria, the bridge is an individual element of heritage significance. It is also an integral component of the broader designed landscape setting of the Central National Area.
>
> Commonwealth Avenue Bridge is historically significant for its development by the NCDC as part of the Lake Burley Griffin Scheme and represents a significant part of Canberra's planning history, landscape design and development.
>
> The bridge is representative of early development of major segmented and prestressed concrete bridges in Australia, and of a class of design in modern bridges characterised by long slender spans, and a 'smooth-lined' and 'uncluttered' approach.
>
> Commonwealth Avenue Bridge is a rare example in Australia of a precast, post-tensioned, concrete bridge, embodying multi-web box segments. The bridge is rare for its design to have a symbolic pride of place in the national capital as part of the Lake Burley Griffin Scheme and for the integration of lighting within the handrail and parapet of the bridge in terms of bridge design within Australia.
>
> Commonwealth Avenue Bridge has heritage value as an example of the advancement of structural engineering and bridge construction in Australia, particularly in the shift in material from steel to prestressed concrete in major bridge construction, and in the early use of digital computing in the design and structural analysis of its post tensioned concrete superstructure.
>
> Aesthetically, Commonwealth Avenue Bridge is highly valued by the Canberra community for its distinctive qualities and architectural design which complements the surrounding landscape setting of the designed lake and central area of Canberra. The elegant and simple design of the bridge is appreciated both as a feature in its own right and as part of the broader designed landscape of the Central Canberra. Commonwealth Avenue Bridge is also valued as a key element in Canberra' design and planning and its visually distinctive and iconic qualities. The views to and from the bridge, both during the day and night, are widely enjoyed and valued by the Canberra community.
>
> Commonwealth Avenue Bridge demonstrates a high degree of creative and technical achievement in Canberra's building and development by the NCDC in the 1960s, and more generally in Australia's progress in the Post World War II period of innovation and optimism. It was the first prestressed concrete bridge to employ multi-webbed precast box segments and is a very early example of the use of digital computers in bridge design and to analyse, and compute the structure and stress, influencing the physical design.
>
> Commonwealth Avenue Bridge is valued by the Canberra community as a key element within Canberra's designed landscape and planning, that supports movement around the city and brings the community together through public and private experiences. Commonwealth Avenue Bridge is an important landmark within Canberra and is a key part of the National Sorry Day march route.
>
> Commonwealth Avenue Bridge is important for its association with the NCDC, and well-known international and national identities from the engineering and architecture profession of the time, including the engineering design firm G. Maunsell and Partners, the architectural firm W. Holford and Partners, and Australian construction firm, M.R Hornibrook Pty Ltd.
>
> Commonwealth Avenue Bridge does not have Indigenous or natural heritage values.[16]

CRITERIA	MEETS CHL THRESHOLD
(a): Historic Processes	Yes
(b): Rarity	Yes
(c): Research Potential	Yes
(d): Characteristic	Yes
(e): Aesthetic (community-held)	Yes
(f): Creative or Technical Achievement	Yes
(g): Social value (community-held)	Yes
(h): Associations: Significant People	Yes
(i): Indigenous Tradition	No

Table 1: Summary of Heritage values assessment against CHL criteria.

Sourch: GML, Commonwealth Avenue Bridge—Heritage Assessment, September 2020, p.42.

Recommendations

The GML Heritage Report establishes that Commonwealth Avenue Bridge has Commonwealth Heritage value, both as an individual element, and for its contribution to Canberra's Central National Area and Lake Burley Griffin and that the bridge is therefore eligible for nomination to the CHL by the NCA. The report concludes with the following recommendations:

> As managers, the NCA is responsible for the conservation, protection, future change and interpretation of the identified heritage values of the bridge in accordance with the *EPBC Act* and its regulations.
>
> The following points are provided as preliminary recommendations for the management of the bridge's identified heritage values.
>
> – Consider preparing a nomination of Commonwealth Avenue Bridge to the CHL—if deemed appropriate by the NCA.
> – Conserve and manage the heritage values of Commonwealth Avenue Bridge in accordance with the *EPBC Act*, the National Capital Plan and best-practice heritage management.
> – Ensure that future change, or any works associated with Commonwealth Avenue Bridge, which may have, or are likely to have, a significant heritage impact are planned in accordance with the *EPBC Act* and the NCA's internal self-assessment processes. The NCA's internal self- assessment processes are the steps that the NCA undertake to determine whether or not a proposed action is likely to have a significant impact on the environment (which includes the heritage values of a place).[17]

16: GML Heritage, Commonwealth Avenue Bridge - Heritage Assessment, September 2020, p.41.

17: GML Heritage, Commonwealth Avenue Bridge - Heritage Assessment, September 2020, p.43.

2.4 Roads in National Land, CHL Assessment

Commonwealth Avenue

Commonwealth Avenue, the road which traverses the bridge, was assessed as part of the Certain Roads of National Land in Central Canberra Commonwealth Heritage Assessment in 2014. The assessment, shown in the table to the right, did not result in a listing of the road.

Summary of Significance

The Heritage Assessment concluded with the following summary of significance:

> Commonwealth and Kings Avenues have a range of heritage values related to historical associations, rarity, research potential, as good examples of wide tree-lined avenues, for their creative achievement, and special associations with Griffin and Weston. Some of these values arise from the contribution of the avenues to a larger heritage place.
>
> Commonwealth and Kings Avenues are significant as an integral and major part of Walter Burley Griffin's 1911 plan for the national capital of Australia, and their realisation is associated with the evolution of the cultural landscape of the nation's capital. This landscape has influenced subsequent city planning and road design in Canberra and through the high standards being set for urban road construction elsewhere in Australia.
>
> The initial design of the national capital is a highly significant part of Australia's and Canberra's history. Commonwealth and Kings Avenues are two of the three major avenues designed to bound the National Triangle – the heart of the national capital – and two of the major axes for the organisation of the new city.[18]

18: Duncan Marshall, Chris Betteridge, Navin Officer Heritage Consultants, Dr Warren Nicholls, Prof Robert Freestone and Dr Michael Pearson, Certain Roads of National Lands in Central Canberra, Commonwealth Heritage Assessment prepared for the National Capital Authority, 2014, pp.133-139.

CRITERIA	VALUE
CRITERION (a): Historic Processes The place has significant heritage value because of the place's importance in the course, or pattern, of Australia's natural or cultural history.	Commonwealth and Kings Avenues are significant as an integral and major part of Walter Burley Griffin's 1911 plan for the national capital of Australia, and their realisation is associated with the evolution of the cultural landscape of the nation's capital. This landscape has influenced subsequent city planning and road design in Canberra and through the high standards being set for urban road construction elsewhere in Australia. The initial design of the national capital is a highly significant part of Australia's and Canberra's history. Commonwealth and Kings Avenues are two of the three major avenues defining the edges of the National Triangle – the heart of the national capital – and two of the major axes for the organisation of the new city.
CRITERION (b): Rarity The place has significant heritage value because of the place's possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.	Commonwealth and Kings Avenues are significant being relatively rare as original and major parts of Griffin's design representing two sides of his planned National Triangle. They help to demonstrate the planning of a national capital which is an uncommon aspect of Australia's cultural history.
CRITERION (c) : Research Potential The place has heritage value because of the place's potential to yield information that will contribute to an understanding of Australia's natural or cultural history.	The cultural landscape of the national capital, including Commonwealth and Kings Avenues, is significant from a research aspect in providing, through an examination of records and landscape elements, information and an understanding of the landscaping of the capital's cultural landscape, including the potential for assessment of the performance of certain street tree species over time (eg. varieties of elm).
CRITERION (d): Characteristic The place has significant heritage value because of the place's importance in demonstrating the principal characteristics of: a class of Australia's natural or cultural places; or a class of Australia's natural or cultural environments.	Commonwealth and Kings Avenues are significant as good examples in Canberra of an important type of landscape – wide tree-lined avenues – including the layout of the plantings and the mix of native and exotic trees, which are an important feature in Canberra's planning and landscape.
CRITERION (e): Aesthetic characteristics	There is no evidence of value under this criterion.
CRITERION (f): Technical Achievement The place has significant heritage value because of the place's importance in demonstrating a high degree of creative or technical achievement at a particular period	Commonwealth and Kings Avenues are significant as major parts of a landscape/urban design that represented a paradigm shift in urban planning in Australia, and this has probably influenced many subsequent developments – noting that some of the infrastructure is more recent (eg. the bridges). They are an integral part of a place, the designed national capital, acclaimed for its design excellence, which is of importance in the history of Australia and its capital city. While the original design intent has not been fully realised, there are still strong creative values in the place which can be further enhanced. The achievement of the original designer, Walter Burley Griffin, is still apparent in the alignment of the roads and the layout and mix of species used in the plantings are surviving evidence of the major input of Charles Weston to the landscaping of the national capital.
CRITERION (g): Social value	Not researched.
CRITERION (h): Significant People The place has significant heritage value because of 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	Commonwealth and Kings Avenues are significant because they are major and integral parts of a town planning complex that has outstanding heritage value to the nation because of its special association with its designer, Walter Burley Griffin, a person of great importance in Australia's cultural history. Griffin is of importance because of his principal role in designing the nation's capital. Commonwealth and Kings Avenues are major and integral parts of that design, and Griffin has a special association with the Canberra design as his pre-eminent work in Australia. The avenues also have a special association with Charles Weston who is important because he was responsible for the initial plantings in the Canberra landscape, especially the Parliamentary Zone. The avenues are part of the landscape of the Parliamentary Zone, and share the special association with Weston.
CRITERION (i): Indigenous Tradition	There is no evidence of value under this criterion.

2.5 ACT State Heritage Register

The study area is located within the vicinity of a number of items listed on the ACT State Heritage Register. The following Heritage Items are located in close proximity to the site:

	NAME OF ITEM	ID NO.
1	Albert Hall	429
2	Hotel Canberra	437
3	National Rose Gardens	439
4	Lennox House	447
5	Captain Cook Water Jet	Nominated

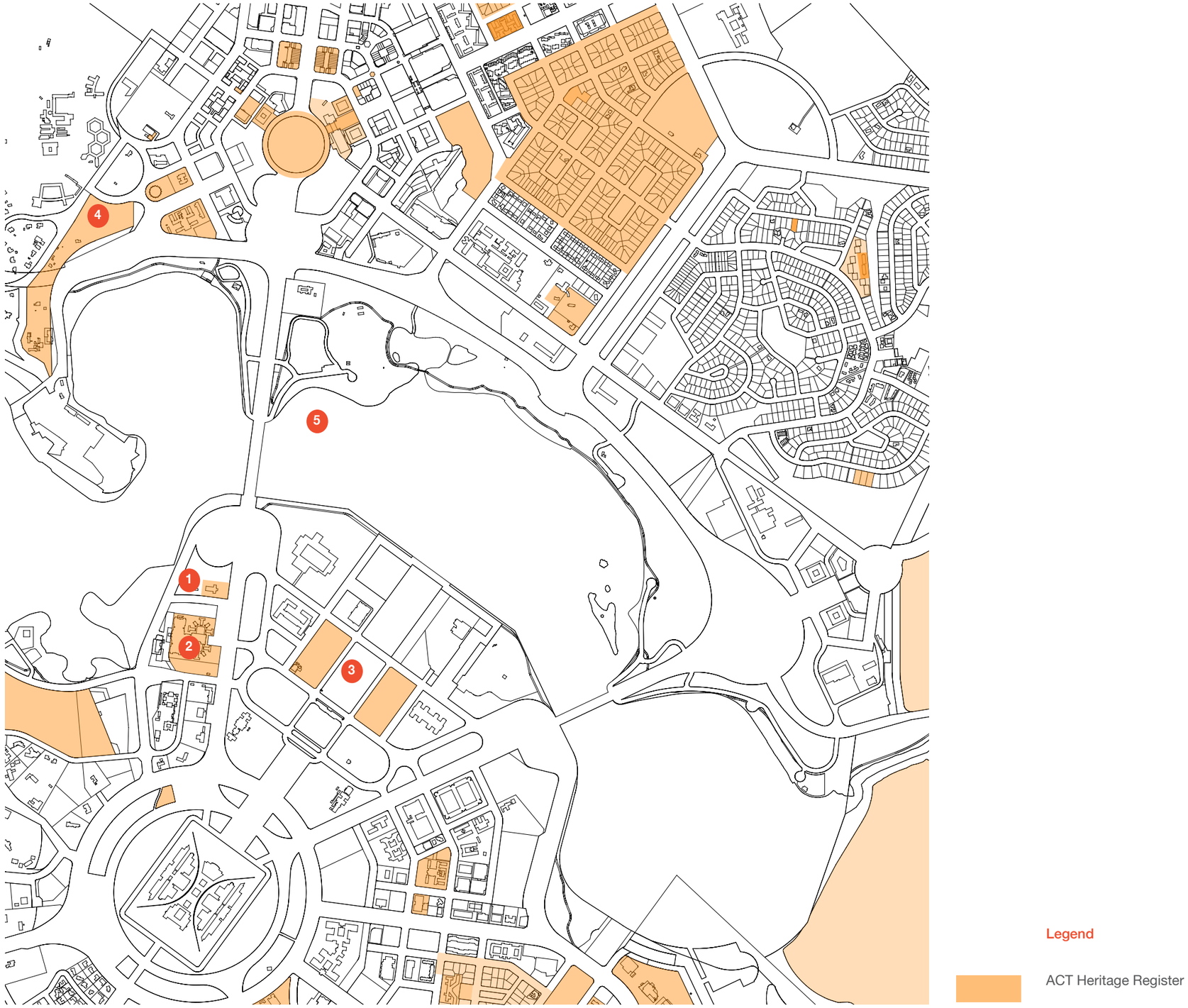


Figure 212: ACT State Heritage Listing Map.
Source: ACT Government, online.

2.6 Intangible Heritage

Intangible heritage refers to the 'invisible' elements of culture that imprint on the identity of groups but cannot be perceived by touch, and is experienced through customs, history and values. The Commonwealth Avenue Bridge holds many intrinsic and intangible heritage values that should be respected and celebrated, including historic associations, stories, memories and meanings.

The community held aesthetic and social values of the bridge were assessed by GML Heritage in May 2020. This assessment included community engagement in the form of an online survey, focus group workshops and targeted interviews. Further consultation with key stakeholders and the community is recommended as the design for the Commonwealth Avenue Bridge Renewal Project develops to ensure that these values are respected.

The site of the Commonwealth Avenue Bridge was occupied by Aboriginal people for thousands of years prior to European settlement. Particular intangible values would be relevant to Aboriginal peoples cultural history, experiences and spirituality. These intangible values would be determined through consultation with knowledge holders.

The lasting high esteem in which the Commonwealth Avenue Bridge is held is demonstrated by its selection as the subject matter for many iconic photographs of Canberra. These depictions evidence the intangible heritage values of the place that have been captured and celebrated over time.

Whilst the Commonwealth Avenue Bridge holds many intangible heritage values, it should be emphasised that many of these are inextricably linked to the form, function and location of the bridge. This particularly relates to the Bridge's significant setting and context - The Bridge spans Lake Burley Griffin, connects the City to the Parliamentary Triangle and defines the western edge of the heritage listed Parliament House Vista.

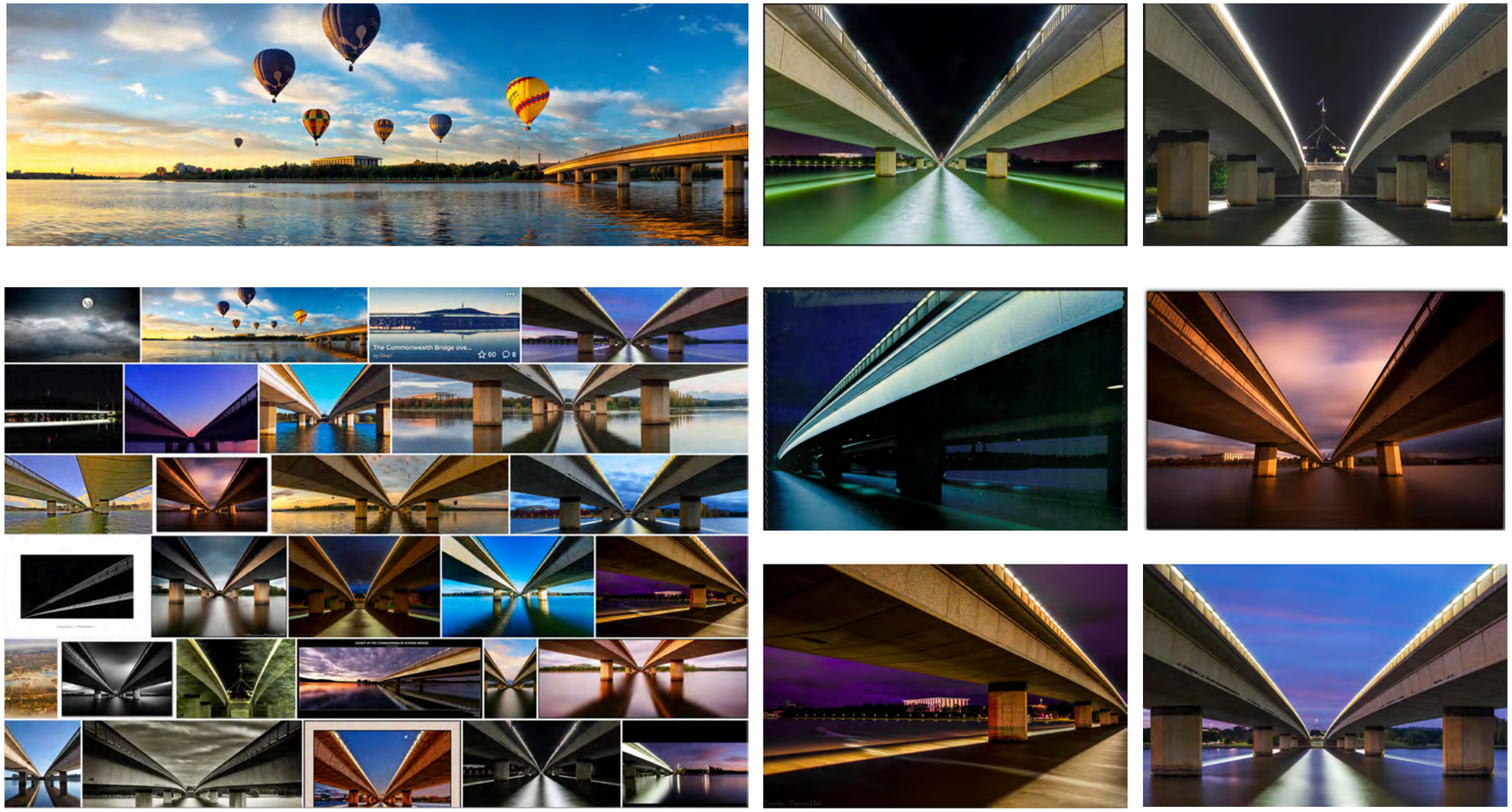


Figure 213: Photographs on Flickr evidencing the popularity of the Commonwealth Avenue Bridge as subject matter for iconic shots of Canberra.

Source: Flickr, https://www.flickr.com/search/?text=%23Commonwealthbridge

Figure 214: 1964.Commonwealth Avenue Bridge at night.
Source: National Archives of Australia, A1200, L46393, Item ID 11719029.

3.0
Constraints and Opportunities

3.1 Overview

The heritage values of items within and adjacent to the Commonwealth Avenue Bridge site result in a number of constraints and opportunities which should be taken into account in any future redevelopment of the Bridge.

Potential constraints and opportunities arise from the following:

- Heritage significance
- Integrity and physical condition
- Significant views
- Heritage Interpretation
- Design

3.2 Heritage Significance

The Australia ICOMOS Burra Charter for Places of Cultural Significance, 2013, known as the Burra Charter, is widely accepted in Australia as the underlying methodology by which all works to heritage places are undertaken.

Items within, or adjacent to, the study area are identified to be of National, Commonwealth, State and local heritage significance and any renewal of the bridge and surrounding areas should take a significance-based approach. The heritage significance of the items within, and in close proximity to, the Commonwealth Avenue Bridge site should be respected and retained. This requirement is based on those aspects of the items that contribute to their overall significance, as outlined in the Assessment of Significance and Statement of Significance for each heritage item.

Heritage significance should not be seen as an imposition, rather an opportunity to provide meaningful, holistic placemaking, historical connections and sustainable outcomes. Items of heritage significance, and their corresponding curtilage, however, impose physical constraints on new development within the site. This applies to both elements within the site and to heritage listed items located adjacent to the site. Future development within the site should take these constraints into consideration, and explore opportunities as identified in the discussion that follows.

3.2.1 Conservation Principles

The Burra Charter provides specific guidelines and principles for actions that should occur in relation to significant places and structures. Measures that are particularly relevant to the Commonwealth Avenue Bridge Renewal Project include the following:

Article 2: Conservation and management

- *Places of cultural significance should be conserved. (Article 2.1)*

Article 3: Cautious approach

- *Conservation is based on a respect for the existing fabric, use, associations and meanings. It requires a cautious approach of changing as much as necessary but as little as possible. (Article 3.1)*

Article 5: Values

- *Conservation of a place should identify and take into consideration all aspects of cultural and natural significance without unwarranted emphasis on any one value at the expense of others. (Article 5.1)*

Article 7: Use

- *Where the use of a place is of cultural significance it should be retained. (Article 7.1)*
- *A place should have a compatible use. (Article 7.2)*

Article 8: Setting

- *Conservation requires the retention of an appropriate setting. This includes retention of the visual and sensory setting, as well as the retention of spiritual and other cultural relationships that contribute to the cultural significance of the place. New construction, demolition, intrusions or other changes which would adversely affect the setting or relationships are not appropriate. (Article 8)*

Article 15: Change

- *Change may be necessary to retain cultural significance, but is undesirable where it reduces cultural significance. The amount of change to a place and its use should be guided by the cultural significance of the place and its appropriate interpretation. (Article 15.1)*
- *Changes which reduce cultural significance should be reversible, and be reversed when circumstances permit. (Article 15.2)*
- *Demolition of significant fabric of a place is generally not acceptable. However, in some cases minor demolition may be appropriate as part of conservation. Removed significant fabric should be reinstated when circumstances permit. (Article 15.3)*
- *The contributions of all aspects of cultural significance of a place should be respected. If a place includes fabric, uses, associations or meanings of different periods, or different aspects of cultural significance, emphasising or interpreting one period or aspect at the expense of another can only be justified when what is left out, removed or diminished is of slight cultural significance and that which is emphasised or interpreted is of much greater cultural significance. (Article 15.4)*

Article 21: Adaptation

- *Adaptation is acceptable only where the adaptation has minimal impact on the cultural significance of the place. (Article 21.1)*
- *Adaptation should involve minimal change to significant fabric, achieved only after considering alternatives. (Article 21.2)*

Article 22: New work

- *New work such as additions or other changes to the place may be acceptable where it respects and does not distort or obscure the cultural significance of the place, or detract from its interpretation and appreciation. (Article 22.1)*
- *New work should be readily identifiable as such, but must respect and have minimal impact on the cultural significance of the place. (Article 22.2)*

Article 25: Interpretation

- *The cultural significance of many places is not readily apparent, and should be explained by interpretation. Interpretation should enhance understanding and engagement, and be culturally appropriate. (Article 25)*

Article 33: Removed fabric

- *Significant fabric which has been removed from a place including contents, fixtures and objects, should be catalogued, and protected in accordance with its cultural significance.*
- *Where possible and culturally appropriate, removed significant fabric including contents, fixtures and objects, should be kept at the place. (Article 33)*

3.2.2 Integrity and Physical Condition

The Commonwealth Avenue Bridge is generally in good condition. The ongoing use of the bridge is dependent on the maintenance of its fabric.

The integrity of the bridge is relatively high. Later modifications, associated with the road and cycle barriers, have a greater tolerance for change than the primary structure of the bridge.

The lakeside parks at either end of the bridge are relatively well maintained and generally in good condition.

3.2.3 Opportunities arising from heritage significance

The following opportunities relating to heritage significance should be taken into consideration:

- The opportunity to repair and conserve existing significant fabric should be taken.
- The opportunity to remove intrusive fabric should be taken as part of any renewal of the bridge.
- Adaptive reuse of significant elements could be undertaken in accordance with the principles of the Burra Charter.
- Opportunities for interpretation should be explored to enhance public appreciation and understanding of the heritage significance of the Commonwealth Avenue Bridge.

3.3 Key Heritage Considerations

3.3.1 Lake Burley Griffin and Adjacent Lands

The Commonwealth Avenue Bridge is located within the curtilage of Lake Burley Griffin and Adjacent Lands, which has recently been listed on the Commonwealth Heritage List.

Lake Burley Griffin and Adjacent Lands HMP

Part 1 of the HMP contains general conservation policies and Part 4 of the HMP contains specific policies related to Commonwealth Avenue Bridge which should be taken into consideration in developing options for the renewal of the Commonwealth Avenue Bridge.

Key attributes of the bridge include the elegant, designed form of the bridge, including its slim octagonal piers, spaced to provide views to West Basin, aluminium railings with strip lighting, the white colour of the precast concrete and the Waterloo Bridge stones.

The bridge provides some of the most important views of Lake Burley Griffin, including surrounding near and distant topography, to both pedestrians and motorists. It is important that these view corridors are managed and conserved. Enhanced pedestrian access and viewing areas could take better advantage of these qualities.

Key Considerations

The following key policies, extracted from the HMP, should be used to inform the design:

Design Integrity

- Maintain the structural and design integrity of the bridge and its approaches, to ensure its long-term conservation as an integral aspect of the heritage values of the designed landscape of the Lake Burley Griffin study Area. (Policy C2-1)
  - The bridge provides an ideal opportunity to provide interpretation of the heritage values of the bridge and its setting on Lake Burley Griffin.
- Maintain the white colour of the concrete of the bridge. (Policy C2-1.1)
- Maintain strip lighting in the bridge railings in good working order. (Policy C2-1.2)
- Maintain railings in good order to prevent cumulative degradation through corrosion... (Policy C2-1.3)
- Undertake regular monitoring of the structural integrity of the bridge and the state of conservation of its component materials... (Policy C2-1.4)
- Maintain good pedestrian and cycling access to the bridge, including good directional signage and links to pedestrian/cycling route. (Policy C2-1.5)

Views

- Conserve and manage the significant views and vistas from the bridge to the surrounding landscape. (Policy C2-2)

Interpretation

- Interpret the heritage values of the bridge in the context of the Lake Burley Griffin Study Area. (Policy C2-3)
  - Determine appropriate locations on or near the bridge to install interpretive media. Use the bridge as a node for the location of low-key interpretive media. (Policy C2-3.1)
  - Deliver key messages about the heritage values of the bridge and its setting on Lake Burley Griffin, including the engineering values of the bridges and the lake and the history of their design and construction. (Policy C2-3.2)
  - Interpretation around Lake Burley Griffin should feature a consistent and distinctive graphic style to be integrated into an interpretive trail around the lake. (Policy C2-3.3)

Stakeholder Consultation

- Consult with stakeholder communities when change is proposed which might affect the heritage values. (Policy C2-3.4)
  - Seek the input of those involved in the design and construction of the Scrivener Dam and bridges in major decisions about their future management. (Policy C2-4.1)
  - Undertake an oral history program to record the memories of those individuals involved in the design and construction of the dam and bridge. (Policy C2-4.2)

3.3.2 Parliament House Vista

The Commonwealth Avenue Bridge defines the western edge of the Parliament House Vista, which is also listed on the Commonwealth Heritage List.

Parliament House Vista HMP

The Parliament House Vista Heritage Management Plan contains a range of policies relevant to the Commonwealth Avenue Bridge Renewal Project. Whilst the bridge itself is located outside the heritage curtilage, part of the land at either side of the bridge is included in the listing.

Key Considerations:

- Any work proposed within the curtilage of the Commonwealth listed Vista must be carefully designed to minimise visual impacts.

3.3.3 Commonwealth Avenue Bridge

Whilst the Commonwealth Avenue Bridge is not currently listed as an individual Heritage Item, it was assessed by GML Heritage in 2020 and determined to reach the threshold for listing on the Commonwealth Heritage Register. As such any changes should be carefully considered to minimise heritage impacts.

Commonwealth Avenue Bridge Heritage Assessment

- Conservation principles: Conserve cultural heritage significance and minimise impacts on heritage values and fabric in accordance with the 'Australia ICOMOS Charter for Places of Cultural Significance'.
- Specialist advice: Seek advice from a qualified heritage specialist during all phases of a proposed project from feasibility, concept and option planning stage; detailed design; heritage approval and assessment; through to construction and finalisation.
- Documentation: Prepare a Statement of Heritage Impact (SOHI) to assess, minimise and prevent heritage impacts as part of the assessment and approval phase of a project.
- Maintenance and repair: Undertake annual inspections and proactive routine maintenance works to conserve heritage fabric in accordance with the 'Minimum Standards of Maintenance & Repair'.
- Movable heritage: Retain in situ and care for historic contents, fixtures, fittings, equipment and objects which contribute to cultural heritage significance. Return or reinstate missing features or relocated items where opportunities arise.
- Aboriginal, archaeology and natural heritage: Consider all aspects of potential heritage significance as part of assessing and minimising potential impacts, including Aboriginal, archaeology and natural heritage.

Key Considerations:

- Retain ongoing historical use as a major road, with pedestrian and cycle access.
- Retain significant fabric including original features of the 1963 construction.
- Impacts to significant fabric should be minimised.
- Impacts to the significant setting of the bridge should be minimised.
- Impacts to significant views to and from the bridge should be minimised.
- A Statement of Heritage Impact (SOHI) is required to accompany any proposed change to the Bridge.

3.3.4 Canberra Central Parklands

The Canberra Central Parklands, which includes Commonwealth Park, are not heritage listed, however, the NCA commissioned the preparation of a HMP, to meet *EPBC Act* requirements, to provide more detailed guidance on heritage management than that contained in the Parliament House Vista HMP. It is important that any proposed changes have minimal impact on the values identified in this HMP.

3.3.5 Certain Roads of National Land in Central Canberra

Commonwealth Avenue was assessed in the Certain Roads of National Land in Central Canberra Heritage Management Plan. Whilst not individually listed it is important that any proposed changes have minimal impact on the values identified in this HMP.

3.3.6 Heritage Values

Whilst the bridge has no statutory heritage status in its own right it has been assessed as having heritage values as part of the heritage management plan for Lake Burley Griffin and Adjacent Lands and is located adjacent to the Parliament House Vista. Heritage values have also been identified in the Commonwealth Avenue Bridge Heritage Assessment. These values were summarised by Duncan Marshall to relate to:

- the importance of the bridge in the history of the development of Canberra as the national capital and realisation of the city plan;
- the bridge as an important element in the context of the landscapes of the lake and Parliament House Vista, including prominent views;
- a range of creative and technical qualities, both in the design of the bridge and in its contribution to the framing of the Parliament House Vista;
- the potential contribution of the bridge to larger heritage places and their social values related to the Canberra and Australian communities; and
- the contribution of the bridge to larger heritage places and their special associations with individuals of importance in Australia's history.

The relevant heritage values of the Vista include those which relate to the landscape and trees associated with the approaches to the bridge.

19: Duncan Marshall, Heritage Impact Statement, Proposed Strengthening and Upgrade Works to Commonwealth Avenue Bridge Upgrade, 2019, p.1.

3.3.7 Constraints Arising from Heritage Significance

The following constraints relating to heritage significance should be taken into consideration:

Aboriginal Heritage

Whilst no known Aboriginal sites are located within the study area, it is recommended that the NCA carry out a due diligence assessment to determine whether Aboriginal cultural values would likely be affected by the works. Under the EPBC Act, the '*Engage Early Guideline 2016*' and '*Ask First*' should be referred to.

The following constraints could arise from Aboriginal archaeology:

- If archaeologically or culturally significant Aboriginal sites are located, conservation should be considered. Any impacts should be undertaken in consultation with the Aboriginal stakeholders.
- If Aboriginal skeletal material is located, conservation in situ may be required as a reflection of its significance to Aboriginal people.
- Aboriginal cultural themes should be a central part of any heritage interpretation approach.

Non-Aboriginal Archaeology

The following constraints arise from Non-Aboriginal archaeological items located within the site, in the landing sites:

- An archaeological assessment would be required prior to impacts to provide a detailed appraisal of archaeological potential and significance within the site.
- Impacts to significant archaeology should be avoided where possible. Intact State significant archaeology should be conserved in situ where ever possible.

Built Heritage and Setting

The cultural significance of heritage items located within and adjacent to the Commonwealth Avenue Bridge site should be respected in accordance with the Parliament House Vista and Lake Burley Griffin and Adjacent Lands Heritage Management Plans. The following constraints relating to heritage significance should be taken into consideration:

- Any alterations or additions to the bridge and adjacent land should be in accordance with the policies contained in the Lake Burley Griffin and Adjacent Lands Heritage Management Plan, Parliament House Vista Heritage Management Plan, Heritage Management Plans for heritage listed adjacent sites and this Heritage Framework.
- Fabric or spatial qualities identified to be of exceptional or high significance should be retained and conserved as part of any future development of the bridge.
- Any fabric or spatial qualities that do not contribute to the cultural significance of the place could be changed as required to maintain the current function of the bridge.
- Changes should not be made based on aesthetic reasons only.
- Any new development should adopt a form and fabric that respects the cultural significance of both the bridge itself and heritage items in the vicinity including their setting.
- Any development within the site should take into account the significant views and vistas associated with heritage items within and adjacent to the site.
- Advice from a qualified heritage specialist should be sought during all phases of any future redevelopment of the site.
- Generally, any changes to the bridge or its setting should be supported by a SOHI as part of the assessment and approval phase.

3.3.8 Significant views

The Commonwealth Avenue Bridge links Capital and City Hills and provides a major active transport link and organisational axis within the city.

Significant views of, and from, the bridge enable a greater appreciation of the lakeside setting within Canberra - the bridge spans Lake Burley Griffin and defines the western edge of the Parliament House Vista.

The Commonwealth Avenue Bridge offers views of many of Canberra's important cultural and civic institutions and landmarks.[20]

The bridge is used by tourists to view and take photos of these places, along with the landscape setting.

The Commonwealth Avenue Bridge forms an iconic landmark in its own right that is captured in many views of the Parliamentary Triangle.

These views should be taken into consideration if any changes are proposed to the bridge.

20: Lahz Nimmo, Commonwealth Avenue Bridge Upgrade, November 2019, p.10.

Constraints Relating to Significant Views

The following constraints relating to significant views should be taken into consideration:

- Existing views from public spaces around Lake Burley Griffin are considered to be the minimum.
- Views to and from the Commonwealth Avenue Bridge should be respected. These views should be maintained and where possible enhanced.
- The Commonwealth Avenue Bridge defines one side of the Parliament House Vista. The visual connection between heritage items within and adjacent to the site should be maintained. This includes both immediate views and distant views.
- The visual qualities of the setting of the place should be maintained and enhanced where possible. Views to the sky should be enabled and views across the lakeside park should be maintained to uphold the visual connection with the lakeside setting of the bridge.
- Any changes to the bridge and its surrounding landscape should consider the cumulative impact on views.

Opportunities Relating to Significant Views

The following opportunities relating to significant views should be taken into consideration:

- There is an opportunity to enhance significant views from the lakeside to the Commonwealth Avenue Bridge through sensitive landscape treatments.

The Commonwealth Avenue Bridge defines the western edge of the Parliament House Vista curtilage.

The Commonwealth Avenue Bridge offers views of many of Canberra's important cultural and civic institutions and landmarks including:

	NAME OF ITEM
1	National Museum of Australia
2	Henry Rolland Park
3	Captain Cook Memorial Water Jet
4	National Library of Australia
5	Questacon — The National Science and Technology Centre
6	Old Parliament House
7	Commonwealth and Reconciliation Places
8	National Portrait Gallery
9	High Court of Australia
10	National Gallery of Australia
11	National Carillon
12	Parliament House

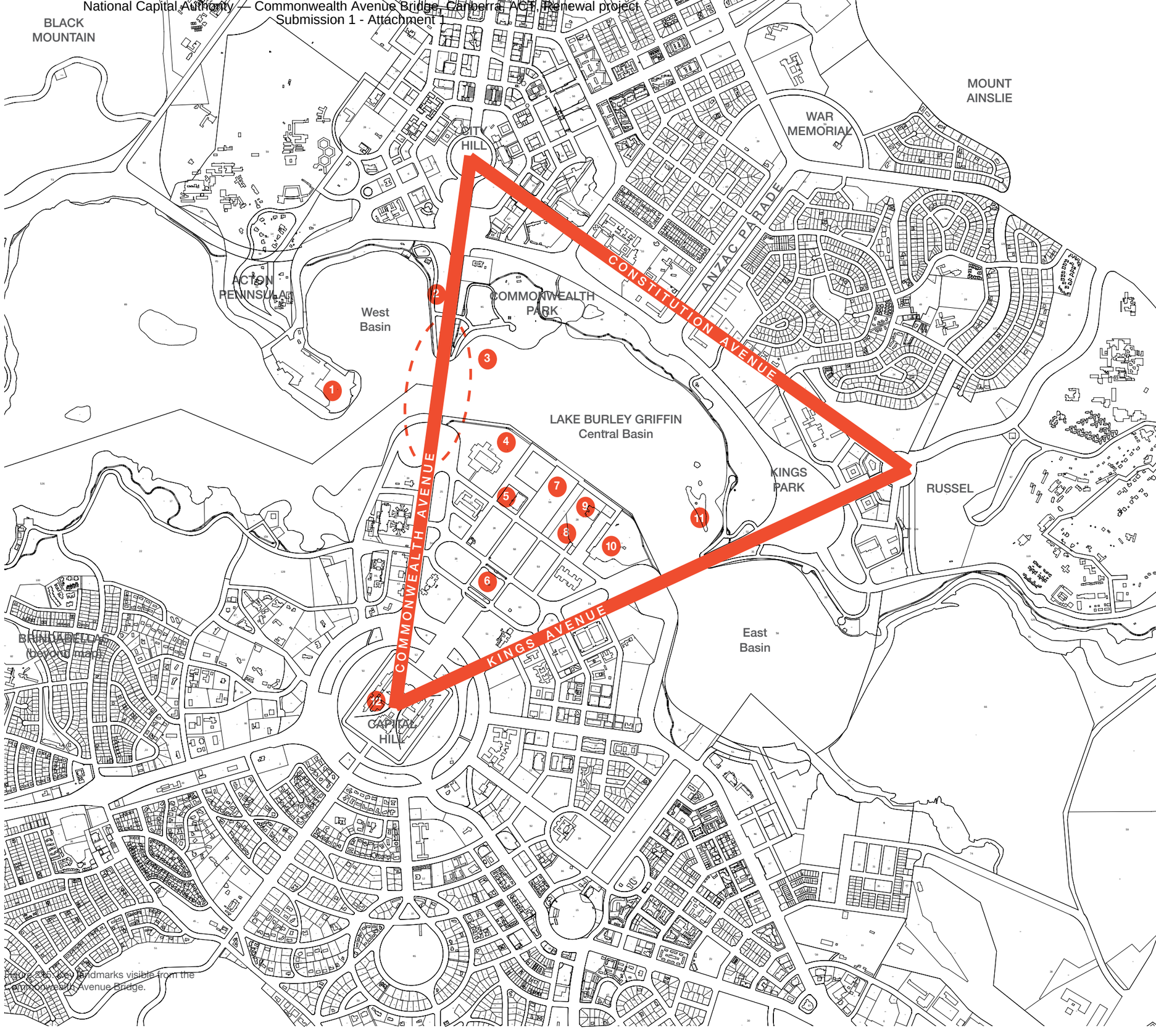


Figure 2.3: Key landmarks visible from the Commonwealth Avenue Bridge.

3.4 Design

3.4.1 Opportunities Relating to Design

Any new element associated with the Commonwealth Avenue Bridge should aim to minimise heritage impacts on original fabric, and the setting and views. The following design opportunities arise in relation to the renewal project from the protection of the significant heritage values of the site:

- Part of the site is located outside the curtilage of Lake Burley Griffin and Adjacent Lands and Parliament House Vista listings and hence have a greater tolerance for changes.
- Potential to enhance key views to the Commonwealth Avenue Bridge through landscape upgrades at either end.
- Potential to remove built elements of 'Little' or 'Intrusive' significance to improve the presentation of the bridge and views to and from it.
- Potential to enhance interpretation of the history and significance of the site, including Aboriginal cultural significance.
- Potential for Aboriginal design principles to help inform future works within the landscaped areas at either end of the bridge. Also refer to *Indigenous Design Charter* prepared by Deakin University and the *Designing with Country* Guidelines prepared by the NSW Government Architects Office.

3.4.2 Sustainable Design

The NCA aims to incorporate sustainability into their project design and decision making. A number of sustainability principles have been developed for the project, one of which is cultural heritage. This principle promotes the protection and celebration of the heritage significance, including Aboriginal cultural values.

A desired outcome is for the project to deliver a place which includes positive and ongoing indigenous engagement whilst promoting, enhancing and minimising impacts to the physical and intrinsic heritage values of the place.

3.4.3 Principles for New Design

The Commonwealth Avenue Bridge Renewal Project offers an opportunity to improve the amenity that the bridge offers for cyclists and pedestrians whilst also upgrading the associated public domain at either end.

A detailed analysis of both the site and its context should underpin any new work. This analysis should also take into account an understanding of the heritage significance of the place and the relative significance of the components of built fabric and their tolerance for change.

New development in this highly significant context should aim to preserve the special qualities that contribute to the 'sense of place' in a way that respects the old while embracing the new, setting up a lively dialogue between the two. Well-designed, the upgrade will achieve contemporary standards and improve pedestrians' and cyclists' experience, whilst also enhancing the heritage setting and the social value of the place.

Design in context

Design in Context (2005), prepared by the NSW Heritage Office and the Australian Institute of Architects NSW Chapter is an excellent general guide for new infill developments in heritage environments. It provides a methodology for analysis of the context and the relationship between old and new elements in terms of character, scale, form, siting, materials, colour and detailing, and aims for design excellence.

In summary, the following principles apply:

Character

The character of a place is shaped by many contributing factors including topography, distinctive landscape qualities, street and subdivision patterns, density, site coverage, views, vistas, skylines and land uses.

Built elements also shape the character of a place through their heights, position, date and style, materials and details, proportions of openings, craftsmanship, and solid to void ratios, as do local cultural traditions and the uses of a place.

Siting

New elements in a historic context should be complementary to the streetscape and the urban grain of the area, responding to the patterns and scale of other built forms to ensure the proposal results in the creation of quality urban spaces between the old and the new. The siting of new elements should retain key views, natural features of significance such as trees and landscaped elements and archaeological remains.

Scale

The relationship between new elements and their context should be considered in terms of the scale of surrounding built elements – their wall heights, modulation and façade rhythms, massing, density, proportions and relationship to the ground and street plane.

Recognising the predominant scale of the context and responding appropriately can help reduce the visual impact of new structures in an historic environment.

Form

The relationship of form between new structures and existing built elements should be carefully considered in the design process. Whether a likeness or distinction is sought between the old and the new, the new forms should relate to the heritage elements in a positive way.

Materials and colour

New infill elements should recognise the characteristic materials, textures and colours of the surrounding area and respond to them. They need not be copied but rather used as a point of reference and reinterpreted in either a considered harmonious, complementary or contrasting way. Light and shadow affect how materials and colours are perceived and this should be considered in the design process.

The quality of the new materials should be commensurate with those of existing built elements in the surrounding area – as good or better - and the design should aim to set a benchmark.

Detailing

Contemporary details can reinterpret the traditional details that contribute to the heritage character of a place, to create complementary relationships between new and old elements and provide a level of visual interest. This principle can be used for both built elements and landscape elements. Analysis of existing details can help inform the language of compatible new elements, without imitation. Similarly the overall texture of the building – the amount of modulation or detail can be an important factor in ensuring a positive relationship with an adjoining heritage building.

3.4.4 Heritage Design Principles

An analysis of the site and its context along with the relevant Heritage Listings and Heritage Management Plans leads to the following heritage design principles which would apply to the proposed renewal of the Commonwealth Avenue Bridge. The new elements should not be eye catching, rather sympathetic and compatible, as the Bridge defines the western edge of the Parliament House Vista. New elements should generally defer to the original elements of the bridge, reading as secondary elements, to minimise heritage impacts:

Character

– Complementary

New elements should be complementary to the original built form.

– Contemporary

New elements should be identifiably new upon closer inspection to avoid confusion between old and new fabric.

– Simple, elegant aesthetic

A simple, elegant aesthetic should be adopted for new elements which complements the original design of the bridge.

– Horizontal emphasis

New elements should reinforce the horizontal emphasis of the original bridge when viewed from afar.

– Mirrored pair - singular expression

The existing bridge comprises a pair of mirror reversed matching elements which read together as one. This should be retained in the design of new elements.

– Simple, transparent balustrades.

The existing balustrades are simple repetitive elements which have a high degree of transparency and read as secondary elements to the primary form of the concrete bridge. This should be retained in the new design.

– Landscape elements to respond to surrounding context

The landscape design of the approaches should be recessive in respect to the bridge and the Parliament House Vista.

Siting

– Minimise impacts on views

Any changes to the bridge and the landscape approaches should be sited to avoid or minimise impacts on key views.

– Connect to surrounding landscape

The landscape approaches should be carefully sited to connect to the surrounding landscape.

Scale

– Bridge edge condition

The new bridge edge condition should be similar in scale to the existing edge condition, and taper to create similar shadows on the vertical face, to minimise impacts on views.

– Balustrade and crash barrier heights

The height of balustrades and crash barriers should be minimised to minimise visual impacts. Lowering the speed limit would lower the required height of crash barriers. NCA to assess risks associated with alternative options.

Form

– Linear horizontal emphasis

The linear horizontal emphasis of the bridge should be retained, with integrated lighting in the balustrades.

– Bridge edge condition

The renewed edge condition should be similar to the existing edge condition, with the overall form of bridge widened.

– Minimise vertical elements

The bridge pylons should remain the only vertical elements on the bridge. Vertical light poles should be avoided on the bridge, and located as far as possible from the pylons if required on the land north and south of the abutments.

– Balustrades and crash barriers

Finer elements such as balustrades and crash barriers should be designed to read as secondary elements to the primary form of the bridge.

Materials and colour

– Bridge extension

The material of the bridge extension should be light in colour to respond to the existing white precast with exposed Quartz aggregate.

– Balustrades and crash barriers

The existing balustrades and crash rails should also be light in colour - the existing are white and silver.

– Abutments

The abutments are constructed of precast concrete with dark aggregate and Tarana granite cladding. This should be retained and conserved.[21] A similar palette of materials should be used for any alterations.

– Pylons

The existing pylons feature white painted concrete and Tarana granite. This should be retained and conserved.

Detailing

– Simple contemporary detailing

The detailing of architectural elements should be simple and contemporary, and based on an understanding of the original design intent.

– Dialogue between old and new

The detailing of new elements should be based on a clear understanding of the original detailing. Establish a dialogue between the old and the new fabric through detailing.

– Concealed engineering upgrades

Engineering upgrades required for bridge strengthening should be concealed where possible. Where exposed a simple clean aesthetic should be adopted, which is co-ordinated with the architectural response.

21: Note 'Desert Brown' granite is similar in appearance and is available from Esperance in Western Australia if repairs are required and Tarana is not available.

3.5 Heritage Interpretation

Heritage interpretation is a means of sharing and exploring cultures and histories within communities, and is an integral part of the experience of significant heritage places. Through the use of a range of media and techniques, accessible to target audience groups, heritage interpretation can:

- Reveal meanings and significance
- Provide information to enhance understanding
- Make explicit a sense of place
- Explore relationships and histories that connect people and place
- Act as a catalyst for community curiosity and engagement.

Interpretation can highlight both the tangible and the intangible. Heritage interpretation should encompass both Aboriginal and non-Aboriginal heritage, values and histories of the site, be tailored to the targe audience and located where it is accessible but unobtrusive.

Aesthetic and Social Values

The following themes were identified by GML from analysis of the data collected through the investigations of community - held aesthetic and social values of Commonwealth Avenue Bridge:

- Everyday Life in Canberra - Commonwealth Avenue Bridge forms an essential piece of infrastructure that facilitates and supports movement around Canberra for work, recreation and leisure activities.
- Architectural expression - Commonwealth Avenue Bridge is appreciated for its architectural, technical and design qualities.
- Views and the Canberra landscape - Commonwealth Avenue Bridge is appreciated for its contribution to the Canberra landscape and its ability to provide a visual and symbolic connection to the wider Canberra landscape.
- A place of history and memories - Commonwealth Avenue Bridge forms an integral aspect of Canberra's history and the Canberra community's sense of identity.
- A Canberra landmark - Commonwealth Avenue Bridge is recognised as a distinctive landmark that contributes strongly to what makes Canberra uniquely Canberra.
- Connecting Canberra - Commonwealth Avenue Bridge is recognised as a physical and symbolic link which connects important aspects of Canberra and its community.[22]

Historic Themes

Historic themes are used in interpretation as a tool to organise information and to determine the core messages and stories to be communicated.

In order to place the history and significance of a place within the broader Australian context, it is important to be able to use an established and widely-recognised framework of historic themes to group key historical activities or events to better contextualise their role in the cultural development of Australia.

The Australian Heritage Commission published a national framework of historic themes in 2001. These provide the over-arching framework for a sub-set of local themes, which generally relate to site specific local sub-themes.

The following table connects the Australian, State and Local Themes with key stories related to the site.

22: GML Heritage, Commonwealth Avenue Bridge, HMP, p.41.

AUSTRALIAN THEME (ABBREV)	SUB THEMES	SITE SPECIFIC THEMES/ STORIES
1. Environment Tracing the evolution of a continent's special environments	1.1 Tracing climatic and topographical change	– Bridging the Molonglo River – Creation of Lake Burley Griffin
2 Peopling Australia	2.1 Living as Australia's earliest inhabitants	– Aboriginal culture
3. Economy Developing local, regional and national economies	3.2 Constructing capital city economies	– Design of Canberra
	3.3 Surveying the continent – 3.3.5 Laying out boundaries	– Laying out the bridge
	3.8 Moving goods and people – 3.8.7 Building and maintaining roads	– Construction of the Bridge
	3.14 Developing an Australian engineering and construction industry – 3.14.1 Building to suit Australian conditions – 3.14.2 Using Australian materials in construction	– Design and construction of the Bridge
4. Settlement Building settlements, towns and cities	4.1 Planning urban settlements – 4.1.4 Creating capital cities – 4.2 Supplying urban services (power, transport, fire prevention, roads, water, light and sewerage)	– A place of history and memories – Connecting Canberra – Parliamentary Triangle
5. Working	5.1 Working in harsh conditions – 5.1.2 Coping with dangerous jobs and workplaces	– Construction of the Bridge
7 Governing	7.1 Governing Australia as a province of the British Empire	– Naming of the Bridge
	7.3 Making City-States	
	7.4 Federating Australia	
	7.6 Administering Australia – 7.6.1 Developing local government authorities – 7.6.12 Conserving Australia's heritage	– Role of NCDC, NCA – Heritage values
	7.8 Establishing regional and local identity	– A place of history and memories
8. Culture Developing cultural institutions and ways of life	8.1 Organising recreation – 8.1.3 Developing public parks and gardens	– Everyday Life in Canberra
	8.10 Pursuing excellence in the arts and sciences – 8.10.4 Designing and building fine buildings – 8. 10.5 Advancing knowledge in science and technology	– Architectural expression – Views and the Canberra landscape – A Canberra landmark – Connecting Canberra

3.6 Key References

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ACT Heritage

National Archives of Australia

National Library of Australia,Trove

Figure 216: 1964.Commonwealth Avenue Bridge spanning Lake Burley Griffin, ACT.

Source: National Archives of Australia, A1200, L46447, Item ID 11701643.

4.0
Appendix 1 - Heritage Policies

4.1 Introduction

The Lake Burley Griffin and Adjacent Lands—Heritage Management Plan, Volume 1, Lake Burley Griffin—Final Report, October 2009 includes general conservation policies relevant to the Project, whilst Volume 4 - Dam and Bridges contains Specific Policies related to the Commonwealth Avenue Bridge.

The Commonwealth Avenue Bridge also defines the western edge of the Parliament House Vista.

The following policies have been extracted from the relevant Heritage Management Plans and should be used to guide the design of any changes to the bridge to minimise heritage impacts. Key policies relevant to the Commonwealth Avenue Bridge Renewal Project are highlighted orange.

4.2 Lake Burley Griffin and Adjacent Lands—Heritage Management Plan, Lake Burley Griffin—Final Report, October 2009 (Draft)

POLICIES	ACTIONS	PRIORITY	TIMING
VOLUME 1 - GENERAL CONSERVATION POLICY			
1. Heritage Conservation			
1.1 Conserve the identified heritage values of the Lake Burley Griffin Study Area in compliance with the requirements of the *EPBC Act, the Australian Capital Territory (Planning and Land Management) Act 1988 and the Nature Conservation Act 1980 (ACT)* (in accordance with the 1998 MOU).	1.1.1 The NCA should formally adopt this HMP as the basis for future management of the heritage values of the Study Area.	High	By 2011
	1.1.2 The identified heritage values of the Study Area (shown in Table 1.1) will be the principal basis for all future planning, management and impact assessment of activities or actions.	High	Immediately
	1.1.3 Any proposal or action that will or is likely to have a significant impact on the environment including the identified Commonwealth and National heritage values of the Study Area (Table 1.1) will require a referral to the Minister for Environment, Heritage and the Arts.	High	As required
1.2 Conserve the identified heritage values of the Lake Burley Griffin Study Area in line with this Heritage Management Plan (HMP).	1.2.1 All the components of the Study Area (identified in Table 1.1) should be added to the NCA's register of places of Commonwealth heritage value, in accordance with s341ZB (1) of the *EPBC Act*.	High	By 2011
	1.2.2 The NCA should consider the nomination to the Commonwealth Heritage list of all the components of the Study Area, identified in Table 1.1, preferably as a group making up a significant cultural landscape.	Medium	By 2014
	1.2.3 The NCA should consider the nomination of the Lake Burley Griffin Study Area to the National Heritage list. This consideration should involve a review of an appropriate curtilage for a National list nomination, taking into account the need for the integrated management of central Canberra's significant cultural landscape.	Medium	By 2014
1.3 Implement the policies and actions set out in this HMP, in line with the identified priority and timing guidelines.	1.3.1 Implementation actions are set out below in Section 5 Documentation, Monitoring and Review.	High	Immediately
1.4 All planning or strategic documents or proposals with the potential to affect the Study Area should refer to this HMP for primary guidance on the management of its heritage values.	1.4.1 Promote a holistic management approach to the Study Area by ensuring that proposals are assessed in terms of their potential to impact on the heritage values of the Study Area as a whole. The aim of this policy is to promote a co-ordinated rather than a piecemeal approach to management.	Medium	As required
	1.4.2 Ensure all proposals for development or activities around the foreshore of the lake are assessed in terms of their potential to impact upon (positively or negatively) the identified heritage values of the Study Area.	High	As required
	1.4.3 Ensure new developments contribute to the qualities and heritage values of the Study Area as a designed, symbolic landscape of national significance.	High	As required

POLICIES	ACTIONS	PRIORITY	TIMING
1.5 Co-ordinate the heritage management of the Study Area with the heritage management plans for places and landscapes which have an integral relationship with the heritage values of the Study Area.	1.5.1 Co-ordinate this HMP with the heritage management plans for: Blundells' Cottage, High Court and National Gallery Precinct, Carillon and Aspen Island, Central Parklands, the National Library, Parliament House Vista, Australian War Memorial and Old Parliament House. Also ensure co-ordinated management with other places with heritage values strongly linked to the Study Area including Lennox Gardens, Government House, Westbourne Woods, Weston Park, Yarralumla Nursery, Black Mountain, Acton Peninsula, Commonwealth Place, Bowen Park, Kingston foreshore, Jerrabombera wetlands, Grevillea Park and Molongolo Reach.	Medium	As required

POLICIES	ACTIONS	PRIORITY	TIMING
1.6 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.	1.6.1 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.	High	Immediately
	1.6.2 Conserve the visibility of the waters of the lake in views from within Canberra, including the retention of open views to the water from roads and other public use areas (Commonwealth Avenue, Parkes Way, the cycle paths) as well as local secluded vistas from near the lake shore.	High	Immediately
	1.6.3 Maintain the water level and water quality of the lake in line with the benchmark for 'Protection of freshwater aquatic systems' in the LBG Water Quality Management Plan, 2006.	High	In accordance with the Plan
	1.6.4 Conserve the informal, river-like form of Westlake as a contrast to the more formal basins.	High	Immediately
	1.6.5 Respect the relationship between the vertical and horizontal design elements, including the bridges, Carillon and Captain Cook Water Jet.	High	Immediately
	1.6.6 Conserve the historic plantings of deciduous trees around the foreshores, planted to reflect spring and autumn colour in the waters of the lake.	High	Immediately

POLICIES	ACTIONS	PRIORITY	TIMING
1.6 (continued)	1.6.7 Conserve the relationship between the lake and the National Library, High Court of Australia, National Gallery of Australia and the National Museum of Australia, where the buildings contribute to the lake's setting and, in turn, the lake provides the setting for the buildings.	High	Immediately
1.7 Recognise the Lake Burley Griffin study area as a layered cultural landscape, the heritage values of which reflect Indigenous use and cultural values; early European use and development; the Griffin plan; the Holford plan and subsequent phases of design and construction by the NCDC; and the remnant natural environment.	1.7.1 Conserve the diverse landscape character of the Study Area, including the contrasts between the formal and informal landscapes, and native and exotic vegetation.	High	Immediately
	1.7.2 Conserve the overall form and shape of the lake which strongly reflects the Griffin plan.	High	Immediately
	1.7.3 Conserve the islands and areas of hard and soft edge treatments reflecting the period of design and construction of the lake.	High	Immediately
	1.7.4 Conserve the evidence (including archaeological) of past historic and Indigenous use of the landscape including the identified Indigenous sites, the remains of the former Westlake settlement site, and Sewer Vent No. 1.	Medium	As required
	1.7.5 Rigorously manage new development on Stirling Ridge and Attunga Point in order to conserve the aesthetic and natural values of the landscape, topography and vegetation and its importance in significant views.	High	As required
	1.7.6 Conserve and actively manage the historical and aesthetic values of Lindsay Pryor Arboretum and Roman Cypress Hill.	High	By 2011
1.7 (continued)	1.7.7 Rigorously manage new development on the Yarramundi Peninsula in order to conserve the historical, aesthetic and natural values of the landscape, topography and vegetation and its importance in significant views. In particular manage the Peninsula to maintain the 'natural' river-like qualities of Westlake.	Medium	As required
1.8 Conserve and manage the aesthetic values of the Study Area which are particularly valued by the community.	1.8.1 Conserve and manage the 'quiet and still' qualities of the Study Area, particularly in areas such as Central Basin, Tarcoola Reach and Yarramundi Reach.	High	Immediately
	1.8.2 Conserve the role of the lake as the setting for significant national institutions, particularly the nature of its reflective qualities.	High	Immediately
	1.8.3 Conserve and manage the high quality parkland setting of the lake to a high standard.	High	Immediately
	1.8.4 Manage the setting of the lake to retain seasonal colour, natural qualities and diversity of character.	High	Immediately
	1.8.5 Retain views to the surrounding hillsides as well as their vegetated, natural character.	High	Immediately
1.9 Conserve and manage the creative and technical heritage values of the Study Area.	1.9.1 Conserve the evidence of engineering and technical excellence in the Study Area including the Commonwealth Avenue and Kings Avenue Bridges and Scrivener Dam.	Medium	As required
	1.9.2 Continue to maintain to a high standard the structural and design integrity of the bridges and dam and their settings, to ensure their long-term conservation as an integral aspect of the designed landscape of the Study Area.	Medium	Annually
	1.9.3 Conserve the geometry of Griffin's plan, which has been emphasised by the distinctive plantings and parklands designed by Holford and the NCDC, including the contrast of naturalistic and formal designs around the foreshore.	High	As required

POLICIES	ACTIONS	PRIORITY	TIMING
1.10 Conserve and manage the Indigenous heritage values of the Study Area.	1.10.1 Recognise Indigenous heritage values which arise from sites, places and the interrelation between sites, places and landscapes.	High	By 2011
	1.10.2 Add the identified Indigenous heritage places of Stirling Ridge, Yarramundi Peninsula and the submerged Indigenous sites to the NCA's register of places of Commonwealth Heritage value, in accordance with s341ZB (1) of the *EPBC Act*.	Medium	As required
	1.10.3 Works in areas of Indigenous archaeological significance may require archaeological assessment and management in consultation with appropriate Indigenous communities and relevant authorities.	Medium	As required
	1.10.4 Recognise the potential for works or activities to impact upon previously undetected places of Indigenous heritage value and follow the assessment and notification procedures of the *Heritage Act 2004 (ACT).*	Medium	As required
	1.10.5 Prepare documentation to be included with Service Contracts which notifies contractors of Indigenous heritage values and potential values of relevant areas and ensures effective implementation of these policies by all contractors and relevant authorities.	High	By 2011
	1.10.6 Note the location of Indigenous heritage places on fire control plans as assets requiring protection and management.	Medium	By 2011

POLICIES	ACTIONS	PRIORITY	TIMING
1.11 Conserve and manage the natural heritage values of the Study Area.	1.11.1 Conserve the natural heritage values of Stirling Ridge and Attunga Point. The Button wrinklewort is a listed threatened species under section 18 of the *EPBC Act*; and Yellow box—Red gum grassy woodland and natural temperate grassland are both listed as threatened ecological communities under section 18A of the Act.	High	Immediately
	1.11.2 Conserve the natural heritage values of the Yarramundi Peninsula: the natural temperate grassland and grassland habitat for the Striped legless lizard (declared threatened species under the *Nature Conservation Act 1980 (ACT)* and threatened species under the *EPBC Act)* and the Perunga grasshopper (declared threatened species under the *Nature Conservation Act 1980*).	High	Immediately
	1.11.3 Conserve and manage the lake as an aquatic habitat comprising the waterbody, aquatic fauna, vegetation and lake bed.	Medium	Immediately
	1.11.4 Conserve and manage the wetland habitat for threatened and migratory bird species provided by Warrina Inlet, Accacia Inlet and Yarramundi Inlet wetlands.	Medium	Immediately
	1.11.5 Conserve and manage the habitat values provided by the lake waterbody draw-down zone (foreshore areas).	Medium	Immediately
	1.11.6 Prepare documentation to be included with Service Contracts which notifies contractors of the natural heritage values of relevant areas and ensures effective implementation of these policies by all contractors.	High	By 2011

POLICIES	ACTIONS	PRIORITY	TIMING
1.12 Removal or damage to significant aspects of the place.	1.12.1 Removal or works which would adversely impact on places of identified heritage value should only be permitted where: • the work makes possible the recovery of aspects of greater heritage value; • the work helps to ensure the security and viability of the place; • there is no feasible alternative (eg to meet safety or legal requirements); • full assessment of alternative options has been undertaken to minimise adverse impacts.	High	As required
1.13 Authenticity of the place.	1.13.1 Ensure that the integrity of fabric of heritage value from different phases and periods of the cultural landscape is maintained, managed and interpreted.	High	As required
2. Interpretation			
2.1 An Interpretation Plan should be prepared for the Study Area.	2.1.1 Interpret the historic, Indigenous and natural heritage values of the Lake Burley Griffin Study Area to local, national and international audiences—using a range of media including published material, online material and signage.	Medium	By 2011
	2.1.2 Consult and involve stakeholders in the development of the Interpretation plan and specific interpretation initiatives.	Medium	By 2011 and as required
	2.1.3 The specific policies identify nodes, themes and locations for on-site interpretation.	N/A	
2.2 Develop an Indigenous heritage interpretation plan in partnership with appropriate community representatives.	2.2.1 In partnership with the local Indigenous community, investigate how the Indigenous cultural values of the Molongolo River Valley (prior to construction of the lake) could be recognised and incorporated into the public environment of the city (examples may be the erection of signage, public art, and use of Aboriginal place names).	Medium	By 2011
	2.2.2 Interpret the following aspects of the Indigenous cultural landscape on signage at the edge of the lake, or incorporated into the exhibition at Regatta Point: – the original course of the Molonglo in relation to Lake Burley Griffin; – the role of the Molonglo corridor to Indigenous people; and – the current role of Indigenous people in protecting ACT heritage sites. Involve the Indigenous community in the design of all signage and in approving the cultural information displayed for viewing by the wider community.	Medium	By 2014
2.3 A variety of methods should be used to interpret the major aspects of the heritage values of the Study Area, in consultation with the ACT government.	2.3.1 Develop themed 'heritage trails' around Lake Burley Griffin, utilising brochures, online or downloadable information, as well as signage, focusing on significant themes of the Study Area such as: – the Griffin plan; – modernist design; – engineering heritage; – Indigenous cultural values; – the historical cultural landscape; and – the natural values of the landscape.	Medium	By 2014
	2.3.2 On-site interpretation around Lake Burley Griffin should feature a consistent and distinctive graphic style to form a recognisable interpretive trail around the lake.	Medium	As required

POLICIES	ACTIONS	PRIORITY	TIMING
3. Use and Access			
3.1 Provide the public with free and open access to the lake and foreshores.	3.1.1 Encourage public access to the lake for a variety of non-motorised, water-based recreational uses which do not impact on other heritage values.	High	Immediately
	3.1.2 Continue to use the lake as a stage or setting for large public events (which are temporary and do not impact on other heritage values).	Low	Immediately
	3.1.3 Provide opportunities for organised and informal community and family gatherings around the lake.	Medium	Immediately
	3.1.4 Control recreational activities on the lake to minimise noise and disruption to the water surface, avoid impacts on the shore and shore users and minimise conflicts with other lake users.	High	Immediately
3.2 Ensure the lake is available and accessible for a range of uses at all times.	3.2.1 Manage water quality to enable recreational uses including swimming and boating.	High	Annually
	3.2.2 Retain current existing points of access to the lake for recreation (boat ramps and swimming area).	Low	Annually
	3.2.3 Avoid the introduction of new uses that require closure of the lake and foreshores (or parts thereof) to public access, ie for private or corporate events.	High	As required
3.3 Provide and facilitate access to significant places for appropriate Indigenous community members for the conduct of traditional or culturally significant activities.	3.3.1 Provide a point of contact to Indigenous stakeholders requesting access and establish access protocols.	High	Immediately
3.4 Manage use of and access to Stirling Ridge and Attunga Point and the Yarramundi Peninsula to minimise impacts on the identified natural heritage values.	3.4.1 Control access to Stirling Ridge and Attunga Point and the Yarramundi Peninsula, through the use of fencing, signage and control/ closure of paths, to consolidate and promote the ecological sustainability of the natural communities in those areas.	High	By 2011
3.5 Review and update the Lake Burley Griffin Recreation Policy, 2005, in line with this HMP	3.5.1 Continue to monitor recreational use of the lake to assess current use patterns and determine future recreational needs.	Medium	Annually
	3.5.2 As part of the review and update of the Lake Burley Griffin Recreation Policy, 2005, develop objectives and evaluation criteria for events and uses to promote, conserve and manage the identified heritage values of the Study Area in line with this HMP.	Medium	By 2011

POLICIES	ACTIONS	PRIORITY	TIMING
4. Decision Making Procedures, Expertise and Training			
4.1 Develop a decision making process, supported by assessment documentation and checklists, in order to make consistent and effective decisions on the potential impacts of works, activities or proposals on the heritage values of a place.	4.1.1 The decision making process should include consultation with internal and external stakeholders.	High	As required
	4.1.2 Decision making relating to places of Indigenous heritage value must include consultation with appropriate Indigenous community members.	High	As required
	4.1.3 Decision making will be documented and the records kept for future reference.	High	Immediately
	4.1.4 Decision-making relating to actions and impacts affecting the Lake Burley Griffin Study Area should be based upon the identification and assessment process set out in the NCA Heritage Strategy and the NSW Heritage Branch Statement of Heritage Impacts.	High	As required
	4.1.5 Recognise ongoing management needs through specific precinct/area conservation management plans and masterplans. These will form the basis for any further assessment of heritage impacts. In particular, prepare detailed conservation management plans/ masterplans for Westlake (rowing course site), Yarralumla Bay, West Basin, Attunga Point/Stirling Ridge and Kingston foreshore as part of the detailed design development for these precincts. These will form the basis for the assessment of any proposed impacts upon their heritage values.	High	As required
4.2 Engage appropriate experts to advise on potential impacts on heritage values, decisions or designs affecting the heritage values of the Study Area, and to assist in the resolution of heritage conservation issues.	4.2.1 Maintain a list of experienced heritage advisors who can assist the NCA with specific heritage advice or research relating to the Study Area.	Medium	By 2011
4.3 Develop the capacity of NCA staff and contractors to manage the heritage values of the Study Area.	4.3.1 Develop the capacity of NCA staff to appropriately manage Indigenous heritage values, in consultation with stakeholder communities. Explore opportunities for the provision of appropriate Indigenous heritage and cross-cultural awareness training for relevant personnel.	Medium	By 2014
	4.3.2 Provide training opportunities for relevant staff to build capacity in heritage management, particularly in the philosophy and practice of cultural landscape management, heritage significance assessment, and heritage impact assessment.	Medium	By 2014
	4.3.3 Develop heritage management guidelines to assist contractors and Service Contract administrators, in the areas suggested in the specific policies.	High	By 2011
	4.3.4 Continue to undertake and foster research into the heritage values of the Study Area, as a basis for refining future understanding and management for the benefit of the national community.	Low	By 2019
4.4 Should new research or physical evidence be discovered which has implications for the heritage values of the Study Area, the implementation of the HMP may need to be reviewed or re-assessed (as set out in 5 below).	4.4.1 The heritage value of newly discovered physical evidence within the Study Area, such as an unforseen archaeological site, must be assessed prior to making decisions about its future management.	High	As required

POLICIES	ACTIONS	PRIORITY	TIMING
5. Documentation, Monitoring and Review			
5.1 Review and update the Lake Burley Griffin and Adjacent Lands HMP every five years, in compliance with s341X of the *EPBC Act*.	5.1.1 Review and update the HMP every five years or following any major change in circumstance, including changes to the management structure, impacts from natural disaster or to take account of significant new information or research.	Medium	By 2014
5.2 Collate all monitoring data annually, as required by this HMP, as a basis for reporting on the implementation of the HMP and monitoring the condition of the values, in compliance with the *EPBC Act.*	5.2.1 Use annual reporting on the implementation of the HMP to review the guidelines set out in this HMP for priority and timing of actions. Priorities should be re- assessed in any review following the definitions set out in this HMP—that is highest priority should be attributed to actions which alleviate or mitigate key risks to the heritage values (as set out in the definitions at the beginning of this section).	High	Annually
5.3 The condition of the identified heritage values of the Study Area should be monitored and reevaluated as part of the five-yearly review of the HMP.	5.3.1 Use the annual collation of monitoring data to identify trends against the condition of values described in this HMP.	Medium	By 2014
	5.3.2 Ensure that any review of the HMP responds to and addresses trends revealed in monitoring data by refining management techniques accordingly.	Medium	By 2014
5.4 Manage sensitive information and documentation about Indigenous heritage values and places appropriately.	5.4.1 Do not make sensitive or confidential information about Indigenous heritage values or places public without the consent of appropriate stakeholders.	High	Immediately
5.5 Maintain records of works, intervention and maintenance in the Study Area.	5.5.1 As a minimum, record the nature and outcomes of works, interventions and maintenance on the NCA register of places of Commonwealth value, as required by the *EPBC Act*.	Medium	As required
	5.5.2 Existing elements of heritage value should be recorded to appropriate archival standard prior to any intervention or major works that will alter the place.	Medium	As required

POLICIES	ACTIONS	PRIORITY	TIMING
6. Stakeholder Consultation and Involvement			
6.1 Develop and follow a formal consultation plan or protocol for liaison with appropriate Indigenous stakeholders regarding the management of Indigenous sites and heritage values.	6.1.1 Identify relevant Indigenous stakeholders, develop a consultation plan or protocol and meet with them on as needs basis.	High	By 2011
	6.1.2 Encourage appropriate participation of Indigenous stakeholders in management of Indigenous cultural heritage values.	Medium	As required
6.2 Continue to convene the Lake Burley Griffin Users Group.	6.2.1 Continue to consult regularly with lake users to promote equitable and appropriate recreation opportunities for the community.	High	Immediately
6.3 Recognise the strong community attachment to the heritage values of the Study Area through regular liaison on proposals affecting the future uses and development of the place.	6.3.1 Recognise and consult with stakeholders with an interest in the former Westlake settlement site, on any proposals which may affect the future of the place.	High	As required
	6.3.2 Recognise and consult with individuals who have had a significant role in creating and caring for the lake in the past, on proposals affecting future developments, interpretation and management of the heritage values of the place.	High	Annually
	6.3.3 Consult the local Canberra community regularly on the management of the Study Area. Consider holding an annual stakeholder forum to update the community on proposals affecting the Study Area.	High	As required
	6.3 4 Consult more broadly on proposals with the potential to impact on the National heritage values and national cultural and symbolic significance of the Study Area.	High	As required

POLICIES	ACTIONS	PRIORITY	TIMING
6.4 Maintain regular liaison with the ACT government on the management of the heritage values of the Study Area: in particular seek to develop a collaborative approach to the management of natural values of the Study Area.	6.4.1 Convene an annual forum of ACT government and NCA officials to develop a formal agenda for the development of collaborative management of natural values.	High	Annually
6.5 Maintain regular liaison with the Department of the Environment, Water, Heritage and the Arts regarding the management of Commonwealth and National Heritage values of the Study Area.	6.5.1 Seek informal comment from the Department of Environment, Water, Heritage and the Arts on any proposals which have the potential to impact on the heritage values of the study area as part of the decision-making process to assess the significance of impacts. Consultation should occur at an early stage, prior to design development.	High	As required

POLICIES	ACTIONS	PRIORITY	TIMING
SPECIFIC POLICIES			
COMPONENT 1 - THE LAKE AS A DESIGNED LANDSCAPE			
			
Heritage Conservation			
C1-1 Conserve and manage the integrity of the formal design elements of the Study Area deriving from the Griffin plan and the later design and construction of the lake and its foreshores.	C1-1.1Conserve the integrity of the axes, views and vistas of the surrounding landscape (including Black Mountain, Mount Ainslie and Red Hill). 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.	High	Immediately
	C1-1.2 Conserve the visibility of the waters of the lake in views from within Canberra, including the retention of open views to the water from roads and other public use areas (Commonwealth Avenue, Parkes Way, the cycle paths) as well as local secluded vistas from near the lake shore.	High	Immediately

POLICIES	ACTIONS	PRIORITY	TIMING
C1-1 (continued)	C1-1.3 Maintain the water level and water quality of the lake in line with the benchmark for 'Protection of freshwater aquatic systems' in the LBG Water Quality Management Plan, 2006.	High	In accordance with the plan
	C1-1.4 Conserve the informal, river-like form of Westlake as a contrast to the more formal basins.	High	Immediately
	C1-1.5 Respect the relationship between the vertical and horizontal design elements, including the bridges, Carillon and Captain Cook Water Jet.	High	Immediately
	C1-1.6 Conserve the historic plantings of deciduous trees around the foreshores, planted to reflect spring and autumn colour in the waters of the lake.	High	Immediately
	C1-1.7 Conserve the relationship between the lake and the National Library, High Court of Australia, National Gallery of Australia and the National Museum of Australia, where the buildings contribute to the lake's setting and, in turn, the lake provides the setting for the buildings.	High	Immediately
C1-2 Recognise Lake Burley Griffin as a layered cultural landscape, the heritage values of which reflect the Griffin plan; subsequent phases of design and construction; and the remnant natural environment.	C1-2.1 Conserve the diverse landscape character of the lake, including the contrasts between the formal and informal landscapes, and native and exotic vegetation.	High	Immediately
	C1-2.2 Conserve the overall form and shape of the lake which strongly reflects the Griffin plan and later modernist design phases.	High	Immediately
	C1-2.3 Conserve the islands and areas of hard and soft edge treatments reflecting the period of design and construction of the lake.	High	Immediately
C1-3 Conserve and manage the aesthetic values of the lake which are particularly valued by the community.	C1-3.1 Conserve and manage the 'quiet and still' qualities of the lake, particularly in areas such as Central Basin, Tarcoola Reach and Yarramundi Reach.	High	Immediately
	C1-3.2 Conserve the role of the lake as the setting for significant national institutions, particularly the nature of its reflective qualities.	High	Immediately
	C1-3.3 Conserve and manage the high quality parkland setting of the lake to a high standard.	High	Immediately
	C1-3.4 Manage the setting of the lake to retain seasonal colour, natural qualities and diversity of character.	High	Immediately
	C1-3.5 Retain views to the surrounding hillsides as well as their vegetated, natural character.	High	Immediately
C1-4 Recognise ongoing management needs through the preparation of specific precinct/area conservation management plans and masterplans as the basis for any further assessment of heritage impacts.	C1-4.1 Prepare detailed conservation management plans/masterplans for Westlake (rowing course site), Yarralumla Bay, West Basin, Attunga Point and Stirling Ridge and Kingston foreshore as part of the detailed design development for these precincts and as the basis for the assessment of any proposed impacts upon the heritage values.	High	By 2011
Interpretation			
C1-5 An Interpretation Plan should be prepared for the Study Area.	C1-5.1 Interpret the historic, Indigenous and natural heritage values of Lake Burley Griffin to local, national and international audiences—using a range of media including published material, online material and signage.	High	By 2011
	C1-5.2 Consult and involve stakeholders in the development of the Interpretation Plan and specific interpretation initiatives.	High	By 2011 and as required

POLICIES	ACTIONS	PRIORITY	TIMING
C1-6 A variety of methods should be used to interpret the major aspects of the heritage values of the lake.	C1-6.1 Develop themed 'heritage trails' around Lake Burley Griffin, utilising brochures, online or downloadable information, as well as signage, focusing on significant themes of the heritage values such as: – the Griffin plan; – modernist design; – engineering heritage; – Indigenous cultural values; – the historical cultural landscape; and – the natural values of the landscape.	High	By 2014
	C1-6.2 On-site interpretation around Lake Burley Griffin should feature a consistent and distinctive graphic style to form a recognisable interpretive trail around the lake.	Medium	As required
C1-7 Provide the public with free and open access to the lake's waters.	C1-7.1 Encourage public access to the lake for a variety of non-motorised, water-based recreational uses which do not impact on other heritage values.	High	Immediately
	C1-7.2 Continue to use the lake as a stage for large public events (which are temporary and do not impact on other heritage values).	Low	As required
	C1-7.3 Provide opportunities for organised and informal community and family gatherings around the lake.	Medium	Immediately
	C1-7.4 Control recreational activities on the lake to minimise noise and disruption to the water surface, avoid impacts on the shore and shore users and minimise conflicts with other lake users.	High	Immediately

POLICIES	ACTIONS	PRIORITY	TIMING
C1-8 Ensure the lake is available and accessible for a range of uses at all times.	C1-8.1 Manage water quality to enable recreational uses including swimming and boating.	High	Annually
	C1-8.2 Retain current existing points of access to lake for recreation (boat ramps and swimming area).	Low	Annually
	C1-8.3 Prepare a policy plan for temporary venue hire on and around the lake, to facilitate access by a range of user groups.	High	As required
C1-9 Review and update the Lake Burley Griffin Recreation Policy, 2005, in line with this HMP.	C1-9.1 Continue to monitor recreational use of the lake to assess current use patterns and determine future recreational needs and to assess the effectiveness of the policies in conserving the heritage values.	Medium	Annually
	C1-9.2 Develop, as part of the review and update of the Lake Burley Griffin Recreation Policy, 2005, objectives and evaluation criteria for events and uses to promote, conserve and manage the identified heritage values of the Study Area, in line with this HMP.	Medium	By 2011
Stakeholder Consultation			
C1-10 Recognise the strong community attachment to the heritage values of Lake Burley Griffin through regular liaison on proposals affecting the future uses and development of the place.	C1-10.1 Consult the local Canberra community regularly on the management of the lake. Consider holding an annual stakeholder forum to update the community on proposals affecting the heritage values of the lake.	High	As required
	C1-10.2 Consult broadly on proposals with the potential to impact on the National Heritage values and national cultural and symbolic significance of Lake Burley Griffin.	HIgh	As required

POLICIES	ACTIONS	PRIORITY	TIMING
COMPONENT 2 - WATERBODY OF THE LAKE AS AN ECOSYSTEM AND AQUATIC HABITAT			
			
Heritage Conservation			
C2-1 Manage the lake as an aquatic habitat for a range of native species including the Murray cod.	C2-1.1 Continue to implement the fisheries management principles set out in the LBG Management Plan, 1995.	High	As required by existing plans
	C2-1.2 Monitor and manage water quality in line with the benchmark for 'Protection of freshwater aquatic systems' in the LBG Water Quality Management Plan, 2006.	High	As required by existing plans
	C2-1.3 Adopt the precautionary principle approach set out in the LBG Water Abstraction Plan, 2006, in considering the use of water from the lake.		
C2-2 Manage the water quality of the lake in order to maintain recreational uses (yachting, boating, swimming etc).	C2-2.1 Management Strategy, 1995.	Medium	As required by existing plans
	C2-2.2 As part of the review and update of the Lake Burley Griffin Recreational Plan, 2005, develop objectives and evaluation criteria for events and uses to promote, conserve, and mange the identified heritage values of the Study Area in line with this HMP.	Medium	By 2011
	C2-2.3 Monitor and manage water quality in recreational zones in line with the benchmark for 'Recreational water' in the LBG Water Quality Management Plan, 2006.	High	As required by existing plans
C2-3 Ensure that Service Contracts for asset management of the lake and foreshores are consistent with the protection and conservation of identified historic, indigenous and natural heritage values.	C2-3.1 Prepare documentation to be included with Service Contracts which: – provides a statement of heritage values and legislative responsibilities for their protection and management; and – clearly states the priority and emphasis of management activities in different areas.	High	By 2011
Interpretation			
C2-4 Interpret the natural values of the lake as an ecosystem and aquatic habitat.	C2-4.1 Develop a themed heritage trail around the lake utilising brochures, online or downloadable information, as well as strategic signage, which focuses on the natural values of the lake landscape and its role as an ecosystem and aquatic habitat.	Medium	By 2014

POLICIES	ACTIONS	PRIORITY	TIMING
COMPONENT 3 - CENTRAL BASIN			
			
Heritage Conservation			
C3-1 Conserve and manage the integrity of the formal design elements of the Central Basin deriving from the Griffin plan as well as the later design and construction of the lake and its surrounds.	C3-1.1 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.	High	Immediately
	C3-1.2 Conserve the visibility of the waters of the lake in views from within the Parliamentary Triangle and the Parliament House Vista/land axis, and beyond.	High	Immediately
	C3-1.3 Conserve the relationship between the vertical and horizontal design elements, including the bridges, Carillon and Captain Cook Water Jet.	High	Immediately
	C3-1.4 Conserve the historic plantings of deciduous trees around the foreshores, planted to reflect spring and autumn colour in the waters of the lake.	High	Immediately
C3-1 (continued)	C3-1.5 Conserve the naturalistic landscape style, with mixtures of exotic and native plantings to reflect differences in character from one part of the lake edge to another.	High	Immediately
	C3-1.6 Conserve the relationship between the lake and the National Library, High Court of Australia and National Gallery of Australia.	High	Immediately
C3-2 Conserve and manage the aesthetic values of the Central Basin which are particularly valued by the community.	C3-2.1 Conserve and manage the quiet and still qualities of the water in Central Basin, and thus its reflective qualities.	High	Immediately
	C3-2.2 Conserve and manage the parkland foreshore setting of the Central Basin to a high standard.	High	Immediately
	C3-2.3 Retain views to the surrounding hillsides as well as their vegetated, natural character.	High	Immediately
	C3-2.4 Do not obscure or impede the open expanse of the water of Central Basin, for instance by allowing large or bulky craft or structures on the water or extended moorings.	Medium	As required
	C3-2.5 Conserve and maintain the NCDC era edge treatments of Central Basin including: – the naturalistic northern shore; – rock walls; – concrete wall at Gallipoli Reach; and – beach areas on Aspen Island and adjacent to the mouth of Nerang Pool.	Medium	Annually
Interpretation			
C3-3 Interpret all the heritage values of the Central Basin - Indigenous and historic.	C3-3.1 In the context of developing an Interpretation Plan for the Study Area as a whole, key nodes for interpretation in Central Basin should be identified.	Medium	By 2011
	C3-3.2 Develop themed heritage trails around the lake utilising brochures, online or downloadable information, as well as strategic signage, which focus on the range of natural and cultural heritage values of the lake landscape.	Medium	By 2014

POLICIES	ACTIONS	PRIORITY	TIMING
COMPONENT 4 - EAST BASIN			
Not applicable			
COMPONENT 5 - CAPTAIN COOK WATER JET			
Not applicable			
COMPONENT 6 - WEST BASIN			

POLICIES	ACTIONS	PRIORITY	TIMING

Heritage Conservation			
C6-1 Conserve and manage the integrity of the formal design elements of the West Basin deriving from the Griffin plan as well as the later design and construction of the lake and its surrounds.	C6-1.1 Ensure all proposals for development around West Basin are developed in sympathy with the identified heritage values of the place and that the significance of their potential impacts on heritage values are assessed, in line with the *EPBC Act*.	High	Immediately
	C6-1.2 Ensure any new development on the foreshores of West Basin provides appropriate view corridors to and from the lake, especially from Commonwealth Avenue.	High	As required
	C6-1.3 Conserve and manage significant views and solar access to the foreshore by managing the height of foreshore development to provide views and to prevent overshadowing of the foreshore.	High	As required

POLICIES	ACTIONS	PRIORITY	TIMING
C6-1 (continued)	C6-1.4 Ensure foreshore development enhances and contributes to the reflective qualities of the lake setting and provides plantings designed to contribute to the lake's character.	High	As required
	C6-1.5 Retain the sense of the lake and its surrounding developments as located in an open park-like setting.	High	As required
	C6-1.6 The design process for the proposed pedestrian bridge should be rigorously managed to ensure that it is sympathetic to the existing heritage values of the place. It should not obscure significant views or have a negative impact on the design qualities of Commonwealth Avenue Bridge and the surrounding foreshore areas. Guidelines for its materials, colour, scale, bulk and massing should be developed to ensure that it is sympathetic to the existing heritage values of the place.	High	Immediately
	C6-1.7 The proposed pedestrian bridge should not have an adverse impact on the use of West Basin and Westlake for sailing and other recreational, nonmotorised water based activities.	High	Immediately
	C6-1.8 Conserve and maintain the rock wall around the National Museum of Australia precinct.	Medium	Annually
Interpretation			
C6-2 Interpret the heritage values of the West BasinIndigenous, historic and natural themes could all be explored in the context of West Basin.	C6-2.1 In the context of developing an Interpretation Plan for the Study Area as a whole, key nodes for interpretation in West Basin should be identified.	Medium	By 2011
	C6-2.2 Develop themed heritage trails around the lake utilising brochures, online or downloadable information, as well as strategic signage, which focus on the range of natural and cultural heritage values of the lake landscape.	Medium	By 2014

POLICIES	ACTIONS	PRIORITY	TIMING
COMPONENT 7 - WEST LAKE			
Not applicable			
COMPONENT 8 - SPRINGBANK ISLAND			
Not applicable			
COMPONENT 9 - SPINNAKER ISLAND			
Not applicable			
COMPONENT 10 - WARRINA INLET WETLAND			
Not applicable			
COMPONENT 11 - ACACIA INLET WETLAND			
Not applicable			
COMPONENT 12 - YARRAMUNDI INLET WETLAND			
Not applicable			

Volume 4 - Dams and Bridges

Volume 4 of the Lake Burley Griffin and Adjacent Lands Heritage Management Plan focuses on the Dam and Bridges.

The following policies are relevant to the Commonwealth Avenue Bridge Renewal Project.

Attributes

The elegant, designed form of the bridge, including its slim octagonal piers, spaced to provide views to West Basin, aluminium railings with strip lighting, the white colour of the precast concrete and the Waterloo Bridge stones

Heritage Values

Commonwealth Heritage Values—A, B,C, E,F, G, H.

Management Issues, Condition and Integrity

This bridge appears well maintained. This bridge provides some of the most important views of Lake Burley Griffin, including surrounding near and distant topography, to both pedestrians and motorists.1Enhanced pedestrian access, interpretation and viewing areas could take better advantage of these qualities. The view corridors need to be managed and conserved. The bridge provides an ideal opportunity to provide interpretation of the heritage values of the bridge and its setting on Lake Burley Griffin.

POLICIES	ACTIONS	PRIORITY	TIMING
VOLUME 4 - DAM AND BRIDGES			
COMPONENT 2 - COMMONWEALTH AVENUE BRIDGE			

POLICIES	ACTIONS	PRIORITY	TIMING
Heritage Conservation			
C2-1 Maintain the structural and design integrity of the bridge and its approaches, to ensure its long-term conservation as an integral aspect of the heritage values of the designed landscape of the Lake Burley Griffin study Area.	C2-1.1 Maintain the white colour of the concrete of the bridge—seek expert advice on appropriate cleaning methods/products for the concrete if require	Medium	Annually
	C2-1.2 Maintain strip lighting in the bridge railings in good working order	Medium	Annually
	C2-1.3 Maintain railings in good order to prevent cumulative degradation through corrosion—seek expert advice on appropriate cleaning methods/products for anodized aluminium to ensure cleaning does not inadvertently promote corrosion.	Medium	Annually
	C2-1.4 Undertake regular monitoring of the structural integrity of the bridge and the state of conservation of its component materials to identity areas where corrective or preventative action can be taken to delay degradation of materials.	Medium	By 2014
	C2-1.5 Maintain good pedestrian and cycling access to the bridge, including good directional signage and links to pedestrian/cycling route	Medium	As required

POLICIES	ACTIONS	PRIORITY	TIMING
C2-2 Conserve and manage the significant views and vistas from the bridge to the surrounding landscape (see Figure 8.15 in the Heritage Assessment)	C2-2.1 Ensure that any new development within the visual catchment (defined in Figure 8.15 in the Heritage Assessment) of the bridge is assessed in terms of its potential for adverse impacts on the significant views from Commonwealth Avenue Bridge.	High	As required

Figure 8.15 Views from Commonwealth Bridge.

POLICIES	ACTIONS	PRIORITY	TIMING
Stakeholder Consultation and Involvement			
C2-4 Consult with stakeholder communities when change is proposed which might affect the heritage values.	C2-4.1 Seek the input of those involved in the design and construction of the dam and bridges in major decisions about their future management.	Medium	As required
	C2-4.2 Undertake an oral history program to record the memories of those individuals involved in the design and construction of the dam and bridge	High	By 2014

Interpretation			
C2-3 Interpret the heritage values of the bridge in the context of the Lake Burley Griffin Study Area.	C2-3.1 Determine appropriate locations on or near the bridge to install interpretive media. Use the bridge as a node for the location of low-key interpretive media	Low	By 2014
	C2-3.2 Deliver key messages about the heritage values of the bridge and its setting on Lake Burley Griffin, including the engineering values of the bridges and the lake and the history of their design and construction	Low	By 2014
	C2-3.3 Interpretation around Lake Burley Griffin should feature a consistent and distinctive graphic style to be integrated into an interpretive trail around the lake	Medium	As required

4.3 Parliament House Vista —Heritage Management Plan—Final Report, 2010

The two bridges, Commonwealth Avenue Bridge (1963) and Kings Avenue Bridge (1962), cross Lake Burley Griffin and define the symmetrical layout of the Parliamentary Triangle. The Commonwealth Avenue Bridge is aligned with the apex of Capital Hill through Russell. The bridges are major structural features of the lake and also provide important vantage points for viewing the lake.[23]

Whilst the Commonwealth Avenue Bridge itself is technically outside the curtilage of the Parliament House Vista, the lakeside land at its base is included within the curtilage. The following table lists the policies in the HMP with policies of particular relevance to the project highlighted and expanded.

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
VOLUME 1 - CONSERVATION POLICIES				
#	General Policies			
1	Significance the basis for management, planning and work			
2	Adoption of Burra Charter			
3	Adoption of policies	3.1 Priority and implementation timetable		
4	Compliance with legislation	4.1 Manage Commonwealth Heritage values		
		4.2 Providing notice, and seeking advice and comments under the *EPBC Act* regarding the plan		
		4.3 Boundary issues		
		4.4 Non-compliance		
5	Planning documents for or relevant to the Area			
6	Integrated management of components	6.1 Curtilage of components		
7	Expert heritage conservation advice	7.1 Identification of experts		
8	Decision making process for works or actions	8.1 Process		
		8.2 Log of decisions		
		8.3 Criteria for prioritising work		
		8.4 Resolving conflicting objectives		
		8.5 Annual review of implementation		
		8.6 Oversight of treescape management		
9	Review of the management plan	9.1 Reasons to instigate a review		

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
#	Liaison			
10	Relationship with DEWHA			
11	Relationship with other stakeholders	11.1 List of stakeholders		
		11.2 Informing stakeholders		
		11.3 Consultation regarding interpretation		
		11.4 Commonwealth Park Geological Site The NCA will consult the ACT Heritage Council about the possible heritage values of the Commonwealth Park Geological Site, and the coordinated management of such values if confirmed. Commentary: Most of this site lies outside the study area. If heritage value is confirmed, this may lead to some changes to the management of the portion of the site within the study area.	Medium	12/2010
12	Ongoing Consultation with Aboriginal Stakeholders	12.1 Opportunities to be involved		
#	Indigenous Heritage			
13	Protection of sites with potential Aboriginal heritage values	13.1 Ground-disturbing works in Kings Park		
		13.2 Excavation in sandy soils		
14	Artefacts recovered from the Old Parliament House Senate Gardens	14.1 Locating artefacts		

23: GML Heritage, Lake Burley Griffin—Heritage Assessment—Final Report, October 2009, p.18.

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
#	Landscape			
15	Landscape masterplanning	The NCA may consider more detailed landscape masterplanning for the area or precincts within it. Such masterplans will be consistent with this management plan.	Medium	Ongoing
16	General conservation provisions for the landscape	16.1 Strengthening evergreen framework at the AWM		
		16.2 Strengthening the evergreen framework around the National Library of Australia		
		16.3 Lombardy Poplar sentinels		
		16.4 Trees at Commonwealth Place The removal/non-replacement of the asymmetrical tree plantings at Commonwealth Place may be given future consideration when the opportunity arises.	Medium	As the opportunity arises
17	Conservation provisions relating to specific components of the Parliament House Vista Refer to discussion extracted from pp.267-269 HMP Volume 1 re treatment of Commonwealth Park	17.1 Strengthening the evergreen framework plantings along main avenues		
		17.2 Blundells' Cottage landscape		
		17.3 National Rose Gardens		
		17.4 Strengthening the northern lakeshore plantings	Medium	6/2011
		17.5 New information about commemorative trees		

Commonwealth Park:

Conserve the surviving elements of the Crowe masterplan for Commonwealth Park including:

- limited vehicle access and surface parking provision with primary access to be via foot or cycle;
- the entrance at the northeast corner of the park from Civic;
- areas of individual and distinct landscape and horticultural character along the north of Nerang Pool, linking the two main pedestrian entrances – the Marsh Garden, Flower Garden and Stream Valley;
- Nerang Pool (including its existing configuration), Lily Pond, Children's Wading Pool and Mirror Pond;
- the retention of Pryor's two contained lawn areas and the grassed area at Regatta Point;
- thick plantings along Parkes Way to block the sight and sound of traffic, being those adjacent on the northern boundary of the park and effectively the whole length of the this boundary (Commentary: It is noted the NCA may wish to create a view/s into Commonwealth Park from Parkes Way, especially in the vicinity of the Corranderk Street pond);
- lighting to enhance features (Commentary: Nerang Pool included underwater lights but it is not clear if these can be reinstated);
- public facilities including a building at Regatta Point (Commentary: Not necessarily the current building which is much altered and extended from the original);
- amphitheatre (Commentary: It is noted that the amphitheatre could be enhanced as a small-scale event space);
- play sculpture/the fort;
- Stream Valley with its crossing of stepping-stones;
- the use of large scale tree planting to provide a framework and create a suitable scale, especially plantings in informal patterns or drifts;
- Eucalypt plantings down the ridges and green margins with exotic deciduous trees (see figure in Marshall and others 2007);
- the quality of open grass areas and areas of spatial interest;
- framed views and vistas to points of special interest;
- vistas from the main spur of Regatta Point towards the lake and Commonwealth Avenue Bridge, views from Regatta Point to the lake, vistas to and from the east facing slopes of Regatta Point to the lake;

Conserve the surviving elements of the NCDC masterplan for Commonwealth Park as follows:

- Rhododendron Garden (Shrub Glade) concept;
- informal planting of willows, poplars and elms along the north shore of the Central Basin;
- surrounds of Nerang Pool - drifts of Liriodendron tulipifera, Taxodium distichum and Betula pendula;
- higher levels of Commonwealth Park - informal groups of eucalypts with pine accents and extensive under planting of wattles; and • Commonwealth Avenue - formal deciduous tree plantings.

Commentary:

The existing trees in Commonwealth Avenue, Ulmus procera, have not been successful/ thrived, and replacement plantings may be contemplated using the same species.

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
18	Landscape maintenance planning and works	18.1 Current maintenance planning		
		18.2 Prioritised water-use regime		
		18.3 Improving the standard of maintenance		
19	Tree survey, database and management plan			
20	Tree maintenance and replacement	20.1 Tree replacement strategy		
		20.2 Tree surgery works		
		20.3 Recommendations from other relevant studies		
		20.4 Replacement of storm damaged trees		
		20.5 Thinning Kings Park plantation		
		20.6 Trees in carparks		
		20.7 Replacement of commemorative trees		
21	Shrubs and hedges			
22	Turf and grass areas			
23	Weed species			
24	Irrigation			
25	Landscape condition monitoring	25.1 Monitoring program		

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
#	**Natural Heritage**			
26	Native vegetation adjacent to West Block	26.1 Planning and management		
		26.2 Consultation with Environment ACT		
		26.3 Management plan for site		
27	State Circle cutting	27.1 Site issues		
		27.2 Monitoring		
		27.3 Exposure of the upper bench area face		
		27.4 Stabilisation techniques		
#	**Built Elements**			
28	Major buildings			
29	Minor buildings/ structures	29.1 Acoustic environment for the Carillon		
30	Memorials and commemorative features	30.1 Trees at Reconciliation Place		
31	Artworks			
32	Ponds, pools and fountains	32.1 Water use		

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
33	Paths and paving	Paths and paved areas may generally be conserved or upgraded if desired. However, care will be taken if paths are widened or extended to maintain the overall dominance of soft landscaping (see Policy 59 regarding new paths or paving). In addition: careful consideration will be given to the palette of finishes for paths and paving including: – a sympathetic selection given the character of the landscaping in the vicinity of the paths or paving; – possible reconstruction of paths in cases where a significant landscape design exists but it has lost its paths as part of the significant design (eg. Commonwealth Park); – any hierarchy of paths; and – the differing landscape characters of component parts of the Vista; ... the section of path in the Bog Garden of Commonwealth Park containing round pre-cast exposed aggregate pavers will be maintained as evidence of the original Crowe design;		
34	Roads	...It is noted possible changes may include: – changes to the character of King Edward Terrace, its connection to Commonwealth Avenue, and road widening of Commonwealth Avenue;		

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
35	Car and bus parking	35.1 King Edward Terrace and King George Terrace		
		35.2 Major events		
		35.3 Temporary parking		
		35.4 Temporary parking works and making good		
		35.5 Reconstruction of the Patrick White Lawns The NCA will reconstruct the Patrick White Lawns by the removal of the temporary gravel carpark and reinstatement of the lawn. Commentary: This reinstatement work does not preclude possible future use of the lawn area for temporary parking, as discussed at Strategy 35.3.	High	6/2011
36	Signs and furniture			
37	Lighting		High	6/2011
38	Infrastructure			
39	Maintenance planning and works	39.1 Review of existing maintenance planning		
		39.2 Maintenance and monitoring		
		39.3 Life-cycle maintenance planning		
40	Upgrading and adaptation works			
41	Condition monitoring	41.1 Monitoring program		
		41.2 Reporting by contractors		
#	Setting			
42	Protection of the Setting	42.1 Liaison with ACTPLA[24]		
		42.2 Protection of Mount Ainslie		
		42.3 Portal Buildings		
		42.4 Further consideration of impact of National Capital Plan proposals		

24: Environment, Planning and Sustainable Development Directorate now handles all environmental and planning related matters on behalf of the Territory.

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
43	Protection of views to and from the Area	The significant views to and from the Vista will be protected. The significant views include: – to the surrounding hills, especially Mount Ainslie, Black Mountain and Mount Pleasant; – to the west and the mountains across West Basin; – to East and West Basins; – to the current Parliament House; – from Mount Ainslie, Mount Pleasant, Black Mountain, Red Hill and Parliament House; – from Commonwealth and Kings Avenues, especially the bridges; and – from the eastern part of Parkes Way adjacent to Kings Park.		
		Commentary: This policy deals with external relationships and not specifically with views inside the area. The NCA has planning responsibility for all of the important view points into the Parliament House Vista, with maintenance of these view points being the responsibility of the ACT Government or the Commonwealth Department of Parliamentary Services. The NCA has proposals to change the character of Parkes Way. These should respect the significant views from the eastern part of Parkes Way adjacent to Kings Park.		

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
#	**Use of the Place**			
44	Primary and secondary uses	44.1 Zoning		
		44.2 Inclusion of secondary uses in major buildings		
		44.3 Coordination of uses and major events		
45	New and continuing uses compatible with significance			
46	Access			
47	Carrying capacity			
48	Control of leased areas/activities	48.1 Lease arrangements		
#	**New Development**			
49	General provisions relating to new development			
50	New landscaping, landscape structures and plantings	New landscaping, landscape structures and plantings, not including replacement plantings, may be permitted subject to the following: – that it is consistent with the general landscape conservation provisions and provisions relating to specific components (see Polices 16 and 17); – that it respects the existing tree planting patterns within the area; and – that it is consistent with any management plan for the specific component affected. ... Opportunities may exist to complete the Crowe masterplan for Commonwealth Park, including intensive horticulture areas, a conservatory and hilltop native garden.		

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
51	Major new buildings			
52	New minor buildings			
53	New memorials and artworks			
54	New parking			
55	New jetties			
56	Temporary changes			
57	Signage	57.1 General guidelines		
		57.2 Signage plans for institutions		
58	Furniture			
59	Paths and paving			
60	Lighting			
61	Infrastructure			
#	Interpretation			
62	Interpreting the significance of the Vista	62.1 Interpretive strategy		
		62.2 Review of strategy		
63	Signage	63.1 Review and alteration of existing and proposed signage		
#	Unforseen Discoveries			
64	Unforeseen discoveries or disturbance of heritage components			
65	Records of intervention and maintenance	65.1 Records about decisions		
		65.2 Records about maintenance and monitoring		
		65.3 Summary of changes in heritage register		

NO.	POLICY TITLE	STRATEGY	PRIORITY	TIMETABLE
#	Further Research			
66	Addressing the limitations of this management plan			
#	Other Matters			
67	Targeted information products derived from the HMP			

Geological site in Commonwealth Park (Section 2, Block 4, Parkes) (Criterion (a) Natural History

The outcrops are a colourful and readily accessible example of the common sedimentary bedrock of City Hill and the central region of Canberra.

Natural history – Geological site in Commonwealth Park

It is considered that the natural heritage values of the small section of this geological site in the study area do not meet the criteria relevant to listing on the National or Commonwealth Heritage lists as there are better examples of this type of exposure in nearby areas. This includes the contiguous section of the exposure to the north, and elsewhere in Canberra such as at Yerrabi Pond, Ngunnawal.

The geological site in Commonwealth Park does not meet these or other criteria.

Heritage Listings

The Geological site in Commonwealth Park is listed by the National Trust of Australia (ACT).

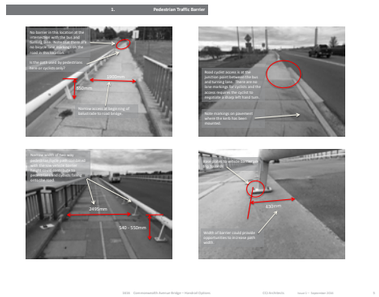
Figure 217: 1967. Commonwealth Avenue Bridge at night.
Source: National Archives of Australia, A1200, L63643, Item ID 11202923

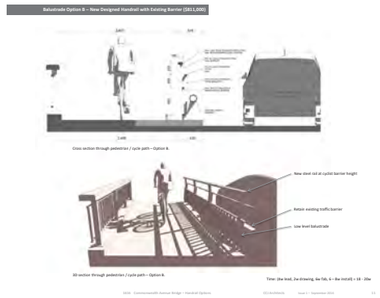
5.0
Appendix 2 - Options Study

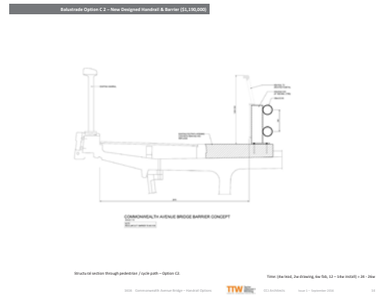
5.3.1 CCJ Architects, Commonwealth Avenue Bridge Handrail & Barrier Options, Concept Design Report, October 2016

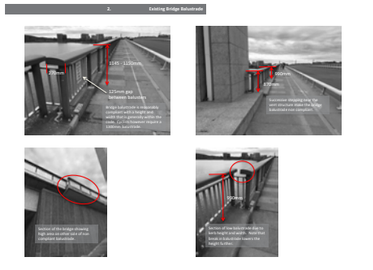
GML provided the following recommendations for general guidance to the project team developing new handrails and barriers for the bridge in their Heritage Memorandum for the Commonwealth Avenue Bridge Handrail Upgrades in October 2016.

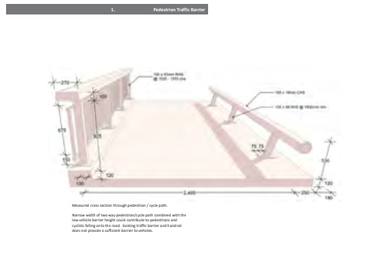
- Pursue a design option for the handrail and barrier which follows the general principles outlined below - to respect the existing design principles of the Commonwealth Avenue Bridge and its context (the lake setting as a designed landscape.)
- The development of a suitable option should:
  - be a custom made design which is constructed of high quality architectural finishes in a durable material, and a neutral colour;
  - reinforce the symmetry of the bridge, be streamlined, 'slim-line' and aesthetically pleasing;
  - not be visible from the outside of the bridge (ie viewed from the water or the lakeside);
  - incorporate lighting which is complementary to the setting and does not compete with or distract from the existing designed lighting of the outer handrails (a significant attribute of the heritage values).
- Where possible within the scope - ensure consistency in the design and retain the symmetry of the bridge by installing the same handrail approach for both the northbound and southbound lanes. Both sides of each lane of the road should also be considered (ie the inner traffic barrier), with a complementary barrier design developed (noting that pedestrian access is restricted and therefore interpretation would be reduced).
- An interpretation plan could be prepared to coincide with the development of a preferred design option. This would present an opportunity to include interpretive panels or interactive elements to tell stories of the early construction of the bridge and/or lake; memorable events and processions; important viewpoints; and connections with the land and water axes of Griffin's plan as part of the early planning for Canberra.

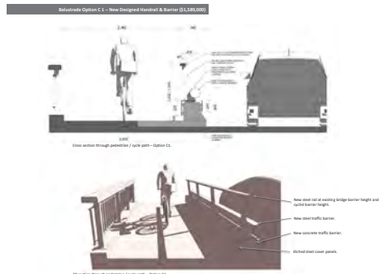


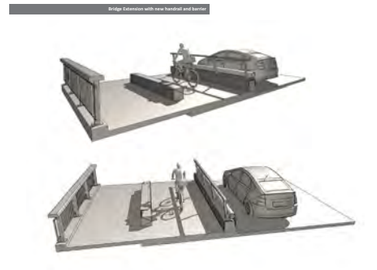


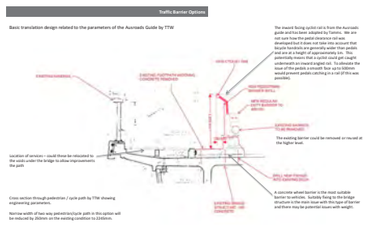


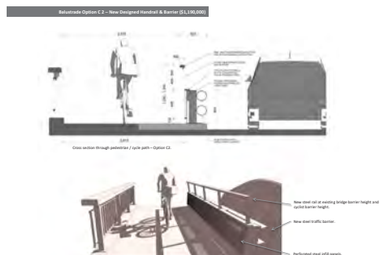


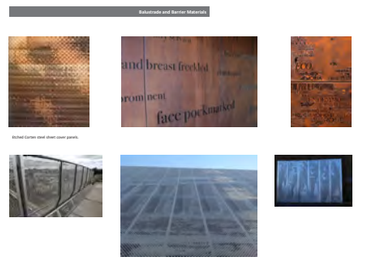






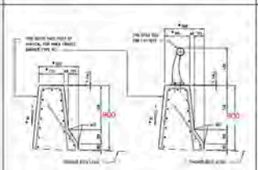




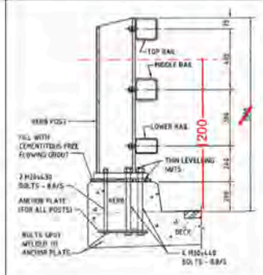
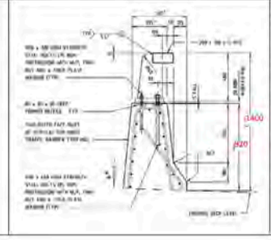


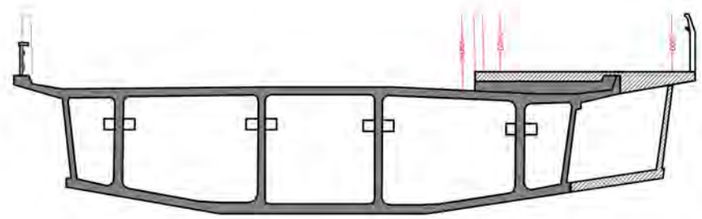
5.3.2 Barrier Constraints, SMEC, 2022

Regular Performance Barrier

	Agreed barrier name	Indicative barrier profile[#]	Barrier description
RMS RCO, RCI Regular level, F-shape concrete barrier	RL1		Concrete parapet; designed for both outer and inner traffic barriers (RCO and RCI, respectively); total height ~~820~~ mm, (minimum) The outer face of the concrete parapet must be vertical for inner traffic barrier type RCI. CHS grab rail for cyclists can be installed on top of these barriers.
RMS RBO, RBI Regular level, Combination barrier	RL6		Combined concrete parapet and two metal rail-and-post barrier; designed for both outer and inner traffic barriers (RBO and RBI, respectively); maximum post spacing is 2700 mm; the rail is RHS cross-section; M20 high strength steel bolts grade 8.8; height of parapet ~~850~~ mm, height of steel barrier 650 mm, total height ~~1300~~ mm. The outer face of the concrete parapet must be vertical for inner traffic barrier type RBI. Provision for cyclists. Termination: expansion joint, transition and end post provided.
VRR1 VicRoads Regular level, Three rail steel barrier	RL3		Typical three rail regular level barrier over bridges. 1200 mm height steel posts, bolted to 600 mm diameter concrete column or retaining wall. Three RHS guardrails spacing 350–450 mm.
RMS RAO, RAI Regular level, Combination barrier	RL5		Combined concrete parapet and two metal rail-and-post barrier; designed for both outer and inner traffic barriers (RAO and RAI, respectively); maximum post spacing is 2700 mm; rails are RHS cross-section; M20 high strength steel bolts grade 8.8; height of parapet ~~1110~~ mm, height of steel barrier 590 mm, total height 1000 mm. The outer face of the concrete parapet must be vertical for inner traffic barrier type RAI. No provision for cyclists. Termination: expansion joint, transition and end post provided.

Medium Performance Barrier

Original barrier type	Agreed barrier name	Indicative barrier profile[#]	Barrier description
DPTI Medium level, Post and rail barrier			
RMS MAO, MAI	ML4		Combined concrete parapet and two metal rail-and-post barrier; designed for both outer and inner traffic barriers (MAO and MAI, respectively); maximum post spacing is 2700 mm; rails are RHS cross-section; M20 high strength steel bolts grade 8.8; height of parapet 650 mm, height of steel barrier 650 mm, total height ~~1300~~ mm. The outer face of the concrete parapet must be vertical for inner traffic barrier type MAI. Provision for cyclists. Termination: expansion joint, transition and end post provided.
RMS MBO, MBI	ML5		Combined concrete parapet and one metal rail-and-post barrier; designed for both outer and inner traffic barriers (MBO and MBI, respectively); maximum post spacing is 2700 mm; the rail is RHS cross-section; M20 high strength steel bolts grade 8.8; height of parapet ~~820~~ mm, height of steel barrier 480 mm, total height ~~1200~~ mm. The outer face of the concrete parapet must be vertical for inner traffic barrier type MBI. Provision for cyclists. Termination: expansion joint, transition and end post provided.



Minimum bridge barrier height varies with performance level.

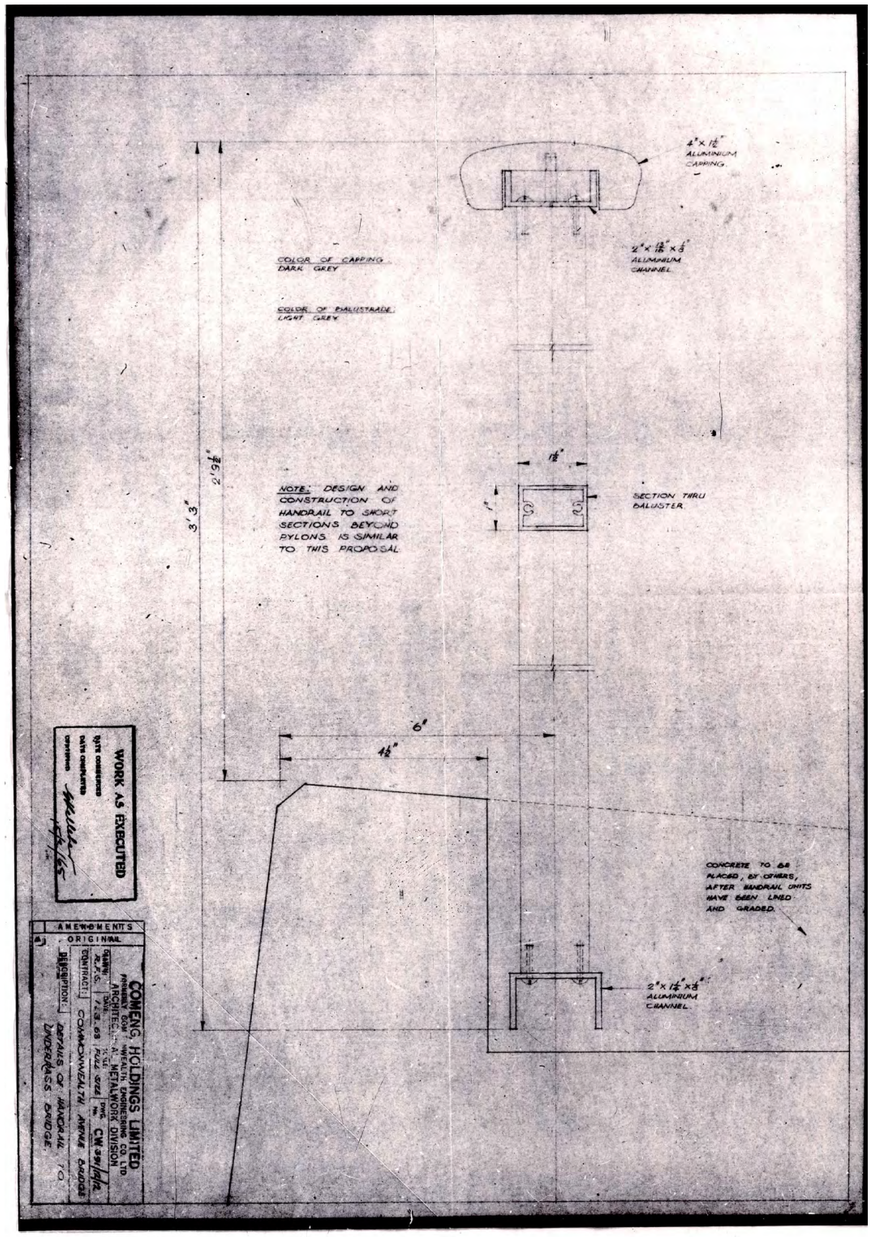


Figure 3.4 Kings Avenue Bridge lighting in handrail and below to light roundel. (Source: K Baker, 2020)

Figure 3.5 Commonwealth Avenue Bridge lighting in handrail and behind aluminium parapet cover to illuminate panels below. (Source: K Baker, 2020)

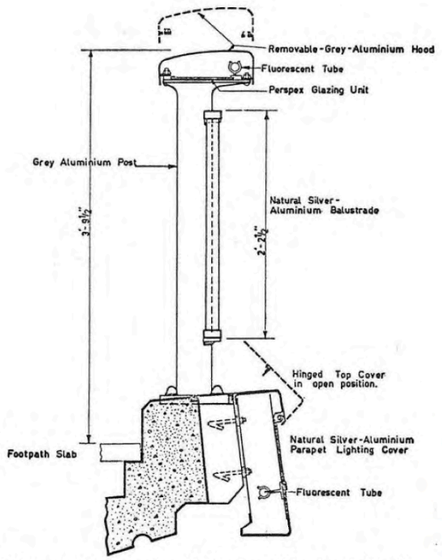


Figure 3.6 Commonwealth Avenue Bridge handrail and parapet lighting design. (Source: Birkett 1964 p 147)

Figure 3.7 Detail of integral handrail lighting of the Commonwealth Avenue Bridge. (Source: K Baker, 2020)

5.3.3 Options October 2022

Original form & Heritage Design Principles

Character
- Complementary.
- Contemporary.
- Simple aesthetic, elegant.
- Horizontal emphasis.
- Bridge - symmetrical pair - singular expression duplicated.
- Balustrades - simple, with degree of transparency.
- Landscape elements to respond to surrounding context.

Siting
- Minimise impacts on views.
- Connect to surrounding landscape.

Scale
- Similar scale bridge edge condition to existing to minimise impacts on views, particularly the Parliament House Vista.
- Height of balustrades and crash barriers to be minimised - Lower speed may enable lower height crash barriers - NCA risk profile.

Form
- Linear horizontal emphasis to bridge primary elements to be retained with integrated lighting.
- Renewed edge condition to be similar to existing with overall form of bridge stretched/elongated.
- Vertical elements - existing pylons only - no vertical light poles.
- Finer elements such as balustrades to read as secondary elements.

Materials and colour
- Light colours to bridge - responding to existing white precast with exposed Quartz aggregate.
- Light colours to steel and aluminium balustrades and crash barriers - white, silver.

Detailing
- Simple detailing of architectural elements - contemporary response based on understanding of existing.
- Establish a dialogue between the old and the new.
- Engineering upgrades concealed - simple clean aesthetic.

Existing view of external edge to bridge.

Existing section of bridge body.

Possible new edge treatment and form study

Lahznimmo profile

Study #1

Study #2

Study #3

Study #4

Study #5

Overall comparison study

Study #1

Study #4

Character
- Complementary.
- Contemporary.
- Simple aesthetic, elegant.
- Horizontal emphasis.
- Bridge - symmetrical pair - singular expression duplicated.
- Balustrades - simple, with degree of transparency.
- Landscape elements to respond to surrounding context.

Scale
- Similar scale bridge edge condition to existing to minimise impacts on views, particularly the Parliament House Vista.
- Height of balustrades and crash barriers to be minimised - Lower speed may enable lower height crash barriers - NCA risk profile.

Form
- Linear horizontal emphasis to bridge primary elements to be retained with integrated lighting.
- Renewed edge condition to be similar to existing with overall form of bridge stretched/elongated.
- Vertical elements - existing pylons only - no vertical light poles.
- Finer elements such as balustrades to read as secondary elements.

Materials and colour
- Light colours to bridge - responding to existing white precast with exposed Quartz aggregate.
- Light colours to steel and aluminium balustrades and crash barriers - white, silver.

New infill elements

New infill elements should recognise the characteristic materials, textures and colours of the surrounding area and respond to them. They need not be copied but rather used as a point of reference and reinterpreted in either a considered harmonious, complementary or contrasting way. Light and shadow affect how materials and colours are perceived and this should be considered in the design process.

White precast element

White glass panels

Existing edge

Mirrored patterned glass

Mirror polished SS

5.3.4 Options November 2022

Heritage Design Principles

Character

Complementary
New elements should be complementary to the original built form.

Contemporary
New elements should be identifiably new upon closer inspection to avoid confusion between old and new fabric.

Simple, elegant aesthetic
A simple, elegant aesthetic should be adopted for new elements which complements the original design of the bridge.

Horizontal emphasis
New elements should reinforce the horizontal emphasis of the original bridge when viewed from afar.

Mirrored pair - singular expression
The existing bridge comprises a pair of mirror reversed matching elements which read together as one. This should be retained in the design of new elements.

Simple, transparent balustrades.
The existing balustrades are simple repetitive elements which have a high degree of transparency and read as secondary elements to the primary form of the concrete bridge. This should be retained in the new design.

Landscape elements to respond to surrounding context
The landscape design of the approaches should be recessive in respect to the bridge and the Parliament House Vista.

Siting

Minimise impacts on views
Any changes to the bridge and the landscape approaches should be sited to minimise impacts on key views.

Connect to surrounding landscape
The landscape approaches should be carefully sited to connect to the surrounding landscape.

Materials and colour

Bridge extension
The material of the bridge extension should be light in colour to respond to the existing white precast with exposed Quartz aggregate.

Balustrades and crash barriers
The existing balustrades and crash rails should also be light in colour - the existing are white and silver.

Abutments
The abutments are constructed of precast concrete with dark aggregate and Tarana granite cladding. This should be retained and conserved.[2] A similar palette of materials should be used for any alterations.

Pylons
The existing pylons feature white painted concrete and Tarana granite. This should be retained and conserved.

Scale

Bridge edge condition
The new bridge edge condition should be similar in scale to the existing edge condition, and taper to create similar shadows on the vertical face, to minimise impacts on views.

Balustrade and crash barrier heights
The height of balustrades and crash barriers should be minimised to minimise visual impacts. Lowering the speed limit would lower the required height of crash barriers. NCA to assess risks associated with alternative options.

Detailing

Simple contemporary detailing
The detailing of architectural elements should be simple and contemporary, and based on an understanding of the original design intent.

Dialogue between old and new
The detailing of new elements should be based on a clear understanding of the original detailing. Establish a dialogue between the old and the new fabric through detailing.

Concealed engineering upgrades
Engineering upgrades required for bridge strengthening should be concealed where possible. Where exposed a simple clean aesthetic should be adopted, which is co-ordinated with the architectural response.

Form

Linear horizontal emphasis
The linear horizontal emphasis of the bridge should be retained, with integrated lighting in the balustrades.

Bridge edge condition
The renewed edge condition should be similar to the existing edge condition, with the overall form of bridge widened.

Minimise vertical elements
The bridge pylons should remain the only vertical elements on the bridge. Vertical light poles should be avoided on the bridge, and located as far as possible from the pylons if required on the land north and south of the abutments.

Balustrades and crash barriers
Finer elements such as balustrades and crash barriers should be designed to read as secondary elements to the primary form of the bridge.

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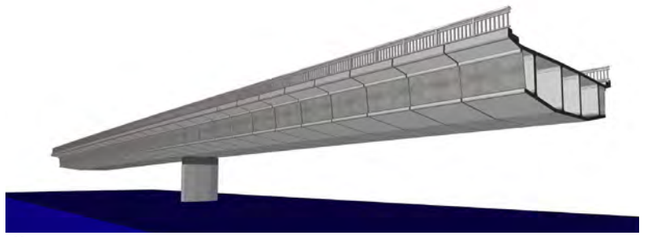
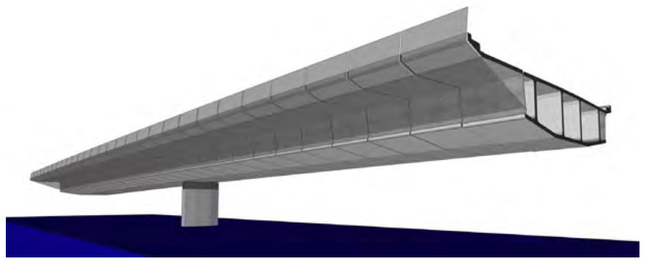
SK 00 HERITAGE DESIGN PRINCIPLES
date printed **18/11/2022**
SMEC spackman mossop michaels



1 EXISTING PROFILE



2 BUSINESS CASE EXTENSION

The form of the bridge extension is a critical element in the overall concept design as it is required to be lightweight, durable, and complementary of the existing bridge structure.

Studies were undertaken to find a suitable form that satisfies these requirements.

The previous recommended option is shown in the second diagram.

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SK 01 BRIDGE EXTENSION FORM STUDY
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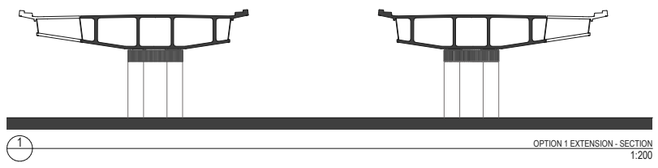
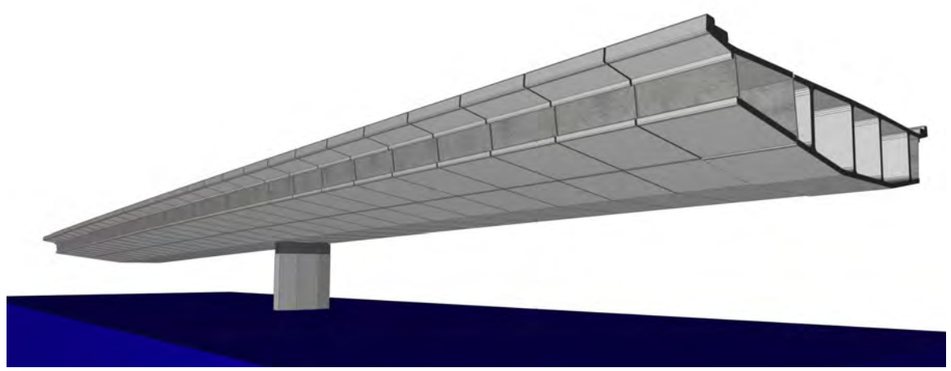


1 OPTION 1 EXTENSION - SECTION
1:200

OPTION 1 extends the existing shape of the soffit of the bridge to the required width and does replicate the existing edge detailing.



2 OPTION 1 EXTENSION

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COMMONWEALTH AVENUE BRIDGE RENEWAL I **OPTION STUDY**
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SK 02 BRIDGE EXTENSION FORM STUDY - OPTION 1
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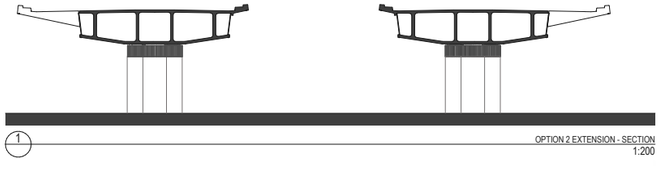
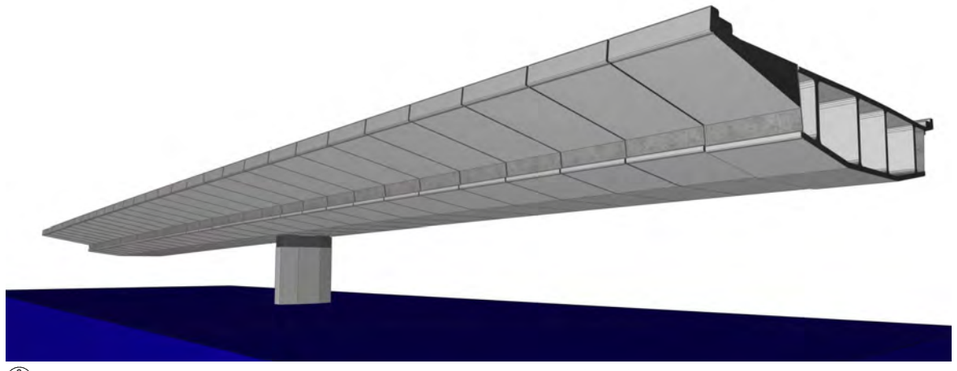


1 OPTION 2 EXTENSION - SECTION
1:200

OPTION 2 uses the existing outer edge detail and profile and elongates the soffit until it hits the existing panel cladding. A match of the existing edge profile dimensions will not be possible due to structural requirements for the cantilever which will result in a deeper face to the edge. This option is structurally more challenging to achieve.



2 OPTION 2 EXTENSION

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SK 03 BRIDGE EXTENSION FORM STUDY - OPTION 2
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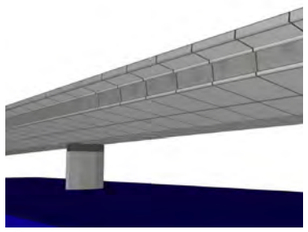
Option 1: white precast concrete panel with exposed white Quartz aggregate.



1 INFILL CLADDING OPTION 1

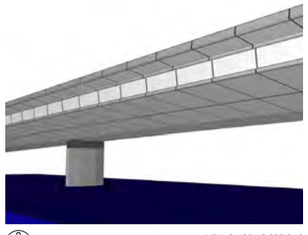
Materials and colour (Heritage Design Principles)
Light colours to bridge - responding to existing white precast with exposed Quartz aggregate.
Light colours to steel and aluminium balustrades and crash barriers - white, silver.

The soffit of the new bridge extension is proposed to be concrete precast panels in line with the existing paneling and detail.

New infill elements should recognise the characteristic materials, textures and colours of the surrounding area and respond to them. They need not be copied but rather used as a point of reference and reinterpreted in either a considered harmonious, complementary or contrasting way. Light and shadow affect how materials and colours are perceived and this should be considered in the design process.

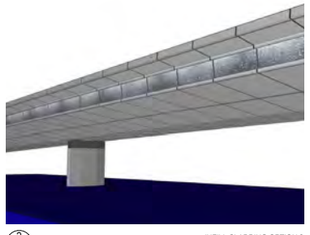
Pre-cast paneling suggested for soffit to match existing.

Option 2: matt white glass panels



2 INFILL CLADDING OPTION 2

Option 3 is exploring the use of a printed image either of an abstract dotted print or a commissioned artwork relating to the location.



3 INFILL CLADDING OPTION 3

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CLIENT: Australian Government National Capital Authority
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SK 04 BRIDGE EXTENSION MATERIAL STUDY
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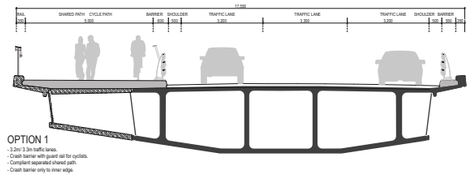
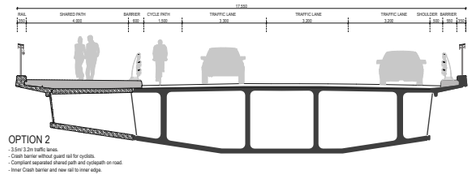
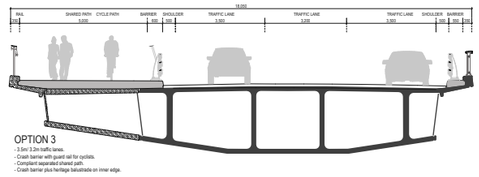


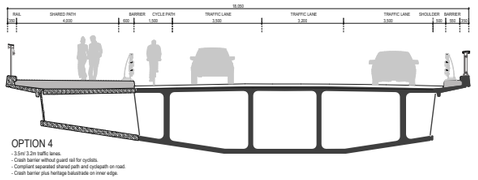
OPTION 1
- 3.2m/ 3.3m traffic lanes.
- Crash barrier with guard rail for cyclists.
- Compliant separated shared path.
- Crash barrier only to inner edge.



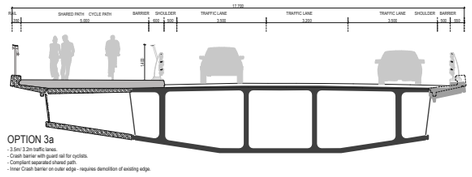
OPTION 2
- 3.5m/ 3.2m traffic lanes.
- Crash barrier without guard rail for cyclists.
- Compliant separated shared path and cyclepath on road.
- Inner Crash barrier and new rail to inner edge.



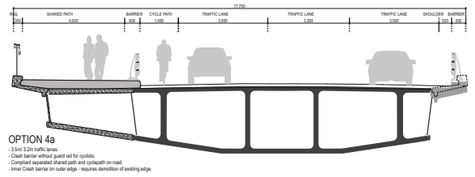
OPTION 3
- 3.5m/ 3.2m traffic lanes.
- Crash barrier with guard rail for cyclists.
- Compliant separated shared path.
- Crash barrier plus heritage balustrade on inner edge.



OPTION 4
- 3.5m/ 3.2m traffic lanes.
- Crash barrier without guard rail for cyclists.
- Compliant separated shared path and cyclepath on road.
- Crash barrier plus heritage balustrade on inner edge.



OPTION 3a
- 3.5m/ 3.2m traffic lanes.
- Crash barrier with guard rail for cyclists.
- Compliant separated shared path.
- Inner Crash barrier on outer edge - requires demolition of existing edge.



OPTION 4a
- 3.5m/ 3.2m traffic lanes.
- Crash barrier without guard rail for cyclists.
- Compliant separated shared path and cyclepath on road.
- Inner Crash barrier on outer edge - requires demolition of existing edge.

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117 RESERVOIR STREET, SURRY HILLS NSW 2010
P (02) 9215 4[illegible]
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SK 05 LANE WIDTH AND BARRIER LOCATION
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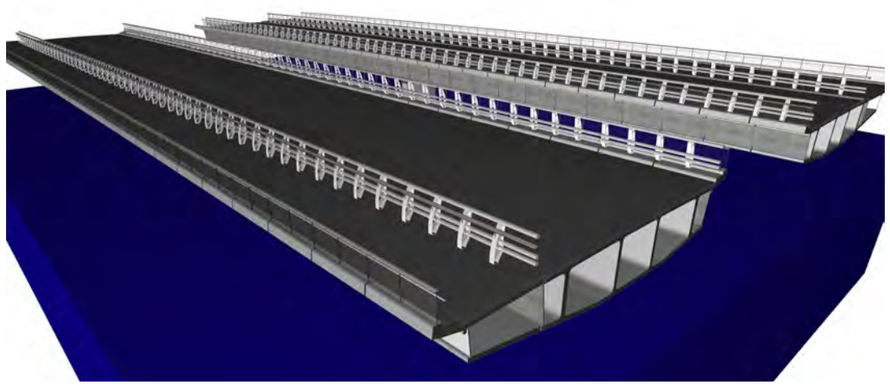

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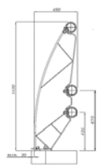

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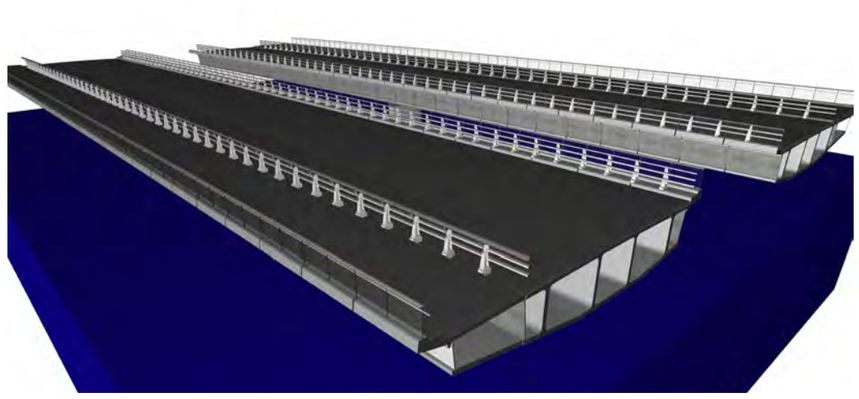

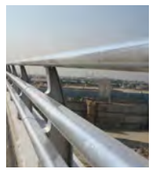

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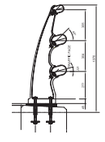

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SK 07 CRASH BARRIER - VGAN
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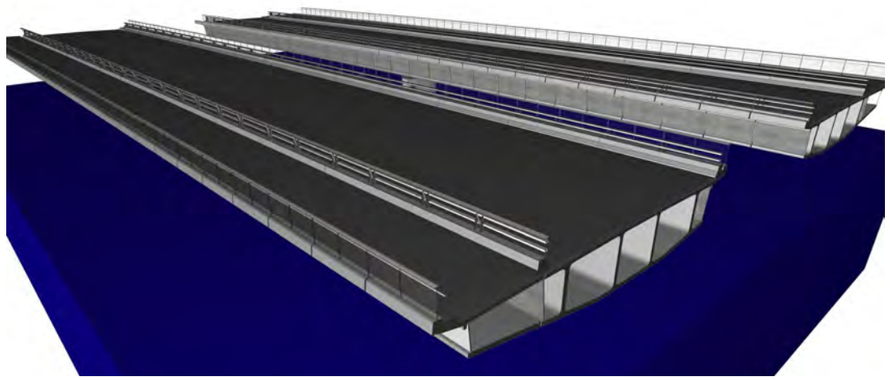

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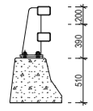

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SK 08 CRASH BARRIER - RBO
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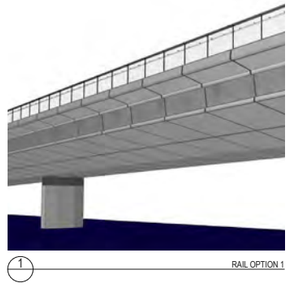
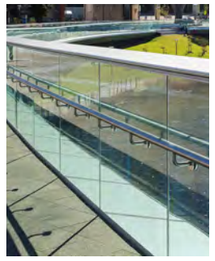
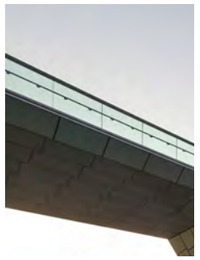


1 RAIL OPTION 1

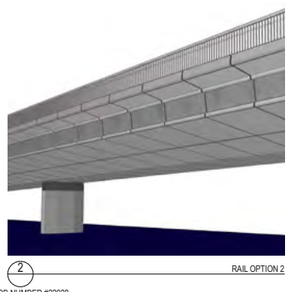




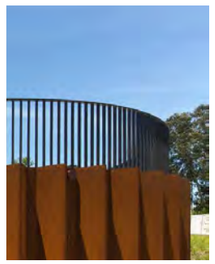
Precedent images for Rail Option 1

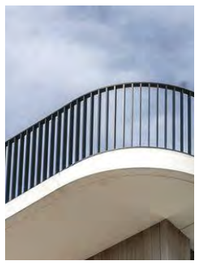
RAILINGS (Heritage Design Principles)
Balustrades - simple, with degree of transparency.
Finer elements such as balustrades to read as secondary elements.
Light colours to steel and aluminium balustrades and crash barriers - white, silver.

Rail option 1 is a frameless glass balustrade which cantilevers out of the base structure of the bridge with a toprail and handrail



2 RAIL OPTION 2





Precedent images for Rail Option 2

Rail option 2 is a fine metal railing structure with slim vertical metal bars with a top rail.

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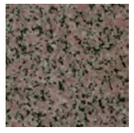
Current view of bridge abutment.

Abutment is extended on three sides around Pylon, to be faced in brown granite as per existing. Original appears to be Tarana granite - quarry now closed. Close approximation is Desert Rose from UrbanStone.



Tarana pink granite

Desert Rose from UrbanStone

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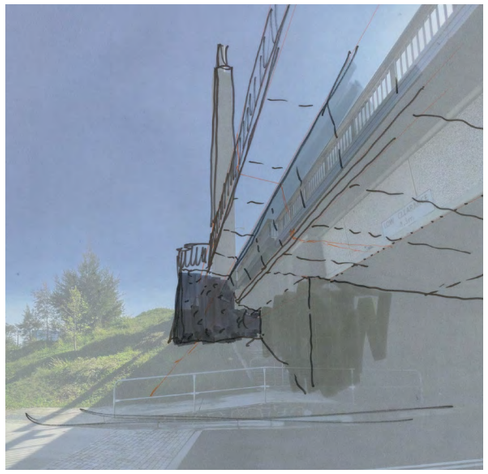
Current view of bridge abutment.



Same approach can be used on all four Abutments, with impact on stairs etc TBC once we have updated survey information and a complete 3D model.

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SK 11 BRIDGE ABUTMENTS NW
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Commonwealth Avenue Bridge Renewal Project

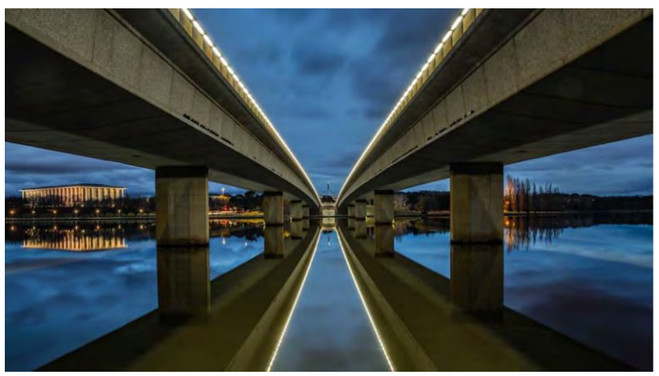
LIGHTING DESIGN

APRIL 2023

30% ISSUE [A]

COMMONWEALTH AVENUE BRIDGE – ARCHITECTURAL LIGHTING

Existing Bridge Lighting – OUTER BALUSTRADES & PARAPET



Currently the bridge lighting is composed of a continuous lighting system installed along the handrail. This provides a uniform wash of light across the balustrade.

This is a rare example of bridge lighting, that was integrated into the handrail and parapet, illuminating the roadway and walkways, and enabling the bridge elevation to be viewed from a distance.

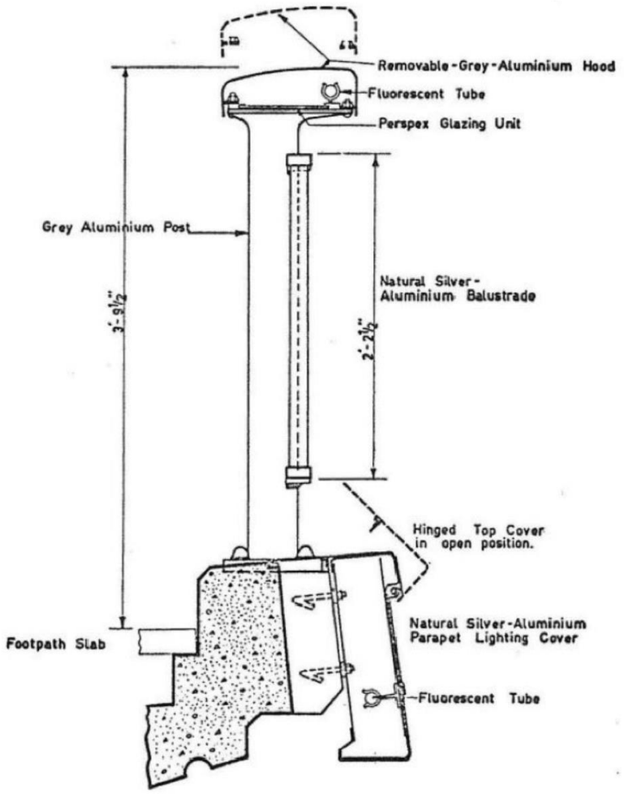


Figure 3.6 Commonwealth Avenue Bridge handrail and parapet lighting design. (Source: Birkett 1964 p 147)

Imagery retrieved from the heritage report

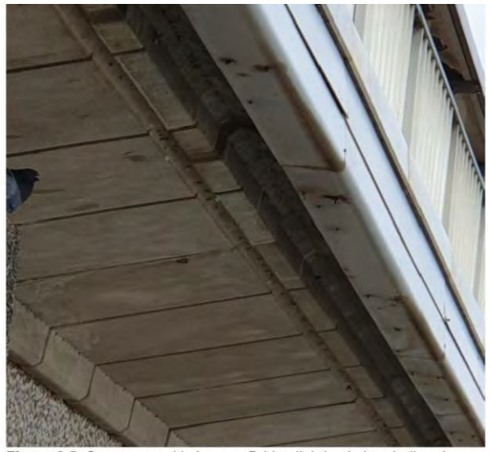


Figure 3.5 Commonwealth Avenue Bridge lighting in handrail and behind aluminium parapet cover to illuminate panels below. (Source: K Baker, 2020)

Figure 3.7 Detail of integral handrail lighting of the Commonwealth Avenue Bridge. (Source: K Baker, 2020)

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Existing Lighting – Outer Balustrade

project numer:
L174V – 30% ISSUE – 01

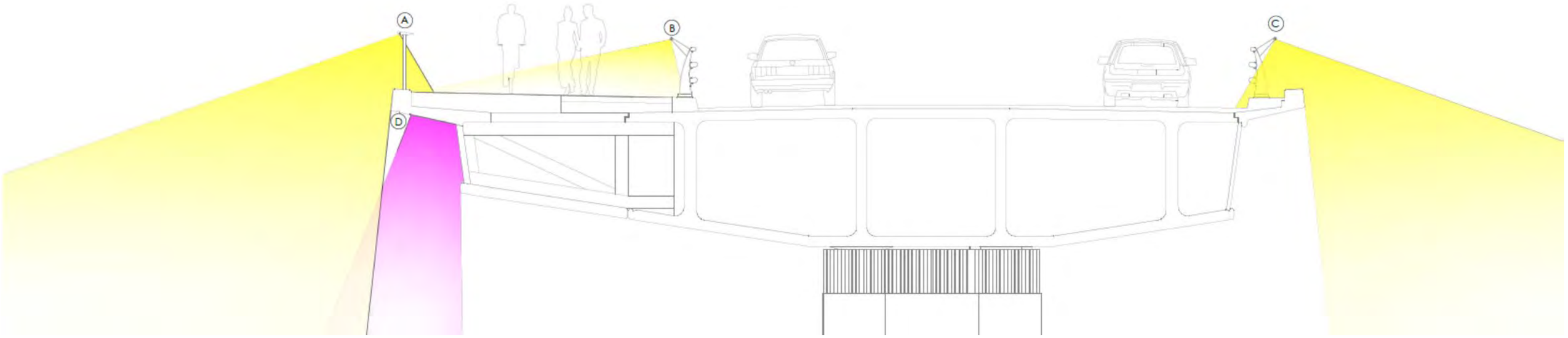
Rev:
A

Issue Date
21/04/23

COMMONWEALTH AVENUE BRIDGE – LIGHTING

Indicative Lighting Locations on Bridge

The linear horizontal emphasis of the bridge should be retained, with integrated lighting in the balustrades and barriers. The linear lighting results in an aesthetically sleek and ‘modern’ appearance when viewed from any direction.



Commonwealth Avenue Bridge Section – Balustrade, barrier & panel lighting locations

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Indicative Lighting Locations on Bridge

project numer:
L174V – 30% ISSUE – 02

Rev:
A

Issue Date
21/04/23

COMMONWEALTH AVENUE BRIDGE – ARCHITECTURAL LIGHTING

Proposed Lighting – OUTER BALUSTRADE – LOCATION A

The linear horizontal emphasis of the bridge should be retained, with integrated lighting in the balustrades. The linear lighting results in an aesthetically sleek and 'modern' appearance when viewed from any direction.

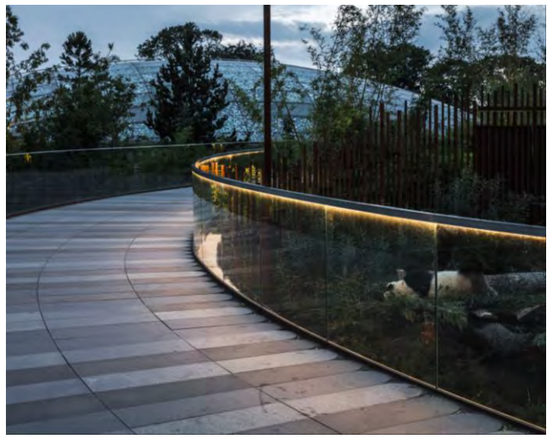
It is proposed that the outer balustrades have linear LED lighting incorporated. The proposed light shall be warm white and diffuse to ensures a pleasant and uniform illumination.

The proposed luminaire can be dimmable, so the output can be adjusted on site. However, if dimmable, luminaire cabling and power supply sizing increases. Due to the limited room to accommodate all the services withing the bridge, an ON/OFF system is probably the most adequate.

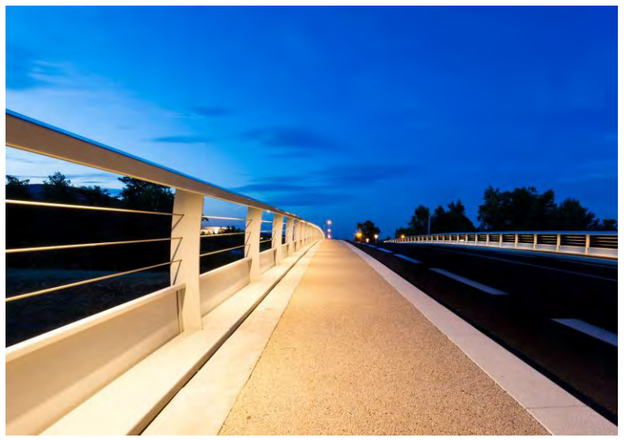
The colour temperature (appearance) of the light must be warm (3000 K or lower) for a more subtle lighting effect. Cold light makes a space appear harsh and sterile. Also, cooler light temperatures have more impact on the biota and the night sky. The use of light sources with reduced light output in the blue and ultraviolet range should be used. This can generally be interpreted as light sources of 3000K or lower.

The proposed Luminaire COOLON ALTO IP offers a completely uniform glowing diffuser where no dots or scalloping being visible along the length of the luminaire (which is visible from ground level) or the illuminated surface.

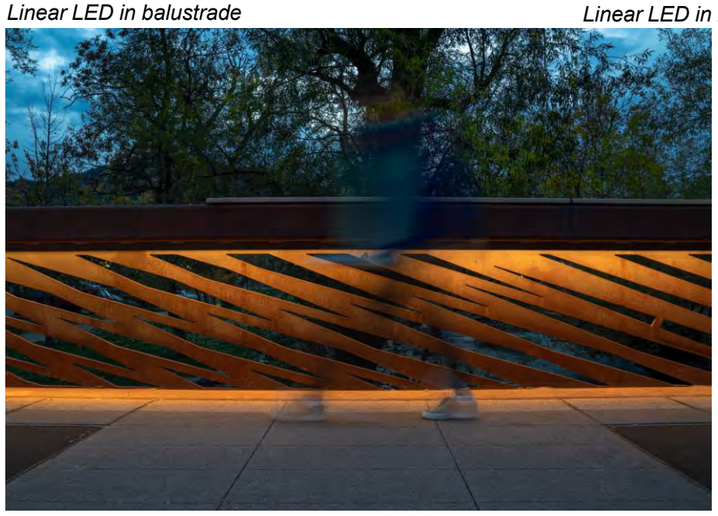
Luminaire trials and tests with luminaire samples must occur to ensure that the desired uniform glow effect on the balustrade is achieved.



Precedent Image – The Panda House, Denmark
Linear LED in balustrade

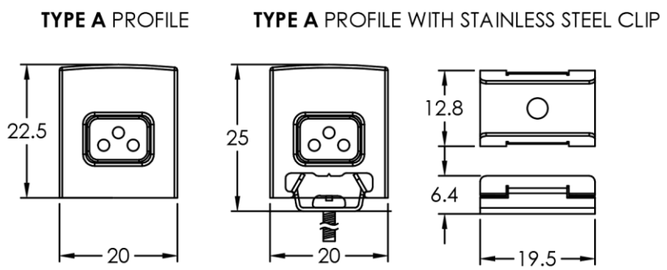


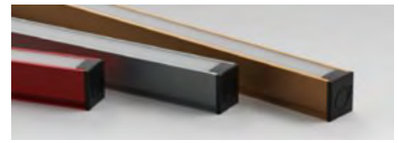
Precedent Image – Cernay, France
Linear LED in balustrade

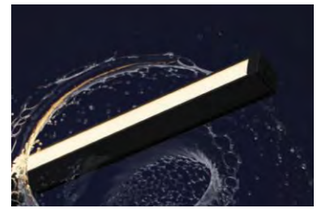


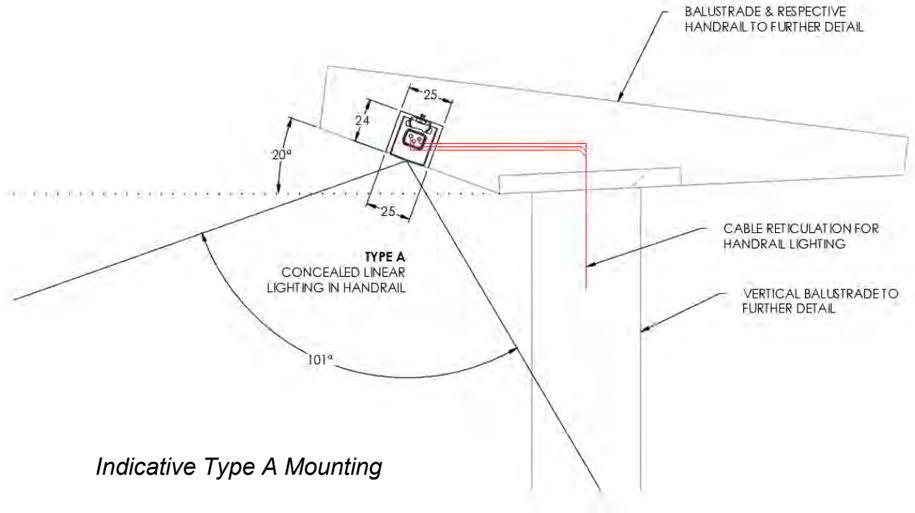
Precedent Image – Boulder, Colorado, USA
Linear LED in balustrade

LIGHT FITTING LOCATION A – COOLON ALTO IP

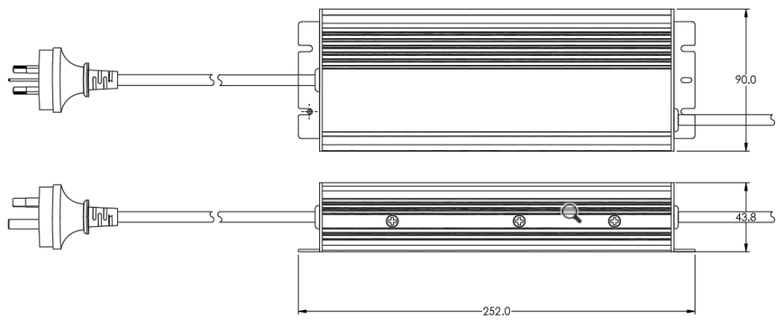








Indicative Type A Mounting



Power Supply – Typical Dimensions – Quantities & Locations TBC
Drivers to be in weatherproof enclosure accessible from deck

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Proposed Lighting – Outer Balustrade

project numer:
L174V – 30% ISSUE – 03

Rev: A
Issue Date 21/04/23

COMMONWEALTH AVENUE BRIDGE – FUNCTIONAL LIGHTING

Functional Lighting – PATHWAYS AND CYCLIST PATHS LIGHTING – LOCATION B

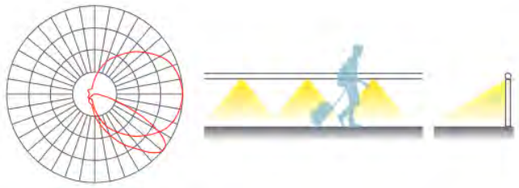
As per the Heritage Report, addition of vertical light poles on Commonwealth Bridge should be avoided in order to maintain the original horizontal lines that characterize the bridge. The linear horizontal emphasis of the bridge should therefore be retained

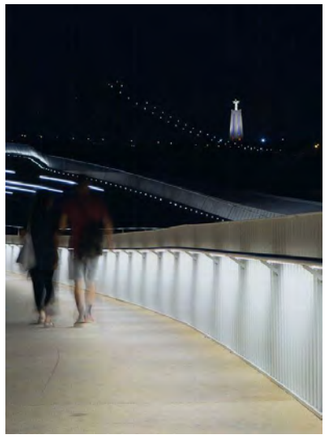
It is proposed that the cycleway barrier handrail have linear LED lighting incorporated to be consistent with the balustrade and outer bridge barriers.

Use of asymmetric light distribution lens is recommended for the bridge deck lighting as Pedestrians & Cyclists share the path along the deck. The proposed luminaire for the deck lighting is the COOLON Alto IP with an asymmetric light distribution. These have integrated advanced optics that allow to direct the light beam to the shared path area.

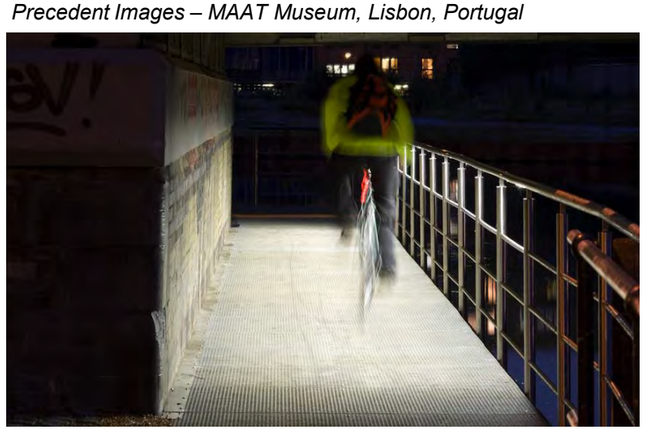
The proposed luminaire optic that provides the asymmetric light distribution is being developed by the manufacturer. The advantage of utilising the same luminaire profile (despite the different light distribution) on both barriers, is that the same barrier handrail detail can be used on both barriers and therefore be identical promoting the symmetry of the bridge.

The proposed light shall be warm white and luminaire trials and tests with luminaire samples must occur to ensure that an uniform deck lighting for cyclists and pedestrians is achieved.



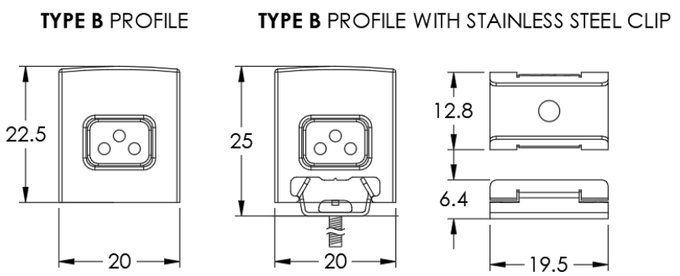


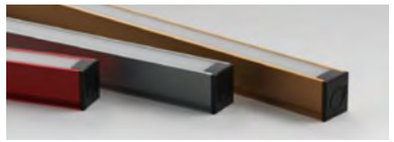
Precedent Images – MAAT Museum, Lisbon, Portugal

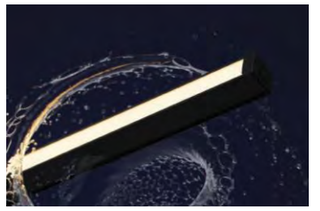


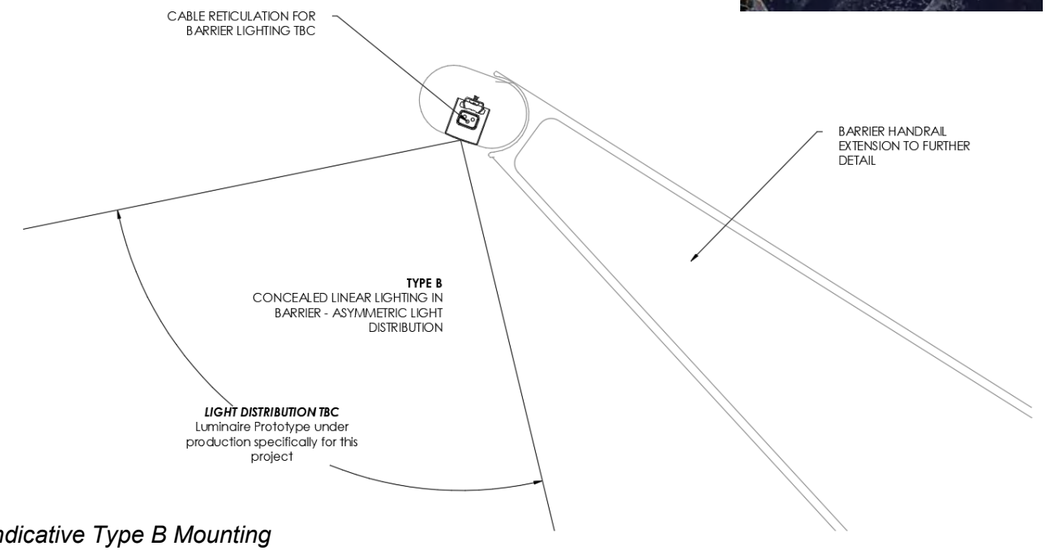
Precedent Image – Lea Bridge Road towpath, London

LIGHT FITTING LOCATION B – COOLON RATIO IP

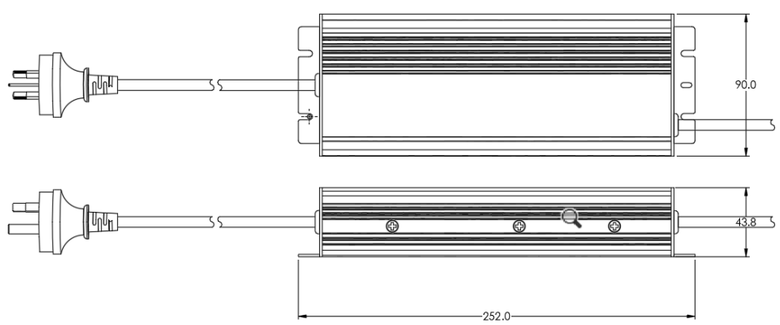








Indicative Type B Mounting



Power Supply – Typical Dimensions – Quantities & Locations TBC
Drivers to be in weatherproof enclosure accessible from deck

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Functional Lighting – Pathways & Cyclist Path Lighting

project numer:
L174V – 30% ISSUE – 04

Rev: A

Issue Date 21/04/23

COMMONWEALTH AVENUE BRIDGE – ARCHITECTURAL LIGHTING

Proposed Lighting – OUTER BARRIER – LOCATION C

The linear horizontal emphasis of the bridge should be retained, with integrated lighting in the outer barriers. The linear lighting results in an aesthetically sleek and 'modern' appearance when viewed from any direction.

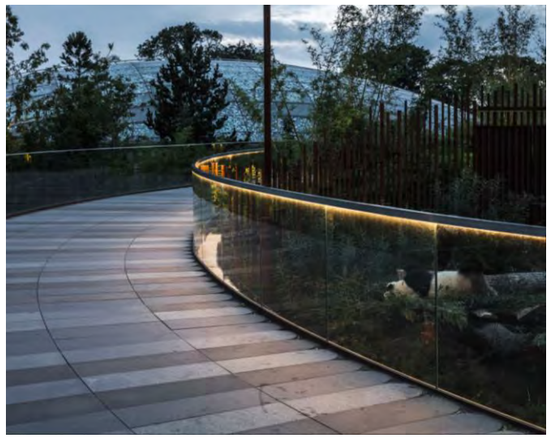
It is proposed that the outer balustrades have linear LED lighting incorporated. The proposed light shall be warm white and diffuse to ensures a pleasant and uniform illumination.

The proposed luminaire can be dimmable, so the output can be adjusted on site. However, if dimmable, luminaire cabling and power supply sizing increases. Due to the limited room to accommodate all the services withing the bridge, an ON/OFF system is probably the most adequate.

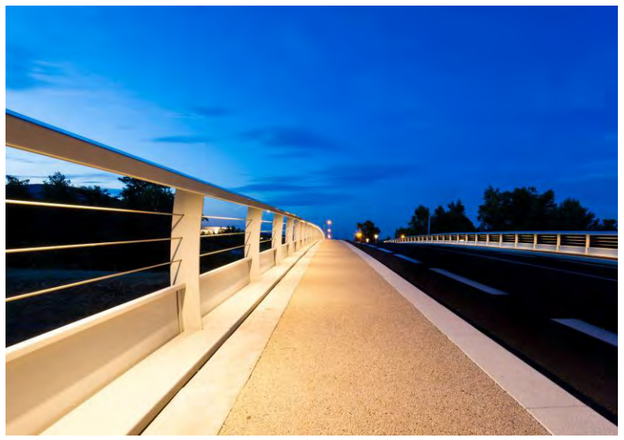
The colour temperature (appearance) of the light must be warm (3000 K or lower) for a more subtle lighting effect. Cold light makes a space appear harsh and sterile. Also, cooler light temperatures have more impact on the biota and the night sky. The use of light sources with reduced light output in the blue and ultraviolet range should be used. This can generally be interpreted as light sources of 3000K or lower.

The proposed Luminaire COOLON ALTO IP offers a completely uniform glowing diffuser where no dots or scalloping will be visible along the length of the luminaire (which is visible from ground level) or the illuminated surface.

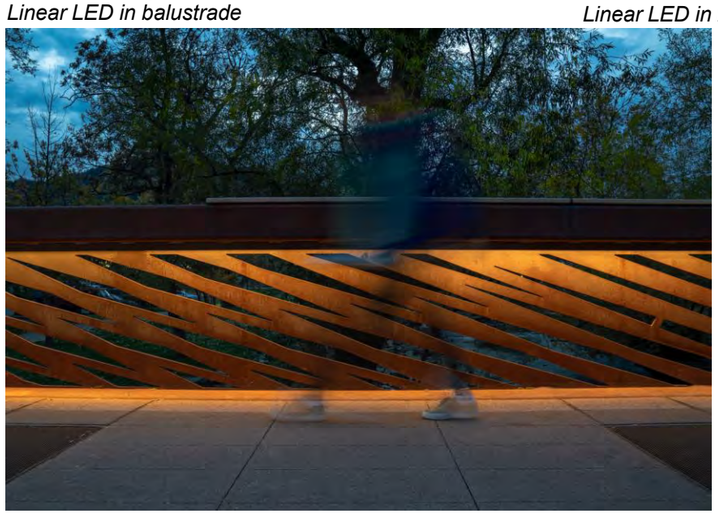
Luminaire trials and tests with luminaire samples must occur to ensure that the desired uniform glow effect on the balustrade is achieved.



Precedent Image – The Panda House, Denmark
Linear LED in balustrade

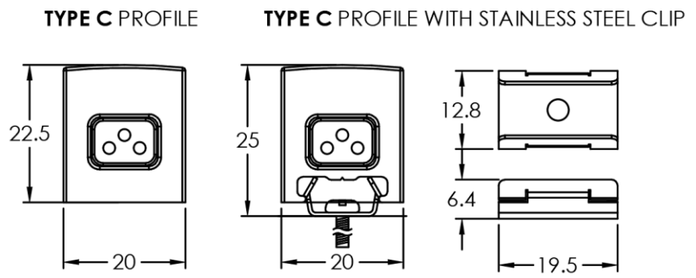


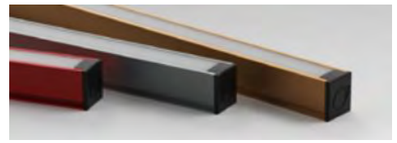
Precedent Image – Cernay, France
Linear LED in balustrade

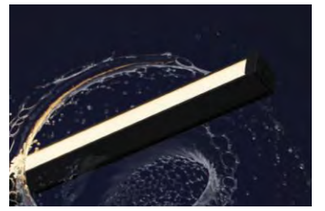


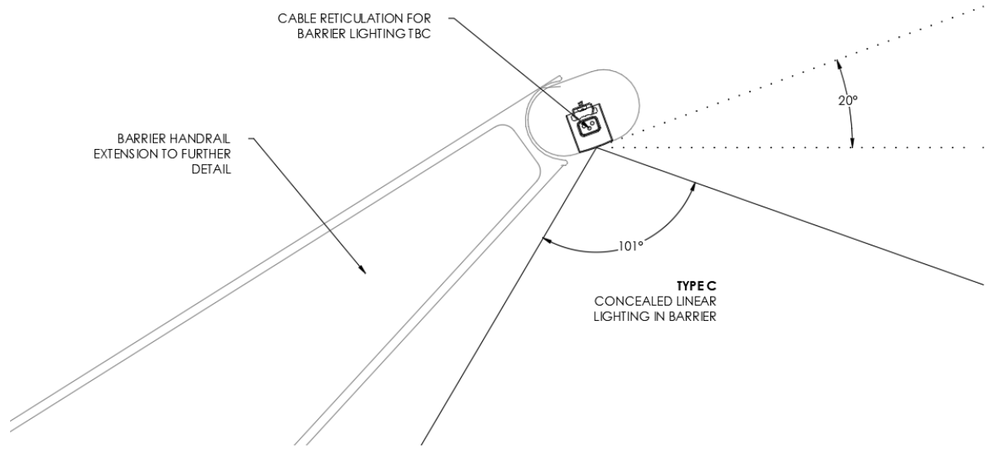
Precedent Image – Boulder, Colorado, USA
Linear LED in balustrade

LIGHT FITTING LOCATION C – COOLON ALTO IP

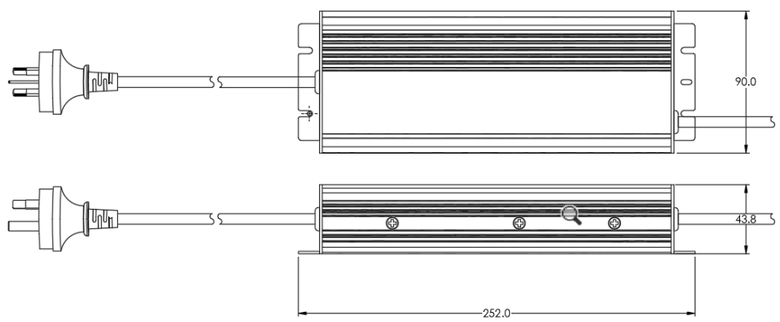








Indicative Type C Mounting



Power Supply – Typical Dimensions – Quantities & Locations TBC
Drivers to be in weatherproof enclosure accessible from deck

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Proposed Lighting – Outer Barrier

project numer:
L174V – 30% ISSUE – 05

Rev:
A

Issue Date
21/04/23

COMMONWEALTH AVENUE BRIDGE – ARCHITECTURAL LIGHTING

Proposed Lighting – BRIDGE PANELS – LOCATION D

Commonwealth Avenue Bridge – Canberra

Precedent Image – Pikisaari Bridge – City of Oulu – Finland
Bridge Panels illuminated with warm white luminaires

Precedent Image – London Bridge – London
Bridge Panels illuminated with colour changing luminaires – Slow Colour change cycle
https://illuminatedriver.london/bridges/london-bridge

Similarly to the current bridge design, there is an opportunity to light the new bridge side panels. The proposed pre-cast panels will reflect incident light.

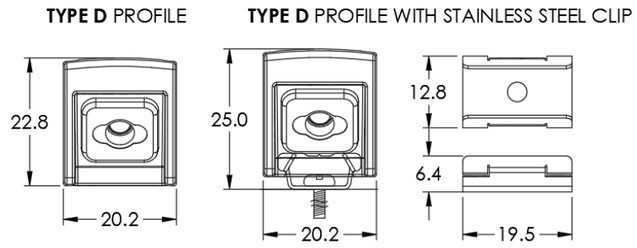
It is proposed that the light installed along the underside of the bridge to illuminate the panels are colour changing, namely RGBW which allows for both white light and coloured light.

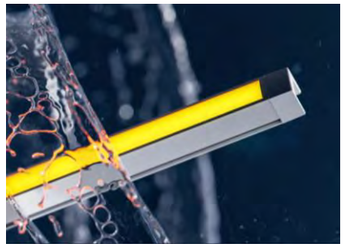
The colour option allows for the promotion of significant events or day (e.g. Australia day, ANZAC Day, Christmas & Easter Period) by lighting up Commonwealth Av Bridge, one of Canberra's most iconic landmarks.

The proposed luminaire COOLON Spectrum RGBW IP provides smooth colour changing in a compact form factor. This luminaire is often used for outdoor architectural lighting applications. It presents a quad-chip LED that allows colour mixing to occur in each diode, delivering a glow of each colour that is completely uniform in appearance.

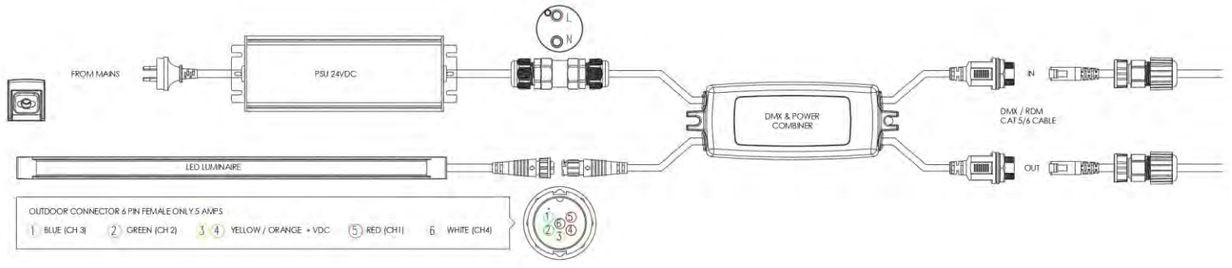
Colour on the bridge can be static or can change slowly on a cycle. Each luminaire can be individually controlled and therefore the creation of patterns is also possible via an array of colours. The final effect will depend on client preference, either simple where the sides of the bridge are illuminated in a single colour or, if an array of colours is preferred, this is also achievable.

LIGHT FITTING LOCATION D – COOLON RGBW LATITUDE IP

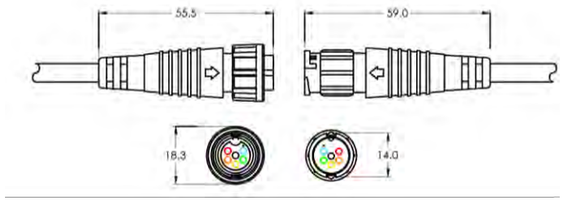




Luminaire selection and location must result from luminaire trials and testing.



Typical Wiring Diagram for RGBW – Quantities & Locations TBC
Drivers to be in weatherproof enclosure accessible from deck



Typical IP RGBW Connectors – Quantities & Locations TBC

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Proposed Lighting – Bridge Panels

project numer:
L174V – 30% ISSUE – 06

Rev:
A

Issue Date
21/04/23

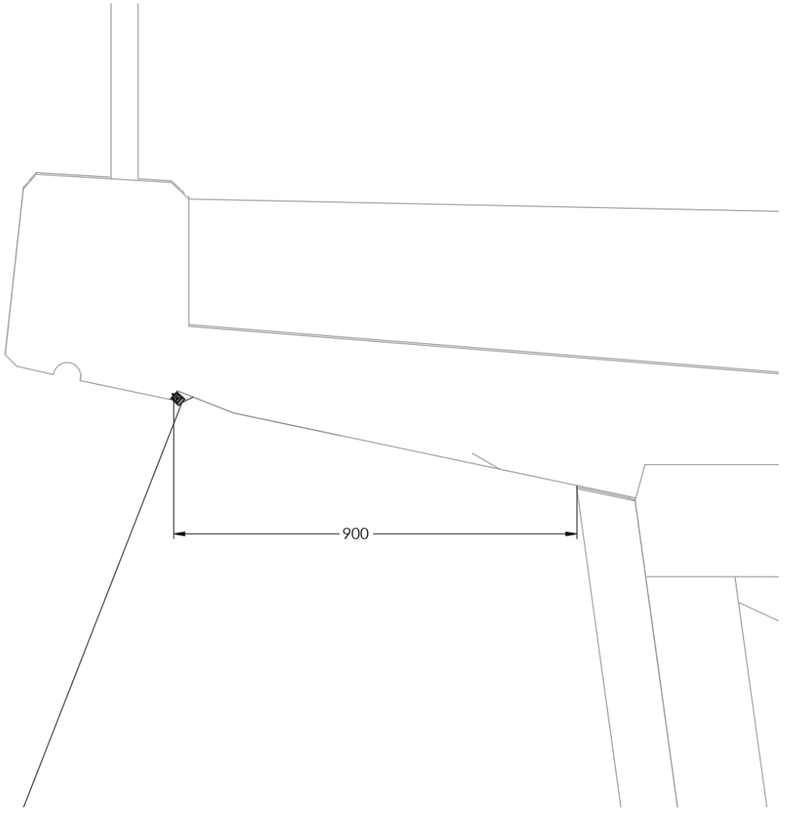
COMMONWEALTH AVENUE BRIDGE – ARCHITECTURAL LIGHTING

Proposed Lighting – BRIDGE PANELS – LOCATION D – ACCESS OPTION 1

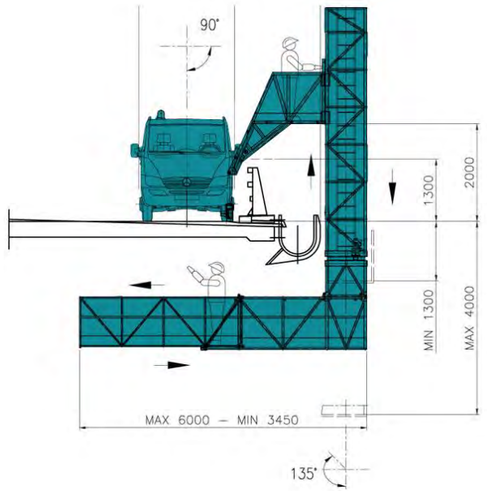
Access to the light fittings located on the underside of the bridge deck from the ground is not possible. Therefore, options to facilitate inspection, monitoring and repair or replacement of light fittings shall be considered and designed.

OPTION 1 – Under Bridge Inspection from Deck Level

Use of under bridge work platform to enable efficient and easy access to the underside of the bridge.



Indicative Location for Luminaire D



NOTES:

1) **Structural Design to be further developed to allow for the use of under bridge platforms at deck level**
2) **Final luminaire location in relation to the bridge side panel to be determined/confirmed after testing with luminaire samples**
3) **Light fittings installed along a CONTINUOUS line on the underside of the bridge deck**

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Proposed Lighting – Bridge Panels – Access Opt.1

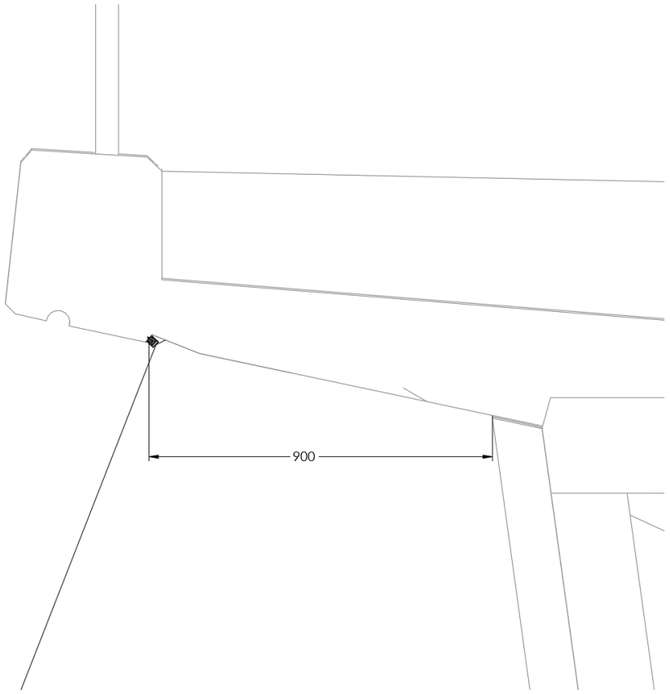
project numer:
L174V – 30% ISSUE – 07

Rev:
A

Issue Date
21/04/23

COMMONWEALTH AVENUE BRIDGE – ARCHITECTURAL LIGHTING

Proposed Lighting – BRIDGE PANELS – LOCATION D – ACCESS OPTION 2



Indicative Location for Luminaire D

Malcom Fraser Bridge, Canberra
Although the lighting is not continuous, the light wash on the panels is uniform

Access to the light fittings located on the underside of the bridge deck from the ground is not possible. Therefore, options to facilitate inspection, monitoring and repair or replacement of light fittings shall be considered and designed.

OPTION 2 – Luminaire D Inspection from access strips along deck

Another option to be considered is to access Type D luminaires through access rectangular hatches of 1.5m length at deck level (top).

The hatch can only be up to 1.5 m - 2.0 m total length on a 3.0m panel. It is not possible to have a continuous linear hatch for the luminaire installation/maintenance because structural elements are still required to support the external balustrade.

Access Option 2 proposal is somehow similar to today's bridge access to the parapet lighting, via hatches located at deck level.

Existing CAB access to parapet panel lighting

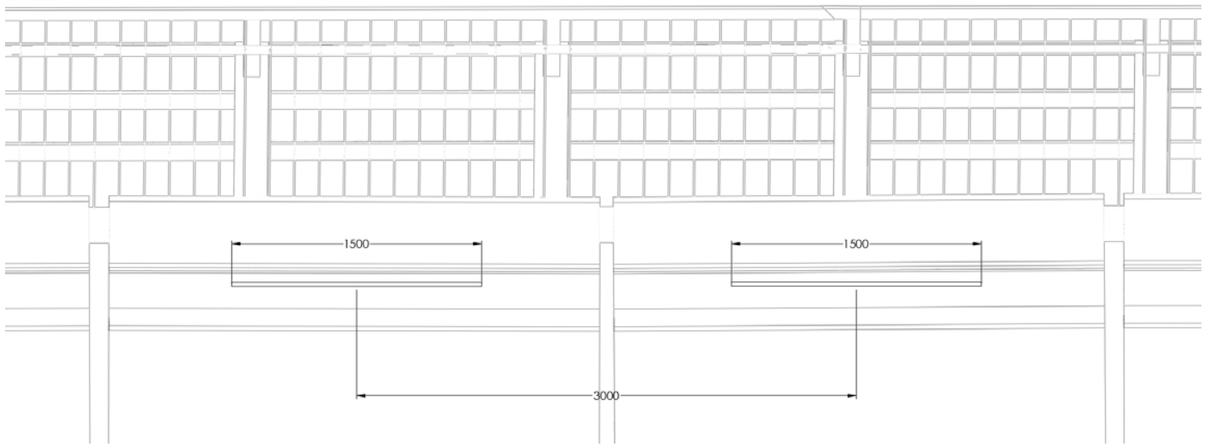


Illustration of 1500mm length luminaire RGBW Strip at 3000mm intervals

NOTES:

1) **Structural Design to be further developed to allow for the support of the external balustrade and maximize the luminaire length to be accessible from hatches**
2) **Since the hatch will present a shorter length than the panel, the light fitting will not be continuous**
3) **Final luminaire location in relation to the bridge side panel to be determined/confirmed after testing with luminaire samples to achieve an even wash on the panels avoiding hot spots**
4) **Testing will be required in order to guarantee a uniform light wash on the panels**
5) **The further the light is located from the angled bridge structure, the more uniform the light effect will be, avoiding hot spots & dark spots**

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Proposed Lighting – Bridge Panels – Access Opt.2

project numer:
L174V – 30% ISSUE – 08

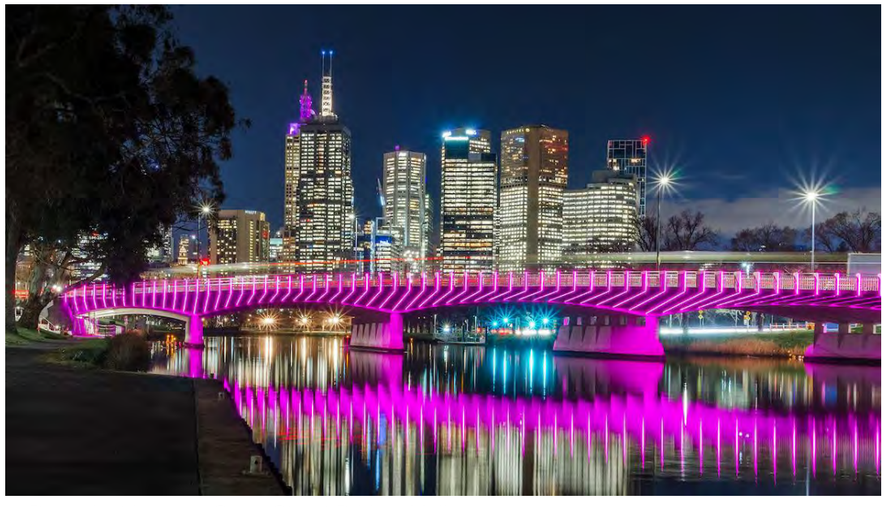
Rev:
A

Issue Date
21/04/23

COMMONWEALTH AVENUE BRIDGE – ARCHITECTURAL LIGHTING

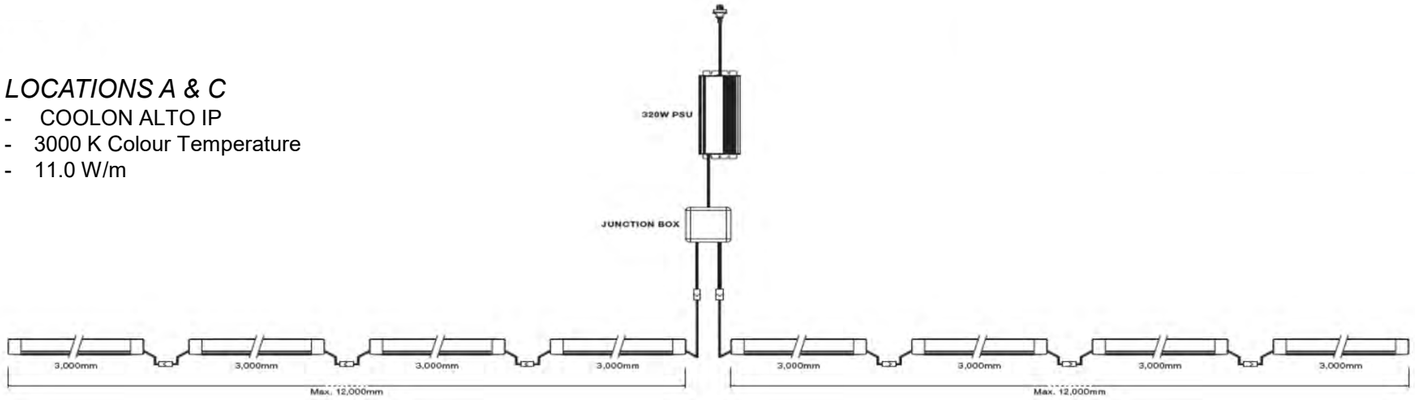
Proposed Lighting – GENERAL ARRANGEMENT, MAINTENANCE & WARRANTY

Precedent Image – Jim Stynes Underpass, Melbourne (River Street)
Coolon Electro IP Luminaire

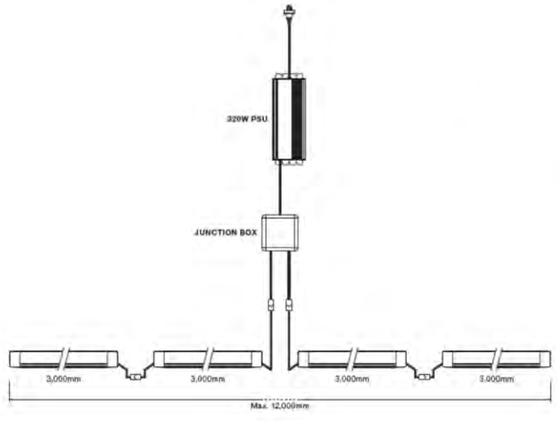


Precedent Image – Swan Street Bridge, Melbourne
Coolon Slim Luminaire

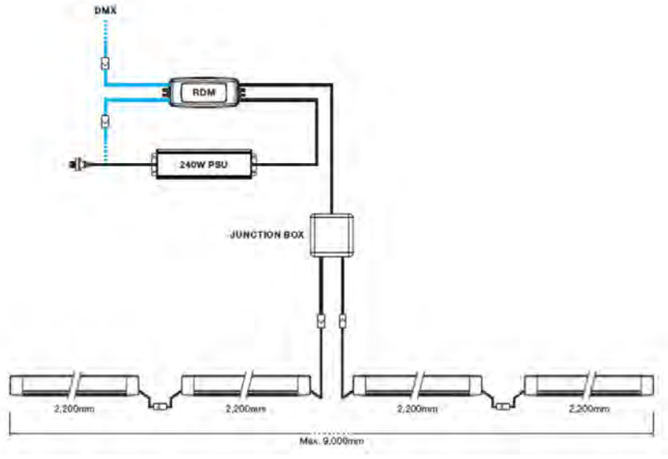
LOCATIONS A & C
- COOLON ALTO IP
- 3000 K Colour Temperature
- 11.0 W/m



LOCATION B
- COOLON RATIO IP
- 3000 K Colour Temperature
- 23.0 W/m
- Luminaire Profile identical to Locations A & C



LOCATION D
- COOLON SPECTRUM RGBW IP
- RGBW (Warm White)
- 20.6 W/m



NOTES:

1) **Coolon LED products are developed and manufactured in Australia. If luminaire replacement is required, shorter leads times to deliver luminaires to site will be necessary (when compared with European products, for example).**
2) **Coolon Alto IP, Ratio IP & Spectrum IP are IP66 rated (protected against multi-directional, high-pressure water jets) and IK rated IK08 (Protected against 5 joules of impact)**
3) **Generally, in similar lighting installations, the Power Supply Units (drivers) are typically the first to fail as they have capacitors in the control gear.**
4) **Coolon uses Meanwell power supplies which are provided with 7 year replacement warranty.**
5) **Power Supplies must be installed in serviceable locations for ease of replacement and maintenance.**
6) **Coolon luminaires are covered by a 5 year manufacturer's warranty that covers a range of possible defects and performance parameters throughout the duration of the warranty period.**
7) **The light output of an LED luminaire tends to gradually degrade over an extended period of time, compared to a fluorescent or incandescent light source which fails abruptly.**
8) **For the Type D Luminaire (which will be the most difficult to access) Coolon states that if the RGBW chips are powered 100% at an ambient temperature of 25 degrees the lumen maintenance is L70/B10@50,000 hours*. This is equivalent to say that if the profile was ON for 6 hours per day the luminaire would last approximately 23 years.**

** L70 means that the LED module will give 70 % of its initial luminous flux. This value is always related to the number of operation hours (50,000h). The L value is a statistical value, therefore the lumen maintenance may vary over the delivered LED modules. The B value defines the number of modules which are below the specific L value, e.g. L70B10 means 10% of the LED modules are below 70% of the initial luminous flux, respectively 90% will be above 70% of the initial value.*

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Proposed Lighting – Maintenance & Warranty

project numer:
L174V – 30% ISSUE – 09

Rev: A

Issue Date 21/04/23

COMMONWEALTH AVENUE BRIDGE – FUNCTIONAL LIGHTING

Functional Lighting – STREET LIGHTING

Commonwealth Avenue – North Section – Street Light Poles

Commonwealth Avenue – North Section – Street Light Poles

Approach to bridge Southbound

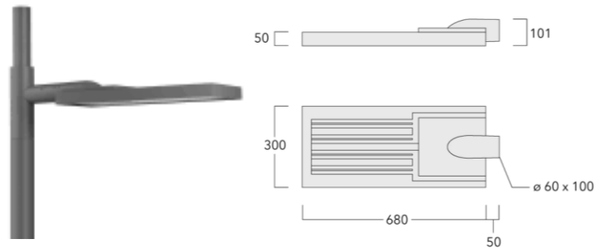
Streetlight adjacent to NE Pylon

Vertical light are not installed on the bridge. If required on the land north and south of the abutments, these should be located as far as possible from the pylons.

The existing concrete street light poles at the North end of the Bridge will require to be relocated as current locations will conflict with the proposed bridge approach ramps and stairs.

The relocation of these light poles is an opportunity to upgrade the existing luminaires to LED light fittings.

LIGHT FITTING OPTION 1 – We-ef VFL540-SE LED

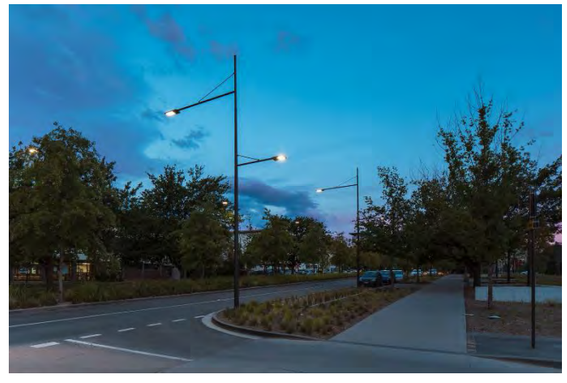


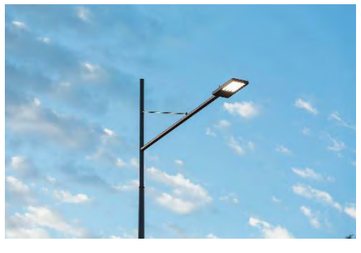
The proposed luminaires will match the light fittings used on Constitution Avenue, Canberra.

Light pole finish and height as well as luminaire type and finish should match Constitution Avenue lighting design so it reads consistently.

The pole can be either single sided or double sided.

- Single sided light pole to be used for street lighting exclusively.
- Double sided light pole to be used for street lighting & pathway/cycleway lighting (balanced with a higher-output streetlight on a 3.0m outreach arm on one side, and a lower output light on the opposite side on a shorter outreach arm illuminating the pathway/cycleway).





Constitution Avenue, Canberra – Existing Lighting

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Functional Lighting – Street Lighting

project numer:
L174V – 30% ISSUE – 10

Rev:
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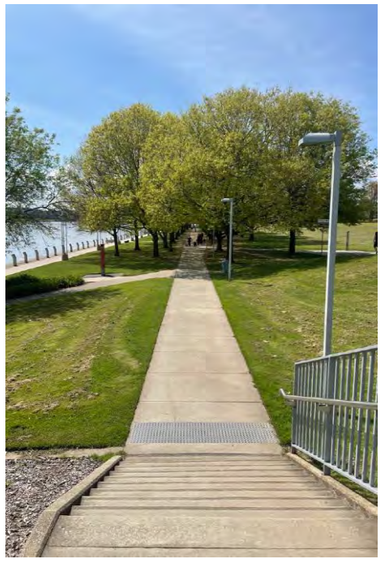
Issue Date
21/04/23

COMMONWEALTH AVENUE BRIDGE – FUNCTIONAL LIGHTING

Functional Lighting – BRIDGE APPROACHES
PATHWAYS AND CYCLIST PATHS LIGHTING

Existing Lighting on Barrine Drive



Stair connection to formal oak tree avenue

Stair connection to Commonwealth Park

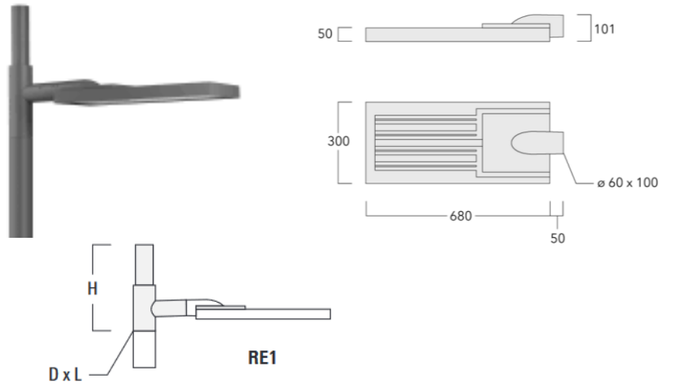
Contrary to the bridge, the bridge approaches, are currently lit via vertical light poles.

As per the imagery, stair connections to Commonwealth Park, to formal Oak Tree Avenue and Barrine Drive are illuminated by Post Top Lighting.

Compliance Lighting Requirements of AS/NZS 1158.3.1 are achievable in these areas.

The landscape approaches should be carefully sited to connect to the surrounding landscape. Therefore the upgrade of the existing light poles is recommended.

LIGHT FITTING OPTION 1 – We-ef VFL540-SE LED



It is proposed that the new luminaires across the landscape approaching the bridge should match the light fittings used on Henry Rolland Park, West Basin's park, located on the edge of Lake Burley Griffin. This would reflect a consistency of style and harmony between the areas.

Light pole finish and height as well as luminaire type and finish should therefore match Henry Rolland Park lighting so it reads consistently.

Luminaire – We-ef VFL540-SE (side entry)
Pathway Post Top Height – 6.0m
Post Top Finish – Electro Medium Bronze
Luminaire Finish – Dulux Anotec Mid Bronze
Pole Bracket – We-ef RE1

Precedent Images – Henry Rolland Park, Canberra

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Functional Lighting – Pathways & Cyclist Path Lighting

project numer:
L174V – 30% ISSUE – 11

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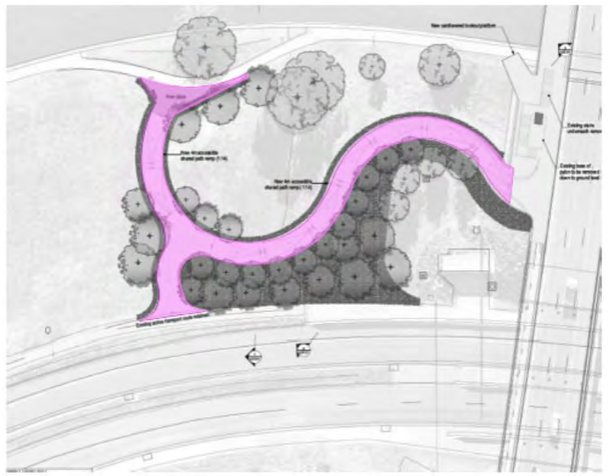
COMMONWEALTH AVENUE BRIDGE – FUNCTIONAL LIGHTING

Functional Lighting – INDICATIVE AREAS

Northern Approaches – Indicative areas with P-Category Lighting



Southwestern Approach – Indicative areas with P-Category Lighting

Southeastern Approach – Indicative areas with P-Category Lighting

There is an Australian Standard for public lighting, **AS/NZS1158** ***Lighting of roads and public spaces.*** The standard is not mandatory but gives a good benchmark for the design of lighting Installations.

The standard has several sections relating to lighting for vehicular traffic (V- Category) pedestrian traffic (P-Category) and supplementary lighting for pedestrian crossings.

AS/NZS1158.3.1, Part 3.1: Pedestrian area (Category P) lighting-Performance and design requirements specifies performance and design requirements for Category P lighting, namely, lighting of paths, minor roads, public domain and outdoor carparks. It assigns various levels of required performance based on an assessment of degree of activity, fear of crime and the required aesthetic appeal.

In order to comply with a lighting subcategory, relevant light technical parameters have to be met, namely:
- illuminance on the horizontal plane (minimum & average)
- uniformity of the illumination
- vertical illuminance at 1.5 meters above the ground

The vertical illuminance requirement is designed to assist identification of a person. It was originally designed to give a person advanced warning to assess whether someone else on the path was a friend of foe, while still at a reasonable distance to take evasive action and to increase the natural surveillance of the area.

AS/NZS 1558.3.1 requires that the calculations do not include any reflected light unless it is in a tunnel. This was done so the design did not include reflected light from walls, bushes, the canopy of trees (these may change throughout the year or even from season to season).
This means that the only light that is counted in the calculation is that coming directly from the light.

We suggest that conformance with lighting category PP2 – High Pedestrian/Cycle activity & Medium fear of crime (refer AS/NZS 1158.3.1 extracts) is adequate. Furthermore, we do not believe that it is necessary to light open grass areas. By having only the pathways lit, this will encourage people to use the paths and if these are adequate lit, anybody on the grass will be seen in silhouette.

LIGHTING SUBCATEGORIES FOR PEDESTRIAN AND CYCLIST PATHS

1	2	3	4	5
Type of pathway		Selection criteria[a,b,c]		Applicable lighting subcategory
General description	Basic operating characteristics	Pedestrian/ cycle activity	Fear of crime	
Pedestrian or cycle orientated pathway, e.g. footpaths, including those along local roads[d] and arterial roads[e], walkways, lanes, park paths, cyclist paths	Pedestrian and or cycle traffic only	N/A	High	PP1[c]
		High	Medium	PP2[c]
		Medium	Medium	PP3
		Medium	Low	PP4
		Low	Low	PP5

VALUES OF LIGHT TECHNICAL PARAMETERS FOR PATHWAYS AND CYCLIST PATHS

1	2	3	4	5
Lighting subcategory	Light technical parameters (LTP)			
	Average horizontal illuminance[a,b] ($\bar{E}_h$) lx	Point horizontal illuminance[a,b,d] (E_{Ph}) lx	Illuminance (horizontal) uniformity[c] Cat. P (U_{E2})	Point vertical illuminance[a,b] (E_{Pv}) lx
PP1	10	2	5	1
PP2	7	1	5	0.3
PP3	3	0.5	5	0.1
PP4	1.5	0.25	5	0.05[e]
PP5	0.85	0.14	5	0.02[e]

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Functional Lighting – Indicative Areas

project numer:
L174V – 30% ISSUE – 12

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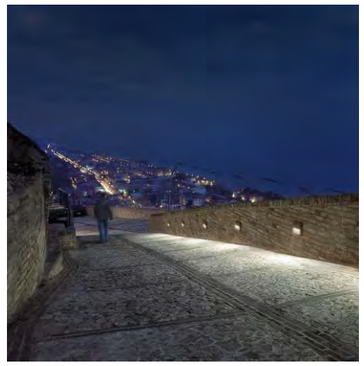
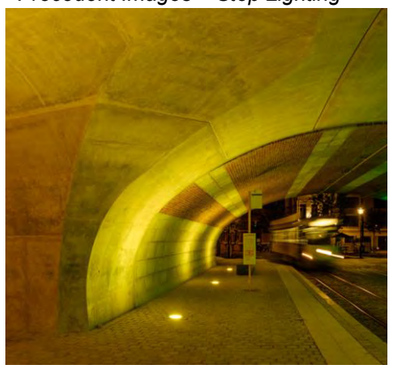
COMMONWEALTH AVENUE BRIDGE – EFFECT / DECORATIVE LIGHTING

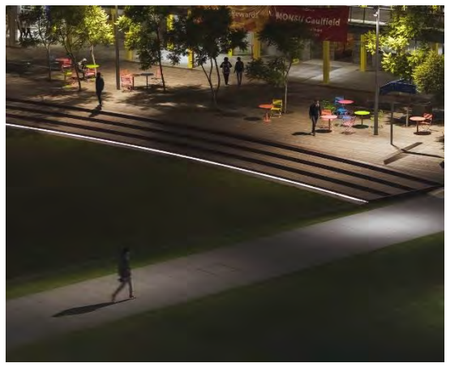
Effect / Decorative Lighting – LANDSCAPE ELEMENTS

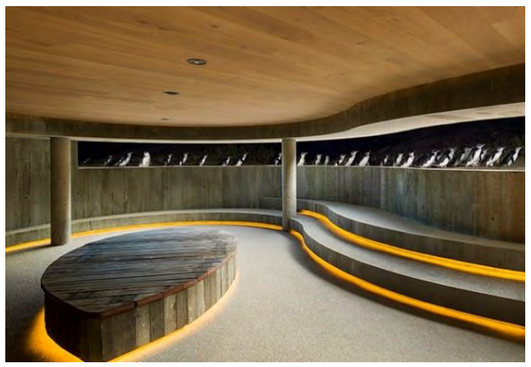


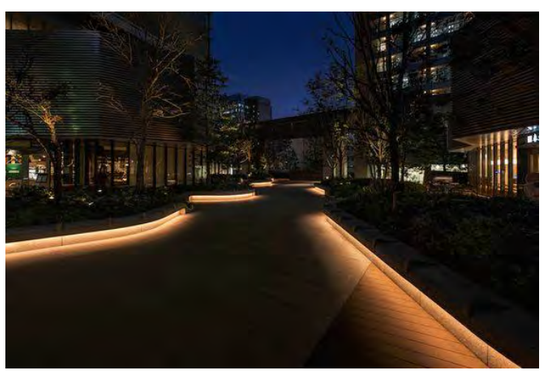
Precedent Images – Step Lighting



Precedent Images – Wall Uplighting







Precedent Images – Under Seat & Terraced Seat Lighting

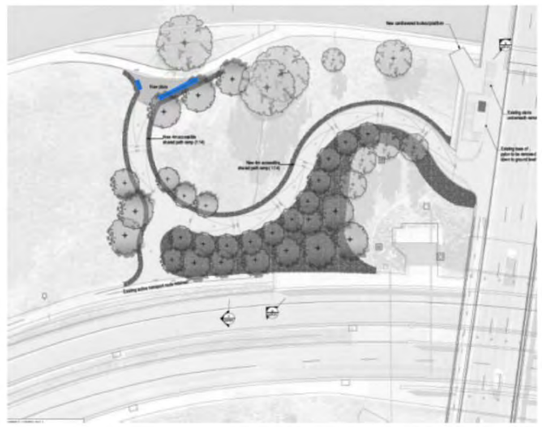
Effect lighting is installed to improve the visual interest in the space. Visual interest is important as it creates a unique character for the space and encourages occupants to utilise an area to its full capacity.

Effect lighting can include the lighting of walls, features and objects not specifically related to safe access through the site. It can also have a role in assisting wayfinding. It is also important to make people feel safe as it increases the night time field of view so that people can identify other people in the space. It makes people feel comfortable and encourages them to use the space rather than just pass through.

Some areas where feature lighting can be incorporated have been identified:
- Under Seat Lighting
- Terraced Seat Lighting
- Wall Uplighting (Northern Bridge Pylon Walls)

The following reference images and sketches illustrate feature lighting effects that can be integrated into the landscape.
- In blue, Under Seat & Terrace Seat Lighting
- In orange location for Wall Uplighting (Northern Bridge Pylon Walls)

Northern Approaches – Indicative Decorative Lighting



Southwestern Approach – Indicative Decorative Lighting

Southeastern Approach – Indicative Decorative Lighting

project:
Commonwealth Av Bridge – Light Upgrade

drawing:
Effect / Decorative Lighting – Landscape Elements

project numer:
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