POWERHOUSE PARRAMATTA
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX D
DESIGN EXCELLENCE REPORT

Powerhouse Museum

NSW GOVERNMENT

POWERHOUSE PARRAMATTA

DESIGN EXCELLENCE REPORT

NSW GOVERNMENT

Museum of Applied Arts & Sciences

The Powerhouse acknowledges Australia's First Nations Peoples as the Traditional Owners and Custodians of the land and gives respect to the Elders – past and present – and through them to all Aboriginal and Torres Strait Islander peoples.

The Powerhouse recognises the Dharug as the Traditional Owners and Custodians of the land on which the new museum will be located and acknowledges the welcome and permission that has been given by their Elders to do the business of the museum on Dharug Nura.

David Moore, Sydney Harbour from 20,000 feet (1992) (detail) © Lisa, Michael, Matthew and Joshua Moore

Cover image: Moreau Kusunoki and Genton

CONTENTS

Appendices

1. INTRODUCTION

This report supports a State Significant Development (SSD) Development Application (DA) for the development of the Powerhouse Parramatta at 34–54 & 30B Phillip Street and 338 Church Street, Parramatta. The Powerhouse Parramatta is a museum (information and education facility) that has a capital investment value in excess of $30 million and as such the DA is submitted to the Minister for Planning pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Infrastructure NSW is the proponent of the DA.

2. BACKGROUND

The Powerhouse is Australia's contemporary museum for excellence and innovation in applied arts and sciences. The museum was established in 1879 in the Garden Palace which emerged from a history of 19th Century grand exhibition halls, including the Grand Palais. It currently encompasses the Powerhouse in Ultimo, Sydney Observatory in The Rocks and the Powerhouse Castle Hill. The Powerhouse has occupied the Ultimo site since 1988.

Parramatta, in the heart of Western Sydney, is entering a period of rapid growth. It was identified in 2014's *A Plan for Growing Sydney* as the metropolis' emerging second Central Business District, with the provision of supporting social and cultural infrastructure regarded as integral to its success. The strategic importance of Parramatta as an economic and social capital for Sydney has been subsequently reinforced and further emphasised through its designation as the metropolitan centre of the Central City under the *Greater Sydney Region Plan*.

Powerhouse Parramatta will be the first State cultural institution to be located in Western Sydney – the geographical heart of Sydney. In December 2019, the Government announced the winning design, by Moreau Kusunoki and Genton, for the Powerhouse Parramatta from an international design competition.

Powerhouse Parramatta will establish a new paradigm for museums through the creation of an institution that is innately flexible. It will become a national and international destination renowned for its distinctive programs driven by original research and inspired by its expansive collections. It will be a place of collaboration, a mirror of its communities forever embedded in the contemporary identity of Greater Sydney and NSW.

3. SITE DESCRIPTION

The site is located at the northern edge of the Parramatta CBD on the southern bank of the Parramatta River. It occupies an area of approximately 2.5 hectares and has extensive frontages to Phillip Street, Wilde Avenue and the Parramatta River. A small portion of the site extends along the foreshore of the Parramatta River to the west, close to the Lennox Street Bridge on Church Street. The site boundary is identified in **Figures 1 and 2**. The site excludes the GE Office Building at 32 Phillip Street.

The site is currently occupied by a number of buildings and structures, including:

— Riverbank Car Park – a four-level public car park

— Willow Grove – a two-storey villa of Victorian Italianate style constructed in the 1870s

— St George's Terrace – a two-storey terrace of seven houses fronting Phillip Street constructed in the 1880s

— 36 Phillip Street – a two-storey building comprising retail and business premises

— 40 Phillip Street – a two-storey building comprising retail and business premises

— 42 Phillip Street – a substation building set back from the street

The immediate context of the site comprises a range of land uses including office premises, retail premises, hotel, serviced apartments and residential apartments. To the north is the Parramatta River and open space corridor, beyond which are predominately residential uses. Riverside Theatres is located to the north-west across the Parramatta River.

Figure 1.
Aerial photograph of the site and its context
Source: Mark Merton Photography

Figure 2.
Site boundary, key existing features, and immediate local context
Source: Ethos Urban

4. OVERVIEW OF PROPOSED DEVELOPMENT

The Powerhouse was established in 1879, and Powerhouse Parramatta will radically return to its origins through the creation of seven presentation spaces of extraordinary scale that will enable the delivery of an ambitious, constantly changing program that provides new levels of access to Powerhouse Collection. The Powerhouse will set a new international benchmark in experiential learning through the creation of an immensely scaled 360-degree digital space, unique to Australia.

Powerhouse Parramatta will reflect the communities and cultures of one of Australia's fastest growing regions. It will hold First Nations culture at its core and set a new national benchmark in culturally diverse programming. The Powerhouse will be highly connected through multiple transport links, and integrate into the fine grain of the city.

Powerhouse Parramatta will be an active working precinct and include the Powerlab, which will enable researchers, scientists, artists and students from across regional NSW, Australia and around the world to collaborate and participate in Powerhouse programs. The Powerlab will feature digital studios to support music and screen industries alongside co-working spaces, life-long learning and community spaces. Integrated into the Powerlab will be a research kitchen and library that will support a NSW industry development program including archives and oral histories.

This application will deliver an iconic cultural institution for Parramatta in the heart of Sydney's Central City. The SSD DA seeks consent for the delivery of the Powerhouse Parramatta as a single stage, comprising:

— site preparation works, including the termination or relocation of site services and infrastructure, tree removal and the erection of site protection hoardings and fencing;
— demolition of existing buildings including the existing Riverbank Car Park, 'Willow Grove', 'St George's Terrace' and all other existing structures located on the site;
— construction of the Powerhouse Parramatta, including:
  • seven major public presentation spaces for the exhibition of Powerhouse Collection;
  • front and back-of-house spaces;
  • studio, co-working and collaboration spaces comprising the 'Powerlab', supported by 40 residences (serviced apartments) for scientists, researchers, students and artists, and 60 dormitory beds for school students;
  • education and community spaces for staff, researchers and the Powerlab residents, the community, and education and commercial hirers;
  • commercial kitchen comprising the 'Powerlab Kitchen' used for cultural food programs, research, education and events;
  • film, photography, and postproduction studios that will connect communities with industry and content that will interpret the Powerhouse Collection;
  • public facing research library and archive for community, industry, students and researchers to access materials; and
  • a mix of retail spaces including food and drink tenancies with outdoor dining.
— operation and use of the Powerhouse Parramatta including use of the public domain provided on the site to support programs and functions;
— maintenance of the existing vehicular access easement via Dirrabarri Lane, the removal of Oyster Lane and termination of George Khattar Lane, and the provision of a new vehicular access point to Wilde Avenue for loading;
— public domain within the site including new public open space areas, landscaping and tree planting across the site; and
— building identification signage.

The project does not seek consent for the carrying out of works outside of the site boundary, and in particular does not involve any alterations to the existing edge of the formed concrete edge of the Parramatta River or to the waterway itself.

5. ASSESSMENT REQUIREMENTS

The Department of Planning, Industry and Environment have issued Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement for the proposed development. This report has been prepared having regard to the SEARs as follows:

SEAR	Where Addressed
2. Design Excellence The EIS shall include a Design Excellence Strategy prepared in consultation with the Government Architect NSW and City of Parramatta Council.	Section 6 Appendix A: Approved Design Excellence Strategy
The Strategy shall demonstrate how the development, including the public domain, achieves design excellence, in accordance with PLEP 2011.	Section 8
The Strategy shall document how the proposal has been subject to a competitive design process and include the endorsed design competition brief, Jury conclusions report and proposal for a design integrity process.	Section 7 Appendix B: Competition Brief Appendix C: Jury Report Section 9: Design Integrity
3. Built form, heritage and urban design Outline the design process which informed the proposal including justification and analysis of the benefits and impacts of the proposal and any alternative schemes considered, including any designs which could have retained Willow Grove and St George's Terrace	Section 9

6. DESIGN EXCELLENCE STRATEGY

The *New Museum Design Excellence Strategy* (Strategy) was approved by the (then) Department of Planning and Environment in December 2018. It documents the process by which a design competition for Powerhouse Parramatta was to be undertaken to meet the requirements of the *Parramatta Local Environmental Plan 2011*. The Strategy outlines a process involving a two-stage international competition and an ongoing design integrity process.

As the site for Powerhouse Parramatta is located within the CBD of Parramatta, the provisions of the *Parramatta Local Environmental Plan 2011* (LEP) apply. Under the LEP, thresholds apply in relation to the requirement to undertake a competitive design process within clause 7.10 – Design Excellence – Parramatta City Centre. The LEP requires that the competitive design process be undertaken in accordance with procedures approved by the Secretary of the Department of Planning and Environment.

The Powerhouse Parramatta project is unique and significant to Sydney, New South Wales and Australia. It was therefore deemed essential that a wide search be conducted to find the best possible design team. A two-stage competition process was chosen with a first stage open Expression Of Interest (EOI) process followed by a shortlist of entrants invited to participate in Stage 2 and respond to a detailed brief.

The design competition undertaken for Powerhouse Parramatta aligns with competition types described under the *Director-General's Design Excellence Guidelines 2011*, *Government Architect's Design Excellence Competition Guidelines (Draft) 2018*, and *Guidelines for the Conduct of Architectural Competitions, Australian Institute of Architects, 2016*.

The Design Excellence Strategy was endorsed by the Government Architect and the City of Parramatta Council.

7. THE DESIGN COMPETITION PROCESS

COMPETITION JURY
A competition Jury was established comprising members with experience in architecture, urban design, museum design, business and cultural institutions operation, government representatives as well as a representative from City of Parramatta Council. The Jury included:

— **Naomi Milgrom AO** (Jury chair), Business Leader, Philanthropist
— **Kim Crestani**, City Architect, City of Parramatta Council
— **David Gianotten**, Managing Partner – Architect, OMA
— **Lisa Havilah**, Chief Executive, Powerhouse
— **Wendy Lewin FRAIA**, Principal, Wendy Lewin Architect
— **David Riches**, (former) Head of Projects, Infrastructure NSW
— **Jeanne Gang**, Founder and Principal, Studio Gang

The Jury was supported by the following specialist advisers:

— **Malcolm Reading**, Chairman, Malcolm Reading Consultants
— **Sarah Lynn Rees**, Indigenous Advisor, Architecture and Design

The Stage 1 competition Jury included:

— **Naomi Milgrom AO** (Jury chair) Business Leader, Philanthropist
— **Kim Crestani**, City Architect, City of Parramatta Council
— **David Gianotten**, Managing Partner – Architect, OMA
— **Lisa Havilah**, Chief Executive, Powerhouse
— **Wendy Lewin FRAIA**, Principal, Wendy Lewin Architect
— **David Riches**, (former) Head of Projects, Infrastructure NSW

Jury members were selected on the basis of experience relevant to the project and confirmation that no actual or perceived conflicts of interest exist that prevent them from participating as a Jury member.

Procedures for the Jury were established and endorsed by the Jury prior to receipt of the competition Stage 1 entries.

STAGE 1 – EXPRESSION OF INTEREST
Stage 1 of the design competition opened in January 2019 as a call for participation aimed at attracting the very best design talent to register their interest in the project. Stage 1 was open to qualified architects and their creative collaborators who met the requirements as described below:

— One of the submitting architectural firms was to have experience and demonstrated capability as a lead architect on a built project of comparable complexity and program of at least AUD $200M. This example project did not need to be a museum or cultural project; and large-scale examples such as health, education, residential or commercial projects could be provided.
— If a firm could not partner with an architectural firm that had the experience and demonstrated capability as a lead architect on a built project of comparable complexity and program of at least AUD $200M, the firm was required to articulate to the shortlisting panel the reason why they believe they could deliver a buildable, memorable facility exemplifying design excellence within the construction budget for the base building, public realm and pedestrian bridge (set at AUD $400M) including supporting evidence.
— An eligible collaboration was to include a team led by either a local or international architect which includes an architect with experience of delivering a comparable project with a budget of at least AUD $200M (or acceptable alternative).
— All teams were to include an architectural practice that is registered in Australia.

The purpose of Stage 1 was not to seek a design but to ensure the capability of the teams permitted to proceed to the Stage 2 process.

The Stage 1 competition attracted 74 expressions of interest involving 529 individual firms from 20 countries.

A shortlist of six teams was announced in May 2019:

— **AL_A** (UK) and **Architectus** (Australia)
— **Bernardes Architecture** (Brazil) and **Scale Architecture** (Australia)
— **BVN Architecture** (Australia) and **Carlo Ratti Associati** (Italy)
— **CHROFI** (Australia) with **Reko Rennie** (Australia)
— **Moreau Kusunoki** (France) and **Genton** (Australia)
— **Steven Holl Architects** (United States) and **Conrad Gargett** (Australia)

STAGE 2 – DESIGN CONCEPT

Stage 2 was an intensive design period for the six shortlisted teams. The teams received detailed briefing information and were invited to a site visit and briefing in Parramatta. The shortlisted teams were provided with a detailed project brief. The Powerhouse Parramatta Stage 2 Brief presented a strong vision for a radical return to the Powerhouse Museum's origins through the creation of large-scale flexible exhibition spaces that support high visitor numbers, engage communities with new technologies and provide opportunities for collaboration and exchange. The brief described a diverse, responsive, and immersive precinct to allow for 24-hour activation and fluid integration into the city fabric. The built form intent is defined as expansive, flexible and robust to allow for multiple programmatic and operational options.

The brief provided detailed functional requirements for the exhibition and auxiliary spaces as well as urban design context and technical analysis.

In response to the Stage 2 Brief, each team submitted a concept design. A Technical Panel conducted a technical assessment of the schemes, which was provided to the Jury for their consideration. The Jury met in November 2019 to interview the shortlisted teams, and chose the team led by Moreau Kusunoki and Genton as the winner of the competition.

The winning design by Moreau Kusunoki (France) and Genton (Australia) was announced in December 2019. The Jury was unanimous in their decision and commended the proposal for its elegant design and strong identity. The Jury commented that the generosity of space, transparency and lightness of the structure will create a 'sense of joy' that encapsulates the ambitions of Powerhouse Parramatta.

Hiroko Kusunoki, Nicolas Moreau and Steven Toia. Photo: Daniel Boud

JURY CONCLUSIONS REPORT

The Competition Jury is unanimous in recommending the team of Moreau Kusunoki and Genton as the winner of the Powerhouse Parramatta International Design Competition.

The Jury found the proposal to be a standout, simple and elegant solution, with a strong identity derived from the building's architecture and structure. The generosity of space, transparency and lightness of the structure created a 'sense of joy' that encapsulates the ambitions of the Powerhouse Parramatta.

The public realm was considered to be generous and welcoming, with the potential to develop into an exceptional open space for Parramatta, incorporating a clear continuation of the civic link and connecting the city and the river. The design maximised the public realm and incorporated spectacular views of the surrounding city and landscape.

In response to initial engagement undertaken with the Powerhouse and the local Indigenous communities, the design proposes to include Indigenous elements with a specific focus on teaching and learning, celebrating the sophistication of Indigenous knowledge from this place, through time. The team demonstrated a strong understanding and willingness to engage with local Indigenous communities to further enrich the project throughout the next stages of the design process.

The Moreau Kusunoki and Genton team was inspired by the Japanese concept of 'mâ' – an in-between space which is undefined and activated by its users. This concept was reflected across the design in the inclusion of spaces throughout the building described by the team as: 'a quiet place for reflection, a lively place for interaction, a safe, neutral space for meetings, conversations and the creation of new shared memories'.

The placement of circulation within the building is intuitive and visual, overlooking the main public space of the scheme and setting up a direct relationship between the movement of people and the theatre of public space.

The Jury noted that the Chief Executive of the Powerhouse Museum and the project team look forward to working with the Moreau Kusunoki and Genton team during Stage Three to provide direct input and collaboratively develop the design.

The Jury warmly endorses the Moreau Kusunoki and Genton team's attitude to linking across the river and to improving the riverine setting. The scheme showed exceptional promise in this respect. The Jury anticipates that the integration of the wider landscape offers the potential for improved value and placemaking for the city of Parramatta.

The Jury praised all of the finalists for their hard work and commitment to the project and noted the high level of response received from all design teams. The Jury wished to record their appreciation of the outstanding quality of the finalist submissions.

Naomi Milgrom AO
Chair, Powerhouse Parramatta
International Design Competition Jury

Image: Moreau Kusunoki and Genton

8. DEMONSTRATION OF DESIGN EXCELLENCE

A fundamental aim of the competition process for the Powerhouse Parramatta was the achievement of design excellence.

An assessment of the proposal against the design excellence requirements of the Parramatta LEP is as follows:

Design Excellence Consideration	Addressed
Whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved.	The building articulation is characterised primarily by the light coloured steel latticework which envelopes the building mass. Its consistency in material, expression and detailing provide a unified character. The structural lattice, which is the main element of the architectural expression, differs from level to level, adding to the recognisable character of each, and becoming lighter as it moves up. Complementing the efficient and flexible steel lattice structure, the materiality of walls in the solid parts of the building link back to the land, the site, and Country. The proposal seeks to create a unique and site-specific earthy material, with aggregates that could be found on the site, and pigments of White Ochre, a significant and very symbolic substance in aboriginal culture.
Whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain.	The building seeks to provide a public internal facility while framing a new and exciting public domain at the river foreshore which is cohesively tied to the existing network of public spaces. The building is further characterised by visual and physical transparency. The arrangement of spaces enables public movement throughout most of the building starting with a highly permeable ground plane supported by active retail to a publicly accessible rooftop on top of the eastern building and an elevated external terrace in the western building.
Whether the proposed development detrimentally impacts on view corridors.	The proposal does not impact view corridors identified in the planning framework, including in the Parramatta DCP 2011. In relation to other view corridors identified through site analysis, the visual impact assessment finds that the proposal: — does not impede linear views along the Parramatta River corridor or its associated parklands. — continues the strong built CBD edge to the river established by the adjoining aspire complex, serving to better define the river corridor as a distinct view corridor. — maintains the existing view corridor between the CBD and river via Dirabarri Lane. — creates a new view corridor at the ground plane between the CBD and river through the extension of the Civic Link aligned with Horwood Place.

Design Excellence Consideration	Addressed
How the development addresses the suitability of the land for development.	The proposed Powerhouse Parramatta museum is compatible with the current zoning of the site and is consistent with adopted strategic planning documents including Parramatta CBD Planning Strategy, 2015.
How the development addresses the existing and proposed uses and use mix.	The immediate context of the site comprises a range of land uses including office premises, retail premises, hotel, serviced apartments and residential apartments. To the north is the Parramatta River and open space corridor, beyond which are predominantly residential uses. The Riverside Theatre is located to the north-west across the Parramatta River. The proposed development is permissible within the current zoning of the site and complements the diverse urban uses in the surrounding precinct.
How the development addresses any heritage and archaeological issues and streetscape constraints or opportunities.	A process of investigation, consultation and assessment with regard to Aboriginal cultural heritage, Aboriginal archaeology, European cultural heritage and archaeology was undertaken for the Powerhouse Parramatta study area and proposed development works. The potential impacts were evaluated and mitigation measures are proposed. These include heritage interpretation, further archaeological investigation, and conservation methodology. For further detail please refer to the *Statement of Heritage Impact*, *Aboriginal Cultural Heritage Assessment Report* and *Heritage and Historical Archaeological Research Design* report.
How the development addresses the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form.	The proposed building pair sits below the maximum height for the site with a higher Western building and step down to the Eastern Building. The height and stepped composition of the pair provide a transition from the higher Meriton towers to the North East to the smaller developments East of Wilde Avenue.

Design Excellence Consideration	Addressed
How the development addresses the bulk, massing and modulation of buildings.	The proposed building height and mass responds to key aspects of the existing condition as well as the urban vision for Powerhouse Parramatta. The building area is split into two volumes to frame and reinforce the Civic Link. These are staggered by setting back the eastern volume. The height of the two masses is then determined by the inclined height plane established by Altitude by Meriton and Meriton Suites Church Street towers to the west and provides a gradual transition in scale to the smaller developments to the east of Wilde Avenue. The massing and architectural expression positions itself to align with the intricate fabric of the Parramatta CBD as well as the natural course of the Parramatta River. The architecture responds directly to its program and cultural significance to the City of Parramatta, Western Sydney and NSW more broadly. The massing intentionally breaks the podium character of the neighbouring residential to distinguish the vastly different use and level of public importance of Powerhouse Parramatta.
How the development addresses street frontage heights.	The proposed buildings sit along Phillip Street and Wilde Avenue with the two building volumes arranged around the alignment of the Civic Link. The two buildings reinforce and formalise the eastern and western street walls that define the Civic Link, channelling pedestrian movement directly into the Riverfront and the river foreshore. An interconnecting bridge sails overhead, servicing a pragmatic need to connect both buildings as well as reinforcing the urban role of the building acting as the threshold and gateway between the city and the river. The massing intentionally breaks the podium character of the neighbouring residential to distinguish the vastly different use and level of public importance of Powerhouse Parramatta. The proposal presents a unified façade with fine architectural detailing which is generously set back from Phillip Street and Wilde Avenue. The southern façade is setback from Phillip Street to create public space and forecourt. The ground level façade has a series of large operable doors that will afford views from Phillip Street into the presentation space, right through to the public terrace and Parramatta River beyond. The architecture clearly defines the proposal as a cultural building and the additional forecourt space enhances that legibility. The forecourt space functions as part of an arrival space for the presentation space as well as managing the arrival and departure of passengers on buses and coaches. The eastern edge of the proposal is setback from Wilde Avenue to provide a more generous public domain addressing the approach to Barry Wilde Bridge and opening up access to the river front.

Design Excellence Consideration	Addressed
How the development addresses environmental impacts, such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity.	Solar analysis of the proposal indicates that the proposal largely preserves solar access to the river foreshore with some overshadowing only in the summer afternoons. The studies indicate that the existing adjacent buildings cast some shadows throughout the day, from south-west to south-east. The proposed building will add minimal additional overshadowing. Noise and acoustic impacts during construction and operation have been assessed, mitigation measures have been recommended where required and resulting noise from these operations have been assessed are predicted to comply with established noise criteria. Wind assessment for the precinct was undertaken in preparation of this submission. The wind comfort and safety conditions around the site are considered suitable for the intended use of these spaces. The reflectivity assessment shows that proposed development is unlikely to result in unacceptable glare on the main traffic routes around the building, pedestrians or surrounding buildings.
How the development addresses the achievement of the principles of ecologically sustainable development.	The project's commitment to achieving a Green Star rating will provide a clear framework on which best practice sustainable building principles can be applied to the construction and operations of Powerhouse Parramatta. The strategy will ensure the building is high-performing environmentally, reduces local ecological impact, minimises energy use and greenhouse gas emissions, and implements climate resilience measures. These strategies will be realised through focused ESD initiatives involving building design that considers optimised building envelope, renewable energy generation, waste management, and climate change projections. In addition, the initiatives will design for sustainable operations, such as efficient mechanical systems, reduced potable water usage, and sustainable modes of transport.
How the development addresses pedestrian, cycle, vehicular and service access and circulation requirements, including the permeability of any pedestrian network.	Powerhouse Parramatta will be serviced by several public transport networks including train, ferry, buses and light rail. Vehicular access is readily supported along Phillip Street. Powerhouse Parramatta is tightly interwoven with the existing network of pedestrian routes. Pedestrian connections into the site will be further reinforced once the Civic Link and the river front approach are developed in line with the Parramatta CBD Pedestrian Strategy 2017 and other corresponding frameworks. For patrons and visitors to Parramatta arriving by ferry, Powerhouse Parramatta, by way of its positioning, urban design and visual presence, can also serve as the gateway to the broader city. From all directions, the development functions as an urban filtering device, enriching the public domain experience of both visitors and passers-by.

Design Excellence Consideration	Addressed
How the development addresses the impact on, and any proposed improvements to, the public domain.	The permeability of the site establishes connections with the adjacent public and civic venues including Parramatta Riverside Theatres, Bankwest Stadium, Prince Alfred Square, Parramatta Town Hall, Western Sydney University and Westfield Parramatta. The landscape treatment also integrates with a broader network of public open space, including the Parramatta River Corridor, Parramatta Square, Parramatta Park and Lake Parramatta. These connections and significantly the presence of Powerhouse Parramatta is formative in creating a cultural precinct along the Parramatta River, connecting public space of the city back to the water's edge.
How the development addresses the impact on any special character area.	The direct physical and visual connections between Powerhouse Parramatta, the park and Parramatta River, invite users to interact with the river landscape. Visitors to Powerhouse Parramatta come across different opportunities to engage with the river, from the riverfront to panoramic views from the terrace and rooftop.
How the development addresses achieving appropriate interfaces at ground level between the building and the public domain.	Powerhouse Parramatta offers a series of connected public domain spaces. The terrace extends north from Presentation Space 1, providing an elevated platform for the public to congregate and take part in open air activities. This public space acts as a focal point for activity and consequently supports and reinforces activation across Powerhouse Parramatta. The riverfront extends under the terrace providing an opportunity for shaded and weather protected space. The volume of this space also supports a resilient design for the site and for the city, by accommodating flood waters in accordance with flood modelling requirements. A concentration of retail and front of house uses positioned on either side of the Civic Link work together with the passive framing provided by the building and overhead bridge to create a unique sense of place. One that responds to the urban context of the city and the more natural setting of the Parramatta River. Dirrabarri Lane positioned at the western edge of Powerhouse Parramatta, supports the establishment of a network of laneways and public spaces which stitch Powerhouse Parramatta into the surrounding urban fine grain.
How the development addresses excellence and integration of landscape design.	Powerhouse Parramatta's ground plane serves as a seamless continuation of the surrounding streetscape and public domain. An inviting, barrier free, urban lounge, openly welcoming visitors in. It acts as a central place in the urban fabric, a destination for pause and reflection. The controlled porosity of Powerhouse Parramatta, and its mixture of uses, contributes to a secure day and night-time community. Powerhouse Parramatta precinct offers a safe place for all members of the community to meet, engage and inform its evolution.

9. DESIGN ALTERNATIVES

Alternative designs for Powerhouse Parramatta were considered by the Competition Jury as part of the International Design Competition process.

The Powerhouse Precinct at Parramatta International Design Competition was a two-stage process which began with an open Expression of Interest. The competition's objective was to identify and select an outstanding design team and concept design for Powerhouse Parramatta.

The competition brief requested design teams consider aspects of heritage and cultural significance within their submissions, including local heritage items. Other considerations included the activation of transport and pedestrian access consistent with the City of Parramatta Council's vision for a Parramatta Civic Link.

The submitted concept designs made clear that it is not possible to deliver on the design ambitions of the brief and deliver connectivity while retaining local heritage items. While the retention of heritage was considered carefully during the judging process, the Jury was unanimous in its decision on the final chosen concept.

The winning design will reflect and engage with the multiple histories of the site including its Indigenous histories. These histories will be considered and interpreted throughout the next stage of the design process

The competition was run in accordance with the procurement requirements of the NSW Government and was formally endorsed by the Australian Institute of Architects. In addition, the competition was managed by independent competition specialists Malcolm Reading Consultants.

10. DESIGN INTEGRITY

DESIGN TEAM ENGAGEMENT
The project proponent has initiated a Design Integrity Process in accordance with the Design Excellence Strategy approved by Department of Planning and Environment in December 2018. This process is designed to ensure the integrity of the winning entry is maintained throughout the all stages of the project including development application through to construction. The proponent has appointed by Moreau Kusunoki and Genton in collaboration with McGregor Coxall. The design team will be responsible for design development through to construction.

DESIGN INTEGRITY PANEL
A Design Integrity Panel has been established comprising members of the Design Competition Jury to provide assurance at regular milestones that design integrity is being maintained. To ensure the quality of the winning design is maintained through all development approval stages and construction, the Design Integrity Panel will review the design at the following stages at a minimum:

— During the pre-lodgement stage
— During the Development Application stage
— Prior to construction
— Prior to occupation
— Prior to lodgement of any planning modification which modifies the design

The Powerhouse Parramatta Design Integrity Panel (DIP) comprises of:

— **Naomi Milgrom AO**, Independent Chair
— **Peter Poulet**, Central City District Commissioner, Greater Sydney Commission, Trustee Museum of Applied Arts and Sciences
— **Kim Crestani**, Parramatta City Architect
— **Wendy Lewin FRAIA**, Independent Architect

The DIP is responsible for championing design excellence throughout the development of Powerhouse Parramatta. In particular the panel will:

— Provide independent, expert and impartial advice in relation to the achievement of design excellence;
— Ensure the design integrates with the City of Parramatta, providing a unique precinct design that seamlessly blends with its surrounds;
— Interrogate and provide comment on the processes employed to deliver design excellence;
— Provide advice and inform the project team on aspects of project delivery that will assist in the achievement of design excellence; and
— Assess the design at regular intervals to interrogate decision-making to ensure all reasonable alternative design solutions have been explored.

The DIP has reviewed the design in accordance with the Design Excellence Strategy. A DIP report is provided in Appendix C.

Image: Moreau Kusunoki and Genton

NSW GOVERNMENT

Museum of
Applied Arts
& Sciences

APPENDIX A:
APPROVED DESIGN EXCELLENCE STRATEGY

NSW GOVERNMENT | Planning & Environment

IRF18/6254

Briefing: Secretary
FOR APPROVAL by 9 January 2019

MAAS New Museum Parramatta Design Excellence Strategy

Purpose: To seek the Secretary's approval for the implementation of a Design Excellence Strategy (Attachment A) for the MAAS New Museum, Parramatta project. The Design Excellence Strategy will form the procedures by which the design competition for the project will meet the requirements of the Parramatta Local Environmental Plan 2011.

Analysis: The Parramatta Local Environmental Plan requires a design competition to be conducted to realise the development. The Local Environmental Plan requires competitions to be conducted in accordance with procedures approved by the Secretary. At present the applicable procedures are the Director General's Design Excellence Guidelines, 2011. These procedures are not well suited to the international nature of the design competition proposed, and a hybrid design excellence strategy has been developed accounting for best-practise competition procedures. The Government Architect NSW and City of Parramatta Council have endorsed the Design Excellence Strategy (Attachment B and C).

Reason for deadline: The Design Excellence Strategy is required to be approved by 9 January 2019 to allow the launch of the design competition on 15 January 2019.

Recommendations

1. **Approve** the Design Excellence Strategy for the MAAS New Museum, Parramatta.

Department Approval

Craig Limkin
Executive Director
Create Infrastructure

Date: 13/12/2018

Alex O'Mara
Deputy Secretary
Create Infrastructure

Date: 13/12/2018

Secretary

Carolyn McNally
Secretary

Approved

Not Approved

Date: 17 · 12 · 18

Key reasons

Parramatta Local Environment Plan

Clause 7.10 of the Parramatta Local Environmental Plan 2011 (LEP) provides design excellence requirements within the Parramatta City Centre. Clause 7.10(5) provides thresholds for which a 'competitive design process' must be undertaken. The MAAS New Museum Parramatta project will meet these requirements in relation to the size of development and capital investment value, thus a competition must be held.

Under clause 7.10 of the LEP a competitive design process is defined as:

'an architectural design competition carried out in accordance with procedures approved by the Secretary of the Department of Planning and Environment.'

At present, the relevant procedures under the LEP would be the Director General's Design Excellence Requirements, 2011.

A failure to approve the alternative Design Excellence Strategy prior to competition launch may create future development approval difficulties.

MAAS New Museum Parramatta Design Competition

The Minister for the Arts announced in April the intention to host an international design competition for the MAAS New Museum Parramatta project. Create Infrastructure has engaged Malcolm Reading Consultants in the role of competition organiser and it is intended to release Stage 1 of the competition on 15 January 2019.

To ensure the competition attracts the most interest from the architectural community a review of competition guidelines has been undertaken. These include:

- *Director General's Design Excellence Guidelines, 2011*
- *Government Architect's Design Excellence Competition Guidelines (Draft), 2018*
- *Guidelines for the Conduct of Architectural Competitions, Australian Institute of Architects, 2016.*

The review has demonstrated a number of similarities between the guidelines, however none of the guidelines have been specifically drafted for international design competitions.

In order to attract the most interest from the local and international architectural community, the attached Design Excellence Strategy has been developed.

The Strategy will ensure the procedures by which the MAAS New Museum Parramatta design competition are conducted will attract the highest calibre of national and international participants to the competition, and with the approval of the Secretary will form the procedures for the purposes of the LEP.

Consultation

Create Infrastructure has sought the input of Government Architect NSW and City of Parramatta Council in developing the Design Excellence Strategy. Letters/email of endorsement to the Strategy from both parties is attached.

Attachments

Attachment	Title
A	MAAS New Museum Parramatta Design Excellence Strategy
B	Letter of endorsement from NSW Government Architect
C	Letter of endorsement from City of Parramatta Council

MAAS New Museum Parramatta

Design Excellence Strategy – 4 December 2018

1. MAAS at Parramatta Project

The new MAAS at Parramatta Museum Project will be a landmark building that will be the one of the largest museums in Australia offering 18,000 square metres of exhibition and public spaces (including circulation and other front of house spaces). It will accommodate the Museum of Applied Arts and Sciences (MAAS) that has an internationally recognised collection spanning history, science, technology, design, industry, decorative arts, music, transport and space exploration.

The new MAAS will be located at Parramatta at the northern end of the City Centre. Parramatta is undergoing significant change and has become the 'Central City' within the greater Sydney area. The site for the museum is located on the banks of the Parramatta River, bound by the foreshore in the north, Wylde Avenue to the east, Philip Street to the south and residential and commercial development to the west.

2. Purpose of the New Museum Design Excellence Strategy

The purpose of the *New Museum Design Excellence Strategy* (Strategy) is to explain the process by which a design competition for the New Museum will be undertaken and to meet the requirements of the Parramatta Local Environmental Plan, 2011.

2.1 Design Competition

The NSW Government is committed to undertaking an international design competition for MAAS at Parramatta project. The design competition will deliver a world class 21st century museum in Western Sydney, focused on science and innovation, that will meet the needs and aspirations of the community and deliver an exciting new cultural destination for the people of NSW and beyond.

The competition will include an international search to attract design teams that represent the best of the best from Australia and around the globe to submit designs for the new museum – a future icon in the Asia Pacific.

2.2 Statutory Requirements

Located within the CBD of Parramatta, the provisions of the *Parramatta Local Environmental Plan* 2011 (LEP) apply. Under the LEP thresholds apply in relation to the requirement to undertake a competitive design process within clause 7.10- Design Excellence- Parramatta City Centre. The New Museum will meet the thresholds under clause 7.10(5) in relation to:

- Having a height above existing ground level greater than 55m;
- Having a capital investment value of more than $100,000,000; and
- Being a development for which the applicant has chosen to undertake a competition.

The LEP requires that the competitive design process be undertaken in accordance with procedures approved by the Secretary of the Department of Planning and Environment. The relevant procedures as at November 2018 are the *Director General's Design Excellence Requirements, 2011* (contained in Appendix A). This Strategy has been developed in response to the Director General's Design Excellence Requirements and the Government Architect's Design Excellence Competition Guidelines (Draft) which require the preparation of a Design Excellence Strategy for the purposes of the project and thus satisfy the requirements of the LEP for 'procedures approved by the Secretary of the Department of Planning and Environment.'

3. Objectives

The design competition for the New Museum has the following objectives:

- To attract the best designers in the world to create a new cultural destination of landmark design quality and a new precinct on the banks of the Parramatta River.
- To deliver a concept that is operationally efficient, contemporary, innovative and sustainable and will attract the highest quality international exhibitions.
- To encourage the creation of innovative design teams that blend proven cultural experience with design capabilities and skill – as well as promoting collaborations with younger designers and studios.
- To conduct a process that nominates a lead designer to deliver a project that achieves design excellence.
- To conduct a transparent process that is fair and accountable.
- To deliver a design concept that demonstrates:
    - Optimal alignment with the project brief
    - Has due regard for Council's civic link and riverside strategies;
    - The potential through all processed of design development, approvals and construction of being completed within budget;
    - Recognition of Australian building codes and standards and delivery capabilities; and
    - Potential to be delivered in accordance with timelines.

4. Competition Type

4.1 Review of Procedures

A number of existing guidelines or competition procedures have been reviewed in developing these *Procedures*. Particular emphasis has been given to the competition typology and the options and/or recommendations regarding the types of competition that can be undertaken.

Director General's Design Excellence Guidelines, 2011
Under these guidelines, there are two 'levels' of design competition outlined. The first is an invited competition whereby a minimum of three shortlisted architectural/design firms are invited to participate. The second option is an 'open' competition starting with an expressions of interest that is advertised publicly and open to any qualified participant. A short-list of between three and six firms is invited to participate in a second stage, responding to a detailed brief.

Government Architect's Design Excellence Competition Guidelines (Draft), 2018
This guideline (included at Appendix B) is currently in draft and is intended to replace the Director General's Design Excellence Guidelines.

The GANSW Draft Guidelines offer three options in terms of competition typology:

• **Type A: Invited Single-Stage Design Excellence Competition.** This option requires a minimum of three and maximum of five designers or design teams to participate and respond to a detailed brief as a single staged process.

• **Type B: Invited by EOI Design Excellence Competition.** This option includes public expressions of interest process where 3-5 firms are shortlisted to participate in a second stage process. The short listing is usually based on demonstration of capability. Firms deemed capable are invited to participate in a second stage and respond to a detailed brief.

• **Type C: Open Design Excellence Competition.** This process includes an open response to a first stage whereby concepts or a strategy is presented. Short listing is undertaken based on the concept/strategy and the number of firms invited to participate in the second stage is set by the competition brief.

Guidelines for the Conduct of Architectural Competitions, Australian Institute of Architects, 2016
The AIA Architectural Competitions Policy (included at Appendix C) outlines four categories of competition:

- Open competition- no limitation on entrants (or limitation to a broad cohort of entrants e.g. architects, design professionals and students) where entrants self-select on their eligibility to meet the criteria.
- Limited (open) competition- this is an open process that limits entrants based on eligibility in terms of geographic location, discipline or particular experience.
- Limited (select) competition- entrants are selected based on a defined selection criteria.
- Select competition- the project directly selects the entrants for the competition.

4.2 Recommended Competition Type for the New Museum

The MAAS at Parramatta project is unique and significant to Sydney, NSW and Australia. It is therefore essential that a wide search be conducted to find the best possible design team for the New Museum. The search will seek design teams comprising experience and skills in architecture, landscape architecture and urban design.

A two-stage competition process is proposed with an open first stage open EOI process followed by a short list of entrants (anticipated to be 4-6 design teams) invited to participated in stage 2 and respond to a detailed brief.

The proposed process for the New Museum aligns with the:

- 'Open' competition under the Director-General's Design Excellence Guidelines;
- Type B Open EOI Design Excellence Competition; and
- Limited (open) competition category from the AIA.

5. Design Excellence

A fundamental aim of the competition process for the New Museum is to achieve design excellence. The main reference to achieving design excellence within the Parramatta CBD is outlined in clause 7.10(4) of the Parramatta LEP. This clause sets out the considerations by which the consent authority will determine whether a development exhibits design excellence:

- whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved;
- whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain;
- whether the proposed development detrimentally impacts on view corridors; and
- how the proposed development addresses the following matters:
    - the suitability of the land for development,
    - the existing and proposed uses and use mix,
    - any heritage and archaeological issues and streetscape constraints or opportunities,
    - the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,
    - the bulk, massing and modulation of buildings,
    - street frontage heights,
    - environmental impacts, such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity,
    - the achievement of the principles of ecologically sustainable development,

- pedestrian, cycle, vehicular and service access and circulation requirements, including the permeability of any pedestrian network,
- the impact on, and any proposed improvements to, the public domain,
- the impact on any special character area,
- achieving appropriate interfaces at ground level between the building and the public domain,
- excellence and integration of landscape design.

The New Museum is likely to be a state significant development under the provisions of *State Environmental Planning Policy* (State and Regional Development) 2011. As such guidelines including *Better Placed*, Government Architect NSW, 2017 are likely to be invoked and should inform the achievement of design excellence for the New Museum. Under *Better Placed*, the following 'Good Design' objectives are relevant:

- Better Fit- contextual local and of its place
- Better Performance- sustainable, adaptable and durable
- Better for Community- inclusive, connected and diverse
- Better for People- safe, comfortable and liveable
- Better Working- functional, efficient and fit for purpose
- Better Value- creating and adding value
- Better Look and Feel- engaging, inviting and attractive

To align the process of the design competition with the future development application requirements, the design excellence considerations outlined in the LEP and in *Better Placed* will inform the evaluation of entries to the design competition.

6. Competition Procedures

The guidelines set out at section 4 outline recommendations in relation to procedures that should be undertaken during any competition process. These recommendations have been utilised to inform the procedures that will apply to the New Museum design competition as outlined in the following sections.

6.1 Competition Brief

Competition briefs will be developed for both stages of the project:

- Stage 1- open EOI
- Stage 2- invited shortlist

The briefs will outline the competition requirements in relation to eligibility for entry, timeframes for submission of entries, selection criteria for assessment of entries, jury membership and any fees to be paid to competition entrants.

The stage 1 brief will require nomination of design teams (architects, landscape architects and urban designers) that remain consistent throughout all stages, including post competition. Further disciplines may be required as part of the teams nominated during the stage 2 competition to enable development of concepts. This could include structural engineering, building services designers or museum experts.

The briefs will be subject to consultation with City of Parramatta Council and Government Architect NSW prior to being released.

6.2 Competition Jury

A competition jury will be established comprising members with experience in architecture, museum design and/or operation and government representatives as well as a representative from Parramatta Council. The jury size will be between 7 and 9 members. Appropriate probity arrangements will be in place in selection of jury members to manage any potential or perceived conflicts of interest. Advisors to the proponent (including the Competition Advisor) will not be members of the jury.

Jury members will be selected on the basis of relevant experience to the project and confirmation that no actual or perceived conflicts of interest exist that prevent them from participating as a jury member. The jury will have skills in architecture, design or museum curation and operations.

Procedures for the jury will be established and endorsed by the jury prior to receipt of the first competition entry.

The jury may be supported by specialist advisers as required to assist in the evaluation of entries.

6.3.1 Stage 1 Competition Jury

The Stage 1 competition jury will be comprised of a smaller number of the overall competition jury. An odd number of jury members will comprise the Stage 1 jury. The Chairperson will be consistent throughout the Stage 1 and Stage 2 competition jury. It is likely the stage 1 jury will consist of 3-5 members.

6.3 Reporting

The project proponent will prepare draft jury reports at the conclusion of both stages of the competition, to be reviewed and endorsed by the jury prior to finalisation. At a minimum the jury's report will:

- Outline the competition brief provided to entrants;
- Provide an overview of each of the entries;
- Evaluate the entries against the relevant criteria:
    - Stage 1- eligibility for entry to Stage 2;
    - Stage 2- recommended winning entry;
- Provide a rationale for the jury's decision;
- Outline any recommendations for next steps:
    - Stage 1- in relation to the competition process for Stage 2; and
    - Stage 2- in relation to any design amendments or areas of exploration for the winning design critical to achieving design excellence.

6.4 Design Integrity

Following announcement of the winning entry, the project proponent will undertake a process of design integrity. This process will aim to ensure the integrity of the winning entry is maintained throughout the future stages of the project including development application through to construction. The proponent will appoint the design team of the winning entry as selected by the jury, and the design team will be responsible for design development through to construction.

The project proponent will establish a design integrity panel comprising members of the design competition jury to provide assurance at regular milestones that design integrity is being maintained. To ensure that the quality of the winning design is maintained through all development approval stages and construction, the jury will review the design at the following stages at a minimum:

- During the pre-lodgement stage
- During the Development Application stage, when the following information will be required:
    - Key cross sections, partial plans and partial elevations through external walls, balconies and other key external details. These drawings are to be fully annotated at a scale of 1:50, or if necessary 1:20, showing details, materials, finishes and colours, so that the details and materiality of the external facades are clearly documented.
    - Revised 3D photomontages.
- Prior to construction
- Prior to occupation
- Prior to lodgement of any planning modification which modifies the design

Given the number of jurors anticipated and the potential international composition of the jury, it is considered unrealistic to re-convene the full competition jury to provide ongoing design integrity advice. As such a 'sub-panel' of local jurors will be retained to re-convene as necessary prior to submission for planning approval, during the planning approval process and at relevant milestones up until construction. The composition of the sub-panel should be such that the majority of members have relevant design qualifications.

Appendix A- Director General's Design Excellence Requirements

Director General's Design Excellence Guidelines

Introduction

Good building design should positively contribute to the overall architectural quality of the city and provide buildings appropriate to their context. In some circumstances, this contribution may be as an iconic or landmark building, but more typically it is as a well-designed building that fits sensitively into the streetscape.

The Design Excellence provisions of the City Centre Local Environment Plan (LEP) may require or provide the opportunity for a landowner to hold an 'architectural design competition' for the design of a building or larger site containing more than one building. That process may lead to a design based 'bonus' in building height and/or floor space ratio (FSR) and in that circumstance this document provides the guidelines for such competitions.

An architectural design competition has the potential to achieve design excellence and encourage innovation without delaying the development approval process. They key to success is to commence pre-planning at an early stage in the development process. The design competition should be undertaken prior to the lodgement of a formal development application.

Design competitions can reduce the potential for delay in the development application process by providing more certainty of the final development outcome to both the landowner and the community.

The Purpose of the Design Competition

The purpose of an architectural design competition is to promote innovative design solutions that achieve high quality buildings and spaces within the city centre. In recognition of the additional cost and effort required by a competitive process, a successful design competition that achieves design excellence can result in a development bonus in relation to building height and/or floor space.

Objectives of the Design Competition

Design competition objectives include:

- To achieve a diversity of architectural response;
- To achieve a high standard of architectural excellence;
- To encourage flexibility within the urban design controls to allow for newer or unexpected solutions;
- To provide incentive through greater FSR and/or height; and
- To encourage a sense of civic pride.

The Design Competition Process

Competition Initiation and Requirements

An architectural design competition is required where;

- A building is over a particular height specified in the LEP,
- The building is on a specified key site,
- The competition is required as a condition of a Part 3A approval; or
- The landowner (or their agent) elects to have a competition.

The landowner, or an appointed agent of the landowner, is to be nominated as the 'proponent' for the purpose of the competitive process.

The proponent is responsible for the running and the costs associated with the competition process from initiation and preparation of the brief, through to release of the jury's decision.

Levels of Design Competition

There are two levels of design competition: *invited* and *open*.

Invited

For most projects, the proponent will invite a minimum shortlist of three architectural/design firms to participate in a design competition and supply them with the competition brief, which has been previously endorsed by the consent authority.

Open

In some circumstances, such as landmark redevelopment sites or exceptionally taller buildings an open competition may be conducted. This will require the proponent to advertise and call for expressions of interest (EOI). A short list of entrants would be selected in accordance with a process outlined in the EOI brief. The short listed entrants would then be supplied with the endorsed competition brief and invited to participate. In keeping with the scale of the project, between three and six separate architectural/design firms would be selected, in consultation with the consent authority, from the respondents to the EOI.

Large Sites with Multiple Buildings

Where a large site has a number of buildings or is subdivided into 'super lots', it may be desirable for a variety of architects to undertake the design of different buildings to ensure a diversity of architectural expression is achieved. In such circumstance, the consent authority is to endorse how the project may be phased, the role of individual architects, and any requirement for a coordinating 'master' architect. However, it is not intended that the master planning of a precinct (that is, multiple blocks) should necessarily be subject to the competitive process.

Exceptions Clause

The requirement for a minimum of three architectural / design firms to submit designs may be waived by the Director-General where it can be demonstrated design excellence will be achieved, such as where concept drawings are submitted for a manifestly outstanding building, and the architect has a reputation for delivering buildings of the highest quality. In such a case, a design integrity panel may be appointed to oversee implementation.

The Competition Brief

The proponent of a design competition will prepare the design competition brief.

The Director General of the Department Planning (DOP) requires the design competition brief to include the following:

- Describe the type of competition (open or invited), the role of the proponent and the competition process;
- For an open competition, include details of the process / criteria for short listing entrants responding to the call for expressions of interest.
- Include details of the relevant planning controls (LEP and DCP) and any requirements of an adopted Concept Approval under Part 3A of the Environmental Planning and Assessment Act (the Act);
- Where a site includes a heritage item, is located within a conservation area or in the vicinity of a heritage item, include a heritage impact assessment and advise competitors to consider any conservation guidelines set out in the document;
- Describe the proposed uses within the building, the percentage of each use, the proposed gross floor area (GFA) and FSR of the building, estimated project budget and construction costs;
- Indicate the level of documentation required for the submissions. The documentation should be sufficient to explain the design merits of the proposal and may include elevations, plans, montages and digital representations. The extent of documentation should relate to the scale of the project and should not be excessive;
- Provide the terms of reference of the competition jury including the nomination of a jury Chair;
- Make it clear that the competition is a public process and confirm that all entrants' names must be clearly visible on entries;
- State that the copyright of any entry to a design competition remains with the originator of the work;
- State the fees to be paid to each of the entrants and, as appropriate, the awarding of any prizes, commissions or bonus to a successful entrant. Fees paid to entrants must be appropriately scaled to recompense entrants for the extent of work undertaken; and
- Allow a minimum period of 28 days for the preparation of submissions by entrants.

The consent authority will assess the brief according to the above requirements and may require the brief be amended prior to its endorsement and issue to the entrants. If the brief is not endorsed, the consent authority must give its reasons to the proponent within 14 days of the lodgement of the brief.

Design Competition Criteria

The following criteria apply to the design competition:

A minimum of three competitive submissions are to be considered.

- The submissions are to be prepared by bone fide independent architects or firms that can demonstrate experience in the design of high quality buildings.
- Each submission will document:
  - The contextual analysis and rationale for the design;
  - Compliance with the competition brief and the statutory planning requirements;
  - How the design is an economically feasible development option; and
  - The manner in which design excellence is achieved.

Designs do not need to be documented to the level necessary for a full development application.

The Competition Jury

The competition jury will comprise a minimum of three and not more than five members. At least one member will be a nominee of each of the following:

- The proponent; and
- The consent authority; and
- The Director General of the Department of Planning.

There will be equal proportionate representation from the proponent and consent authority plus the DOP representative. Where the DOP is the consent authority, the Local Council will be invited to nominate a jury member.

Jury members must:

- Not have a pecuniary interest in the development proposal;
- Not be an owner, shareholder or manager associated with the proponent or proponent's companies;
- Not be a staff member or councillor with an approval role in council's development assessment process.

Members of the jury should have relevant design expertise and experience.

If the proposed development includes a heritage item or is within a heritage conservation area the consent authority's heritage adviser should provide a heritage assessment of the proposal to the jury. The proponent will bear the cost of such advice.

The jury will convene for the review of the competition submissions as soon as possible following the close of the competition. If subsequent meetings are required for the jury to complete its deliberations these should follow as early as possible.

The competition jury will be convened by the consent authority, including the provision of administrative and secretarial services for the recording of the jury proceedings and preparation of the Design Competition Report. The proponent will be responsible for reimbursing the consent authority for the secretarial services, to a fee of up to $1,000.

The Jury's Decision and Design Competition Report

Entrant's submissions will be graded by the jury and its considerations and decision recorded in a Design Competition Report.

The Report will:

- Summarise the competition process incorporating a copy of the competition brief;
- Outline the assessment of the design merits of each of the entries;
- Present the jury's decision, including the rationale for the choice of a nominated design and how this exhibits design excellence; and
- Outline any recommended design amendments or propose conditions of development consent that are relevant to the achievement of design excellence.

The Report may:

- Nominate the winning submission and recommend a height and/or floor space bonus, up to the maximum 10 percent available under the provisions of the LEP; or
- Indicate the highest graded submission and recommend design quality improvements that could be made to permit the awarding of a bonus; or
- Decline to endorse any entry and not recommend any bonus height or floor space.

The decision of the jury will not fetter the discretion of the consent authority in its determination of any subsequent development application.

Reporting Timeframe

Once the Jury's decision is made, their report will be lodged with the consent authority within 14 days.

The proponent may commission the winning designer/architect to prepare and submit a development application (DA) based on the winning submission.

When the DA is placed on public exhibition, the consent authority will also advise the Director General (via the relevant DOP Regional Office), as follows:

- whether it endorses the competition outcome as per the Design Competition Report; and
- if it requests the Director General's concurrence to award the recommended bonus building height and/or floor space.

The Regional Office will review the request for concurrence, assess the consistency of the DA with the Design Excellence Report and, within 14 days, submit a summary recommendation to the Director General.

These activities can occur concurrently with the DA exhibition period.

In determining whether to award bonus height and/or floor space, the Director General must consider:

- Whether the design competition has been undertaken in accordance with these competition guidelines; and
- The recommendations of the design competition report.

Once the Director General's decision is made, the consent authority will be notified within 14 days.

Post Competition Process

Design Integrity

To ensure that design quality continues from the development application stage through construction drawings and into physical completion of the building the competition jury will recommend a process to monitor design integrity.

Generally, this will require the designer of the winning submission be nominated as the design architect. In some cases, the Jury may recommend a Design Integrity Panel monitor design excellence.

Certification that the design is substantially the same and retains the design excellence exhibited in the winning submission will be required at key project milestones, including lodgement of the DA, issue of construction certificate and at completion of the project.

Request for Review

In the event that;

- the Jury does not reach a decision,
- the proponent is not satisfied with the nomination
- the proponent wishes to make a substantive modification,
- the consent authority considers the project submitted for approval (or as subsequently modified) to be substantially different, or
- the consent authority indicates it will not grant consent to the design nominated,

either the proponent or the consent authority may request that the Jury reconvene and make a recommendation as to what further competitive processes or requirements would be necessary to permit an alternative or revised design to satisfy the design excellence provisions of the LEP.

The Jury shall make such recommendation as it sees fit within 28 days of such a request.

The cost of such review shall be born by the proponent.

Completion of design competition process

A requirement in a LEP that a design competition be held in relation to the proposed development is deemed to be satisfied upon:

- the issue of a report by the competition jury, or
- the completion of any further competitive processes recommended by the Jury following a requested review, or
- should the Jury make no further recommendations, 28 days after such a request for review is made, in which case the competition requirement is considered discharged with no award of bonus height or floor space.

Appendix B- Government Architect's Design Excellence Competition Guidelines (Draft), 2018

DRAFT

Government Architect's Design Excellence Competition Guidelines

ON EXHIBITION MAY 2018

Contents

1. Introduction

Design competitions are a well-tested and highly successful procurement model; they help prioritise good design and can bring the highest quality of thinking and originality to a project.

Competitions generate a range of solutions to each design challenge, allowing for the comparative evaluation of different approaches. A competition also demonstrates a commitment to high quality design to the community and to public funding and other regulatory bodies. For public authorities, competitions can drive neighbourhood, city or regional improvements in public buildings and spaces, private development and regeneration and encourage development that is healthy, responsible, integrated, equitable and resilient.

Comparative evaluation is a key factor in how competitions can achieve better design outcomes. It enables the relative merits of different design responses to a brief to be analysed and evaluated and ensures the chosen design can be verified as the best response.

1.1 What is a design competition?

A design competition is a competitive design process in which an organisation, private or public ('The Proponent') invites designers (the 'Entrant') to submit a proposal for a precinct, site or building. An independent panel of design professionals (a 'Competition Jury') will select the successful design based on an agreed set of design-related selection criteria.

GOVERNMENT ARCHITECT NEW SOUTH WALES

NSW GOVERNMENT

1.2 What is Design Excellence?

Design Excellence is a term used in Environmental Planning Instruments (EPIs) to refer to the design quality of a building or project and describes an expectation that a project will achieve a level of design quality that is above and beyond the usual. It also describes a variety of requirements and processes that are intended to support this. The description of Design Excellence is broadly consistent across planning legislation where it is often summarised as 'the highest standard of architectural, urban and landscape design.' Design Excellence descriptions vary in their detail but include references to context, accessibility, public domain, streetscape, massing and sustainability.

1.3 What is a Design Excellence Competition?

The Design Excellence provisions of an EPI may require or provide the opportunity for a project Proponent to hold a design competition for the design of a building, precinct or site. This process is often referred to as a 'competitive design process'. In these guidelines, any competition of this type is referred to as a Design Excellence Competition.

Undertaking a Design Excellence Competition alone does not guarantee the achievement of Design Excellence. A Design Excellence Competition is one stage in a longer overall process intended to lift the design quality of a project to the level of Design Excellence. Pre-competition processes such as preparation of a reference design, and post competition Design Integrity are also critical to the achievement of Design Excellence. Importantly, approval of a scheme remains with the consent authority.

2. Purpose of this document

2.1 This document and the Director General's Design Excellence Guidelines, 2011

This document, the Government Architect NSW Design Excellence Competition Guidelines replaces the Director General's Design Excellence Guidelines, 2011. These Guidelines will give the agencies, individuals and organisations that use them essential and practical advice on how to plan and deliver a successful Design Excellence Competition to meet statutory requirements.

2.2 Objectives

The objectives of this document are:
- to establish the steps a proponent is required to undertake to demonstrate that a proposed development is the result of a Design Excellence Competition
- to clarify the timing of a Design Excellence Competition in a staged Concept Proposal or Development Application (DA) process
- to support Proponents to establish a Design Excellence Competition process and brief that ensures the relevant Design Excellence requirements of the consent authority are balanced with the objectives of the Proponent; and procedural fairness for competitors.

2.3 Who should use these Guidelines?

These Guidelines are intended to support the following groups:
- proponents of a Design Excellence Competition and their consultants, including planners, competition advisors and probity advisors
- competition Entrants undertaking a Design Excellence Competition, such as architects, urban designers and landscape architects
- assessment planners at a state and local level assessing projects that have undertaken a Design Excellence Competition in accordance with these Guidelines.

2.4 When to use these Guidelines?

These Guidelines should be used when a Design Excellence Competition is a requirement and:

1. These guidelines, or the Director General's Design Excellence Guidelines, 2011, are referenced
2. A local council, their delegate or a local planning panel, joint regional or Sydney planning panel is the consent authority, and the local authority has chosen to use these Guidelines (hereafter referred as a Local Council project); or
3. The Minister for Planning or their delegate is the consent authority and a local design excellence competition policy or guideline (or equivalent) does not exist or apply (hereafter referred to as 'State Significant projects' for the purposes of these guidelines).

These Guidelines are not required to be used:

1. Where a local government area has its own design excellence competition policy or guidelines (or equivalent) and chooses to use them.

Where the local guidelines are being applied for a proposal where the Minister is the Consent Authority GANSW will assist the Department of Planning in administering the Design Excellence Competition under those local guidelines.

2.5 Where a competition is not required

In some cases, an EPI may contain specific conditions for when a Design Excellence Competition is not required. Where this is the case, and these guidelines apply and the Proponent wishes to use this condition, they must demonstrate to GANSW and the consent authority that such a process would be unreasonable and unnecessary in the circumstances or that the development:

— involves only alterations or additions to an existing building, and
— does not significantly increase the height or gross floor area of the building, and
— does not have significant adverse impacts on adjoining buildings and the public domain, and
— does not significantly alter any aspect of the building when viewed from public places and
— satisfies the specific conditions of the relevant EPI when considering whether a competition is required.

3. Competition roles

The organisation and delivery of a Design Excellence Competition requires the close collaboration of a range of professionals. It is critical that each party understands its practical and legal obligations in facilitating a Design Excellence Competition.

3.1 Government Architect NSW

The Government Architect NSW (GANSW) plays a different role depending on whether the project is State Significant or a Local Council project.

For **State Significant** projects, the GANSW will, in consultation with the Proponent and the consent authority:

— endorse the proposed competition process, including the competition strategy and brief
— endorse the Jury selection
— chair the Competition Jury (GANSW or their representative)
— host the Competition Jury session
— post competition, endorse that the overall process has met the statutory requirements of a Design Excellence Competition, including any Design Integrity process nominated by the Jury, the Brief or the Strategy.

For **Local Council** projects where these Guidelines apply, the GANSW will, in consultation with the Proponent and the consent authority:

— endorse the proposed competition process, including the competition strategy and brief; and
— endorse the Jury composition; and
— undertake any other role, as agreed with the consent authority.

3.2 The Proponent

The Proponent refers to the party who is undertaking the Design Excellence Competition. The Proponent can be a public or private entity.

The Proponent is responsible for the procurement of key documentation prior to the commencement of the competition. To achieve this, the Proponent is advised to engage the services of a Competition Advisor who will manage these tasks on their behalf:

— engaging a suitably qualified architect, urban designer or landscape architect to prepare a Reference Design
— preparing the Design Excellence Competition Strategy including the selection of the competition type
— completing pre-competition planning, including preparation of the competition program, nomination of Entrants and Jury members and early engagement with the Government Architect NSW and/or the consent authority as required

— developing the Competition Brief
— confirming fees to be awarded to Entrants
— providing secretariat support to the Jury session and compiling the Competition Report.

The Proponent must undertake the Design Excellence Competition in accordance with these Design Excellence Competition Guidelines.

The Design Excellence Competition is to be fully funded by the Proponent including – but not limited to – all aspects of preparation, remuneration of Entrants, Technical Advisors and Jury, secretariat support and marketing.

3.3 The Entrant

The Entrant refers to a person or a team who has either been invited or has elected to enter a Design Excellence Competition. As an Entrant, all persons or teams must prepare a submission in accordance with the submission requirements of the Competition Brief. Teams can be made up of qualified architects, urban designers and/or landscape architects with one firm nominated as the team lead, typically the qualified architect. All Entrants must be able to demonstrate experience in the delivery of high quality buildings, landscapes or urban design.

A Design Excellence Competition will deliver the best results where the Entrant group is diverse. Diversity can take the form of variation in the size of the design practices participating, the extent and type of their previous experience, or their location. Design Excellence Competitions can encourage and facilitate emerging firms to compete alongside more established practices, promoting fresh thinking and new approaches. Partnering of smaller practices with larger, more experienced firms can offer a means to support a greater range of design responses, grow industry talent and support diversity. Depending on the project, it may be appropriate to either invite or promote to an interstate or international audience.

Entrant teams may be multi-disciplinary design teams but should not be required to include specialist consultants such as planners, quantity surveyors, ESD consultants, etc. to meet the submission requirements outlined in the Competition Brief.

3.4 The Jury

Jury members must have appropriate design expertise and should be recognised advocates for Design Excellence. A majority of Jury members must be registered in their profession. The composition of the Jury is critical; it must engender the respect of the community and – in the case of an Open Design Excellence Competition – will play a significant role in generating interest and participation from Entrants. The Jury must be impartial, knowledgeable, and commit sufficient time and energy to the deliberation process.
In some cases, Jury members with relevant specialist design skills may be proposed. For instance, for Masterplan Competitions the Jury must include urban design and landscape architecture expertise.

Jury members must:
— represent the public interest
— not have a pecuniary interest in the development proposal
— not be an owner, shareholder or manager associated with the Proponent or Proponent's companies
— not be a staff member or councillor with an approval role in council's or the department's development assessment process
— have relevant design expertise and experience.

The Jury is paid for their participation by the Proponent.

The minimum will be 3 Jury members for standard projects and increase to 5 Jury members for larger, more complex or high profile projects. Where there are 3 jury members, the Jury must include one nominee of each of the following:
— the Proponent; and
— the consent authority; (or the local authority where the consent authority is the Minister or their delegate); and
— the Government Architect NSW (GANSW).

Where the Jury has 5 members, the Jury must include the following nominees:
— the Proponent – 2 nominees; and
— the consent authority; (or the local authority where the consent authority is the Minister or their delegate) – 2 nominees; and
— GANSW – 1 nominee

The GANSW nominee will chair. There must be an odd number of Jury members.

3.5 The Jury Chair

The Jury Chair formally convenes the Jury and is responsible for conducting the review process in accordance with the Competition Brief and the Competition terms and conditions. The role of the Jury Chair becomes particularly important if the Jury's decision is split or conflicting. The ability of the Jury Chair to negotiate disagreement and explore acceptable compromises is essential in achieving a positive conclusion.

3.6 The Competition Adviser

A Competition Advisor is an independent professional with appropriate experience responsible for the smooth running of the competition processes. A Competition Advisor is required for Design Excellence Competitions for State Significant projects and is strongly recommended in other jurisdictions.

The Competition Advisor guides the Proponent through the process and provides advice and/or services in relation to each stage. A good Competition Advisor will balance the interests of the Proponent with the needs of the Entrants.

The role of the Competition Advisor can include assisting the Proponent with:

- preparing a list of the professional appointments (i.e. jurors, technical advisors, etc.) and advising the Proponent on the financial implications of such appointments
- engaging with the consent authority and/or GANSW
- preparing the Design Excellence Competition Strategy
- preparation of the Competition Brief and associated documents
- project management of the design competition process to ensure timeliness, rigour, independence and transparency in the process such as receiving and storing competition entries, checking entries for compliance to submission requirements, liaising with Entrants over issues that may have occurred during the competition process and general issues of probity
- supervising the receipt of entrant questions, preparing answers in consultation with the Proponent and dispatching responses
- organising the Jury selection
- organising the forum through which the Jury will assess entries and formulate their recommendations
- preparing of draft and final Jury reports for the endorsement and signatures of the Jury members.

3.7 Probity Adviser

The Proponent may choose to appoint a Probity Advisor to oversee the integrity of the process. This is recommended for large, complex or high value projects, especially those involving public funds, or projects that are unusual or contentious.

3.8 Technical advisers to the Jury and to the Entrants

Technical advisors may be called upon during the Design Excellence Competition process to provide specialist advice either to the Entrants or to the Jury.

Where the advice is being provided to the Entrants, the technical advisors will be selected by the Proponent and must provide the same services to all Entrants.

Where the advice is being provided to the Jury, it must be in written form and the Technical Advisors may undertake a briefing with the Jurors prior to the judging session. Advice is limited to technical and compliance matters and must not include design commentary.

Technical advisors are paid by the Proponent.

3.9 Observers

The Competition Advisor may allow observers to be present during the jury process. The Competition Advisor must consult with the Jury prior to granting approval to any Observers. Observers may be part of the Proponent team, stakeholders, representatives from the consent authority, researchers or others that can gain the approval of the Competition Advisor to be present. Observers must not make any comment or participate in any way in the judging of the submissions.

4. Competition processes

4.1 Overview

A Design Excellence Competition process can take several forms depending on the project size, its complexity, its Capital Investment Value (CIV) and other factors. It is important to understand the different competition types and select the one that is most suitable for the scope of the project.

4.2 Design Excellence Competition types

These guidelines outline three types of competition that will satisfy statutory Design Excellence Competition requirements. Depending on the project type and other considerations, the Proponent may select one of the three recommended formats in these Guidelines.

Type A:

Invited single-stage Design Excellence Competition

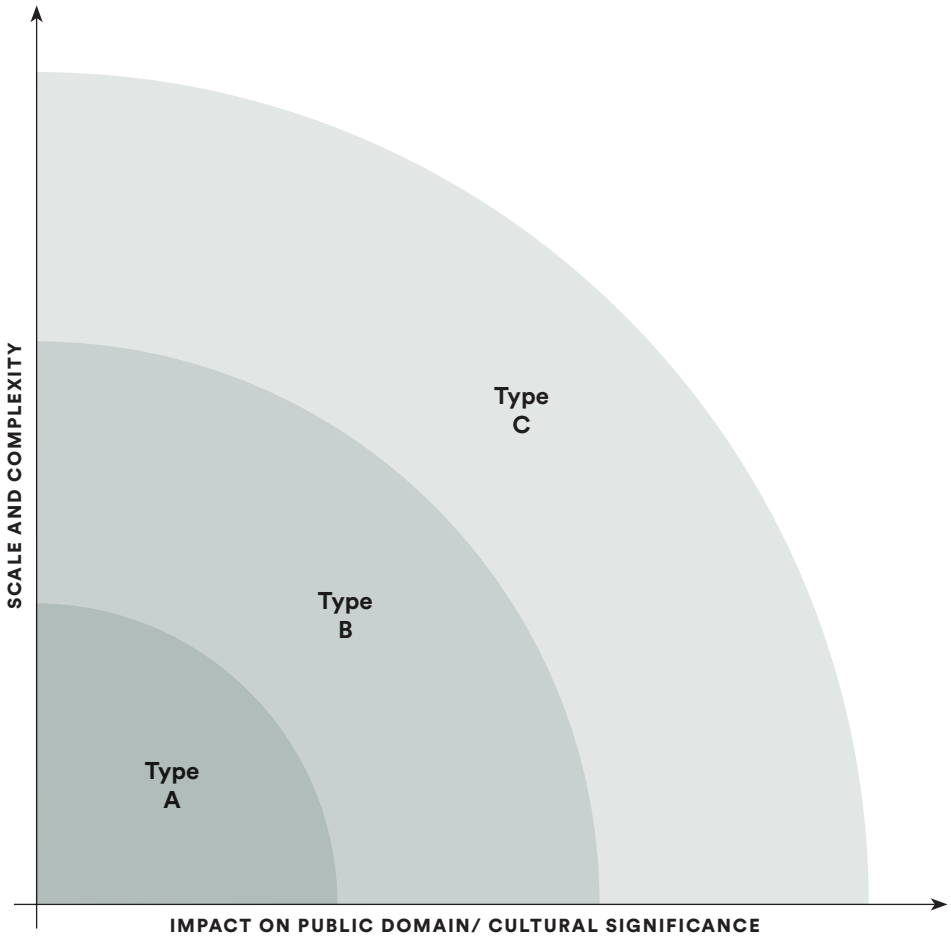
This is a single stage competition with a minimum of three and maximum of five designers or design teams invited to participate.

Selection of the Entrants is by direct invitation. The invited design teams should all be of a high standard, demonstrating a past body of work that has been awarded, critically reviewed or by other means able to show a commitment to design excellence. The list should display a diversity of experience and approach across the selected design teams.

The Type A Design Excellence Competition is recommended for projects of a well established type in areas with a straightforward planning framework.

All Entrants are paid.

Choosing the right competition type



Type B:

Invited by EOI Design Excellence Competition

This competition type is one which permits any qualified designer to respond to an open Expression of Interest for selection into an invited Design Competition. The Expression of Interest would usually require demonstration of capability, the proposed team and a short response to the brief. This format provides all Entrants with an equal opportunity to be selected based on their capability and to consider design teams not currently known to the proponent. The EOI of a Type B Design Excellence Competition is unpaid.

A shortlist of 3-5 Entrants is selected by the Proponent to proceed to Stage Two in accordance with the process and assessment criteria outlined in the EOI and Design Excellence Competition Strategy.

The Type B Design Excellence Competition format is recommended for projects of any size where the Proponent is seeking to engage with a broader sector of the design industry. Entrants in the invited Design Competition must be paid.

Type C:

Open Design Excellence Competition

This competition type is one which permits any qualified designer to prepare a design response for a first stage, usually to present a Concept or Strategy for the Project. This format provides all Entrants with an equal opportunity to be selected based on the merit of the design proposal, rather than proven capability or prior experience.
The first stage of an Open Design Excellence Competition is unpaid and often anonymous.

A shortlist of Stage One Entrants is selected by the Jury in accordance with the process and assessment criteria outlined in the Competition Brief. The shortlisted Entrants are then invited to participate in a second stage. Anonymity can be retained through the second stage or lifted.

This Design Excellence Competition format is recommended for high profile, culturally significant projects or projects of any size where the Proponent is seeking to engage with the public and the design community to lift the profile of the project.

It is not a requirement to pay stage one Entrants however some other form of reimbursement such as publicity or exhibition of submissions is recommended.

Stage two Entrants must be paid.

Design Excellence Masterplan Competition

A Design Excellence Masterplan Competition can follow the terms of a type A, B or C Design Excellence Competition process but it takes the urban design of a larger site or precinct as its subject.

A Design Excellence Masterplan competition can, in certain circumstances, mean that Design Excellence competitions for all the individual buildings within the master plan are not required. However, it is expected that some key sites or buildings within the master planned area are still nominated as competition sites. In these cases, a Design Excellence Competition Strategy (see 4.3 below) would outline the procurement, the brief and a shortlist of proposed design practices for those buildings or public domain elements not proposed as competition sites and nominating the sites that would undergo a Design Excellence Competition. The Design Excellence Competition Strategy would make the case that a higher level of design excellence is likely to be achieved through this format than that of running individual competitions for each building. The Design Excellence Strategy must be endorsed by GANSW and the consent authority.

Masterplan Competitions are recommended for larger sites and precincts that will include multiple buildings and elements of the urban fabric such streets and open space. Proponents considering this type of competition should contact GANSW early in the process to discuss the details of the Design Excellence Strategy.

Payment of entrants is in accordance with the Type A, B and C descriptions above

Special scenarios

For very large or complex projects, the Proponent must contact the Design Excellence Director at GANSW at the commencement of the project to discuss a bespoke Design Excellence Competition Strategy, tailored to the needs of the project.

4.3 The Design Excellence Competition process (step-by-step)

This section outlines the steps a Proponent and the competition stakeholders must take when running a Design Excellence Competition to ensure the process will meet statutory requirements and the objectives of these Guidelines.

Step 01: Developing the Design Excellence Competition Strategy

The first step in establishing a Design Excellence Competition is to prepare a Design Excellence Competition Strategy. The Strategy is procured by the Proponent and typically prepared by the Competition Advisor. It outlines the type and format of the Design Excellence Competition to be undertaken.

For **State Significant** projects, the Design Excellence Competition Strategy must be endorsed by GANSW. Engagement with GANSW prior to requesting SEARS for the project is highly recommended.

For **Local Council** projects, the Design Excellence Competition Strategy must be approved by the local authority, with or without the involvement of GANSW depending on the specific guidelines of that local authority. Approval must take place prior to the commencement of any competition process.

The Design Excellence Competition Strategy must include a Reference Design. This can requirement can also be satisfied through provision of a site specific DCP or Concept Development Application (DA).

Where a two-stage Development Application (DA) is to be undertaken, the Design Excellence Competition Strategy must be undertaken as part of the first stage / Concept DA.

The Design Excellence Competition Strategy defines:

- the location, context and extent of the Design Excellence Competition site
- the objectives of the Design Excellence Competition
- the type of design excellence competition(s) to be undertaken
- an explanation for the selection of competition type, including how the selected process(es) will meet the objectives of these Guidelines and those of the Proponent
- for a Masterplan Competition, the proposed relationship between the masterplan competition and any future design excellence processes, including potential future competition requirements – for example for individual buildings
- the number of designers involved in the process(es)
- the means for ensuring diversity amongst participating designers
- timelines and programme
- whether the Design Excellence Competition is pursuing additional floor space, height or other incentives that may be available under an Environmental Planning Instrument (EPI)
- where the proposed process differs from that outlined in a relevant LEP, or these Guidelines, a justification for the variation
- whether the brief references a draft EPI or Planning Proposal yet to be determined
- in the case of a Masterplan Competition, whether the competition forms part of a Planning Proposal or similar process.

Note: Studies pertaining to the distribution of additional floor space, height or other bonus incentive (if applicable)

For Design Excellence Competition schemes that seek additional height, floor space or any other bonus incentive that may be available under an EPI, the potential impacts of these incentives must be modelled prior to undertaking the competition, either by the consent authority or the Proponent, through the Reference Design or Concept DA.

In distributing any additional floor space or height, the following considerations must be appropriately addressed:

- site and context analysis
- public domain layout, including levels, uses, access and circulation, dedications and hierarchy of spaces
- built form massing and dimensioned envelopes
- overshadowing analysis
- storm water management strategy
- traffic management and servicing strategy, parking numbers and location
- ecologically sustainable development strategies and benchmark commitments (including connection to green infrastructure); and
- heritage impacts.

In determining whether to award bonus height and/or floor space or other incentive, the consent authority must consider:

- whether the Design Excellence Competition has been undertaken in accordance with these Guidelines; and
- the recommendations of the Competition Report.

Step 02: Writing the Competition Brief

Following endorsement of the Design Excellence Competition Strategy by the consent authority and/or GANSW, the Proponent must prepare the Competition Brief. All details about the conduct of the Design Excellence Competition are to be contained within the Competition Brief and no other document, including the terms of reference and supporting information contained in the appendices. The Competition Brief is to be reviewed and endorsed by GANSW and/or the consent authority prior to its distribution to competition Entrants.

The Competition Brief must include the following:

- the shortlisted architects, where known
- a description of the type of competition, the role of the Proponent and the competition process
- for an open competition, details of the process and criteria for shortlisting Entrants and clarification on who can and cannot enter
- site details including site dimensions, key adjacencies and any other relevant circumstantial information
- details of the relevant planning controls (SEPP, LEP and DCP) including envelopes and setbacks and any requirements of an adopted
- concept Plan under Part 3A of the Environmental Planning and Assessment Act (the Act); or SSD Concept Proposal
- details of any prior or relevant planning consents
- details of the estimated Capital Investment Value (CIV) for the project
- where a site includes a heritage item, is located within a conservation area or near a heritage item, include a Heritage Impact Assessment and advise competitors to consider any conservation guidelines set out in the document
- if the site is subject to flooding a Flooding Report and guidance on the flood levels the design teams are required to design to
- description of the proposed uses within the project, the percentage of each use, the proposed gross floor area (GFA) and FSR
- options for distributing any additional floor space area or building height which may be granted by the consent authority for demonstrating design excellence through a Design Excellence Competition
- the process for ensuring Design Integrity post competition
- the target benchmarks for ecologically sustainable development
- for a Masterplan Competition, maximum GFA, minimum open space, maximum heights and the required or preferred use mix
- level of documentation required for the submissions: the brief shall state the number, nature, scale and dimensions of the documents, plans or models required. (see note on Submission Requirements)
- the terms of reference of the Competition Jury including the nomination of a Jury Chair; names of all Jury members, assessment criteria and weighting of each criteria
- a statement that confirms that the competition is a public process and that all Entrants' names must be clearly visible on entries (except where an anonymous competition type is proposed)
- a statement that the copyright of any entry to the competition remains with the originator of the work
- a disclaimer stating that the Jury's decision will not fetter the discretion of the consent authority since the consent authority will not form part of the judging process
- statement of the fees to be paid to each of the Entrants and, as appropriate, the awarding of any prizes, commissions or bonuses to winning Entrants. Fees paid must be appropriately scaled to recompense Entrants for the extent of work undertaken
- a competition program that allows for a minimum period of 28 days for the preparation of submissions by Entrants (noting that some competition types may require significantly longer)
- a clear process to follow for clarifications and questions during the competition period
- a statement noting the name and contact details of the Competition Advisor.

The GANSW and/or consent authority will assess the Competition Brief per the above requirements and may require the Brief be amended prior to its endorsement and issue to the Entrants.

Note: Designing to a budget

Budget is one of the many factors that designers consider in the development of a design response to a brief and site – designing to a budget is a key skill and professional capability. Within a competition environment, Entrants have a responsibility to design a scheme that has the potential to be delivered within the stated budget, whilst acknowledging that competition schemes typically represent a concept level design response. To assist Entrant teams to meet budget requirements, Proponents may provide the services of a cost consultant to provide advice to entrants during the preparation of their submissions. Any fees for cost consultancy must be covered by the Proponent and may not be included in the fees paid to Entrant teams.

Step 03: Competition Review and Judging
A Jury session will be convened to review all submissions according to the criteria set out in the Competition Brief. This session will be held within 2 weeks of the close of the competition.

In preparation for the Jury session, the Jury members must receive a copy of submissions at least one week prior to the Jury session, or longer in the case of large or complex projects.

It is the responsibility of the Jury and Jury Chair to complete their deliberations at the Jury session, however if subsequent meetings are required these must follow as early as possible. Requests for additional information should be avoided wherever possible. Where additional work is required to allow for the completion of deliberations, Entrants must be paid.

In addition to the Jury members, the Competition Advisor and Probity Advisor (where relevant) must be present during deliberations.

A representative of the assessment team of the relevant consent authority must be invited to attend the Competition Jury session as an observer. This enables the assessing planners to better understand design considerations and assists in the provision of consistent advice through the design development and planning consent process.

If the proposed development includes a heritage item or is within a heritage conservation area the consent authority's heritage advisor must provide a heritage assessment of the proposal to the Jury, with costs of advice to be covered by the Proponent.

For **State Significant** projects, the Proponent will be responsible for reimbursing GANSW for administrative services.

For **Local Council** projects, costs will be reimbursed to the local council as a fee to be determined by the council.

Note: Submission requirements

Competitions can put a significant financial burden on the design sector, especially when submission requirements are not well defined or enforced. Submission requirements should be the minimum sufficient to explain the design merits of a proposal and must relate to the scale of the project and the fee paid to the Entrants. They may include elevations, plans, diagrams and digital representations. The submission requirements can also be defined by page or word limits. The Competition Advisor should ensure that only the materials requested in the competition brief are included in the judging process to ensure equity for the Entrants and clarity for the Jury. Entrants must not be encouraged to submit more than has been asked for in the submission requirements. In the first stage of any Competition where this stage is not paid, submission requirements must be kept to a minimum to reduce the financial impact on Entrants.

Step 04: Compiling the Competition Report
Submissions must be graded by the Jury against assessment criteria established in the Competition Brief and its considerations and decision recorded in a Competition Report which is to be prepared by the consent authority or Proponent, as relevant, and signed by all Jury members.

The Report will:
- summarise the competition process and include a copy of the Competition Brief
- outline the assessment of the design merits of each of the entries (or a summary of the entries in the case of stage one of an Open Competition)
- present the Jury's decision, including the rationale for the choice of a nominated design and the design excellence qualities that it exhibits (or a shortlist in the case of stage one of an Open Competition); and
- outline any recommended design amendments that are relevant to the achievement of Design Excellence through subsequent design development (not required for stage 1 of an Open Competition)
- describe the design excellence qualities exhibited in the competition winning submission.

The Report may:
- nominate the winning submission as having the potential to achieve Design Excellence; or
- indicate the highest graded submission and recommend design quality improvements that could be made to permit its endorsement as a winning submission that has the potential to achieve Design Excellence; or
- decline to endorse any entry if the submitted entries do not demonstrate the potential to achieve Design Excellence.

The Jury is expected to reach a decision and finalise the Competition Report in a timely fashion.

Where bonus floor space, height or other incentive as may be allowable under an EPI is sought, the Competition Report can recommend a bonus, up to the maximum available under the provisions of the relevant statutory provision (where applicable); or, recommend a bonus subject to design quality improvements; or not recommend any bonus.

The recommendations of the Jury with regards to any bonus do not represent approval of that bonus. Approval remains with the consent authority and the recommendations of the Jury will not fetter their independence.

Stage 05: Completion of a Design Excellence Competition process

A statutory requirement that a design competition be held in relation to the proposed development is deemed to be satisfied upon:

— issue of a final Competition Report signed by the competition Jury, and/or
— completion of any further competitive processes recommended by the Jury following a requested review, and/or
— completion of any further design excellence process required by the endorsed Design Excellence Competition Strategy, Brief or the Jury, for example, subsequent building specific Design Excellence Competitions for buildings following a Masterplan Competition.

Completion of the Design Excellence Competition does not alter the status of any required subsequent Design Integrity process.

Note: Documentation requirements and probity

To ensure probity, the Proponent must ensure that the documentation of the Design Excellence Competition process is sufficient to enable an audit to be carried out by an independent person or body such as the Australian Institute of Architects if required by Government Architect NSW or the consent authority.

		COMPETITION TYPE		
		TYPE A	TYPE B	TYPE C
STEP 1	DESIGN EXCELLENCE COMPETITION STRATEGY	A Design Excellence Competition Strategy (the Strategy) is required in every instance. The Strategy will nominate the Competition Type, combination of types or in the case of No Competition will outline the process for achieving Design Excellence without the benefit of a competitive design process		
STEP 2	DEVELOPING THE BRIEF	Prepare a detailed Brief with all required supporting documentation	Prepare a Competition Brief AND an EOI document which clearly sets out the aims of each stage of the Type B Competition	Prepare Competition Briefs for each of the Open and Invited Stages of the Type C Competition.
STEP 3 Competition Review and Judging	OPEN CONCEPT DESIGN COMPETITION			STAGE 1: Open National or International Competition for a Design Concept or Strategy, often Anonymous
	OPEN EXPRESSION OF INTEREST (EOI)		An open Expression of Interest asking for a proposed Design Team and demonstration of capability	The Competition Jury should verify the capability of all shortlisted teams before proceeding. Additional information may be requested from some or all teams
	INVITED DESIGN COMPETITION	An invited list of 3-5 Design Teams are asked to prepare a proposal	STAGE TWO: 3-5 Design Teams chosen to present a more detailed proposal on the basis of their EOI	STAGE TWO: 3-5 Design Teams chosen to present a more detailed proposal on the basis of their Design Concept or Strategy
STEP 4	COMPETITION REPORT	The Jury compiles a Competition Report which may: —award a winner and confirm the Design Excellence of that scheme, — award a winner but ask for further development to achieve design Excellence or — declare that Design Excellence has not been achieved and is not possible with the proposed schemes. The Jury's recommended actions to be undertaken from this point should be clear in the Report		
STEP 5	FINAL COMPETITION REPORT	The Jury confirms that Design Excellence has been achieved in a Final report.		
	POST COMPETITION PROCESSES	As set by the Strategy, ensure Design Excellence is maintained through regular review by the Competition Jury or through a Design Excellence Assessment prior to DA lodgement		

5. Post competition: maintaining design integrity

5.1 Purpose

To ensure that design quality continues through design development, construction drawings and into physical completion of the project (or relevant equivalent stages for a Masterplan project) the Competition Strategy and/or Brief must recommend a process to monitor Design Integrity. As a minimum, this will require the designer of the winning submission to be nominated as the Design Architect for the duration of the project. This requirement is not affected if the site is sold.

In addition, and to ensure Design Integrity is retained through construction, the following detailed information will be required to be submitted with a development application:

- key cross sections, partial plans and partial elevations through external walls, balconies and other key external details. Drawings to be fully annotated at a scale of 1:50, or if necessary 1:20, showing details, materials, finishes and colours, so that the details and materiality of the external facades are clearly documented
- a materials sample board with materials represented proportionally to the extent of their use
- revised 3D photomontages.

5.2 Design integrity phase

The Design Excellence Competition Strategy, Brief or Jury may require that the Competition Jury continue to review the project to ensure the standards of Design Excellence are upheld through the further development of the design. The Competition Jury is sometimes called the Design Integrity Panel during this phase, though the membership of the panel or jury should be consistent.

For State Significant projects, GANSW may recommend that the State Design Review Panel (SDRP) act as the Design Integrity Panel. In this case the SDRP Terms of Reference will apply. To ensure continuity of advice, a minimum of one and maximum of three Jury members must be nominated to attend SDRP sessions. The terms of reference for the SDRP provide guidance on this process.

The DIP would typically review the design at the following stages:

- during the pre-lodgement stage
- during the Development Application stage
- prior to lodgement of any Section 96 which modifies the design
- prior to issue of the Construction Certificate (or equivalent post approval process for Crown projects)
- prior to issue of the Occupation Certificate (or equivalent post approval process for Crown projects).

Each meeting of the DIP should be documented within a report or minutes and should include certification that the design retains or is an improvement upon the design excellence qualities exhibited in the competition winning submission will be required at each stage.

The cost of running a DIP is borne by the Proponent.

5.3 Design Integrity Assessment

Where a Design Excellence Competition-winning scheme is subsequently developed, or modified and the Competition Jury has not been involved through a Design Integrity Phase, a Design Integrity Assessment (DIA) may be required to be submitted to the consent authority with the application.

The DIA will advise the consent authority on whether the proposal (development application or Section 96 modification) is equivalent to, or through design development, an improvement upon the design excellence qualities of the winning competition scheme.

Where a continuation of design integrity has not occurred, the Competition Jury will make a recommendation as to what further competitive processes or requirements would be necessary to permit an alternative, or revised design to satisfy the design excellence provisions.

The DIA must be prepared by the Competition Jury and the cost borne by the Proponent.

6. Managing disputes in Design Excellence Competitions

6.1 Disqualification

Entrants will be disqualified in the following circumstances:
— if an entry is received after the nominated closing time and date
— if an Entrant discloses their identity (in an anonymous competition)
— if an Entrant attempts to influence the Jury's decision; or
— if the design is found not to be the original work of the declared Entrant.

In other circumstances, for example where Entrants do not meet other submission requirements, disqualification may also be considered but is not encouraged. Recommendations will come from the Competition Advisor or the Probity Advisor. The Jury must review any recommendation for disqualification but may choose not to support it. The decision rests with the Jury.

6.2 Managing disputes

In the event that:
— the Jury does not reach a decision,
— the Proponent is not satisfied with the nomination,
— the Proponent wishes to make a substantive modification,
— the consent authority considers the project submitted for approval (or as subsequently modified) to be substantially different, or
— the consent authority indicates it will not grant consent to the design nominated,

either the Proponent or the consent authority may request that the Competition Jury reconvene and make a recommendation as to what further competitive process or requirements would be necessary to permit an alternative or revised design to satisfy the design excellence provisions of the statutory provision.

The cost of the review will be borne by the Proponent.

Glossary

C	
Competition Brief	Detailed information provided to Entrants, which sets out Proponent and project aspirations, site information, budget, functional requirements and any other parameters relevant to development of an effective design concept for the project and the terms for running the competition.
Competition Jury	Group of qualified design professionals selected to assess submissions. Jury members must be selected from relevant professions and must have relevant expertise and experience to participate. Jury members must represent the public good and be recognised advocates for Design Excellence.
Competition Report	Detailed report containing a summary of the Competition process, the Jury deliberations and the scoring of each assessed submission against the competition evaluation criteria. It must also contain the determination of the winner, any recommendations of the Jury and be signed and endorsed by the Jury.
D	
Design Architect	The design architect is the leader of the design team. The winning design team maintain a key role in the design and development of the proposal through the whole process.
Design Competition	A design competition is a competitive procurement process in which a Proponent invites designers to submit a proposal for a precinct, site or building. An independent panel of design professionals (a Jury) will select a winning design based on an agreed set of design-related selection criteria.
Design Excellence	Design Excellence is a term that exists in statutory planning to refer to the design quality of a building or project and to a variety of requirements intended to lift design quality. The description of Design Excellence is broadly consistent across planning legislation where it is often summarised as 'the highest standard of architectural, urban and landscape design.'
Design Excellence Competition Strategy	Document outlining the proposed approach to delivering a Design Excellence Competition as mandated by and EPI. The Strategy must include key considerations such as the Competition Type, details of the subject site as well as a program for the delivery of the design competition process.
Design Integrity	Post design competition process which ensures that the design intent of the competition winning scheme is maintained or enhanced during subsequent design and development stages, and through to construction.
Design Integrity Assessment	Assessment carried out by the Design Integrity Panel which determines the extent to which the design intent and design excellence of the winning concept design has been upheld through subsequent design stages.
Design Integrity Panel	Panel of design professionals engaged to review a project as it progresses through design development and construction against the intent of the winning competition entry. Typically the Competition Jury would continue in this role.
Design Review	Design Review is peer-review process where a panel of qualified design professionals review the evolution of a project at key design and delivery milestones. Design Review is recognised to be effective in raising design standards and aspirations.
Design Review Panel	A panel of qualified design professionals providing independent, impartial advice on design proposals to lift the design quality of projects.
E	
Emerging Practice	Refers to a practice in the early stages of establishment or one that whilst well established and with a reputation for design excellence in different, smaller or less complex project types is yet to undertake or is just beginning to undertake work of a larger or more complex type. Emerging practices can provide fresh perspectives and new design ideas.
G	
Good Design	Good design is a phrase that encapsulates the aspirations of 'Better Placed' including its vision for NSW, its definition of good process and its outline of objectives for the built environment. Good design creates useable, user-friendly, enjoyable and attractive places and spaces, which continue to provide value and benefit to people, the place and the natural environment over extended periods.
L	
Landscape Architect	For the purposes of these Design Excellence Competition Guidelines, a landscape architect is a professional active in the field of landscape architecture who has demonstrated experience of delivering Design Excellence in their work.

O	
Observer (at a jury session)	An observer at a jury session is an individual attending the jury session to observe the process and deliberations only. An observer must in no way be involved with the judging of the submissions. An observer can be a representative of the proponent, the local authority or a project stakeholder.
P	
Probity Adviser	An appropriately qualified and independent person who advises the Competition Advisor, Proponent and Jury on, and validates, the probity, equity and integrity of the processes of a design competition.
Proponent	A person or organisation who initiates and funds a design competition in order to select an architect or design team and a preferred design concept for a specific project. The Proponent is usually the client / landowner.
Q	
Qualified Architect or Architect	A qualified architect is an architect who is registered as a professional in a given jurisdiction. When the word 'architect' is used on its own, it implies an architecture professional who has been registered with the appropriate professional body.
Qualified Designer	A qualified designer is a person registered as an architect in accordance with the Architects Act 2003.
R	
Reference Design	A preliminary design that tests the capacity of a site to accommodate permissible uses, floor space and height,,taking into consideration amenity and environmental impacts. A reference design can also provide useful information on yield targets and performance aspects of the brief. In the case of a Design Excellence Competition, the Reference Design is a compulsory part of the brief supplied to Entrants and is to be completed by the Proponent prior to the commencement of the Design Excellence Competition.
T	
Technical Adviser	Technical advisors are suitably qualified professionals who provide specialist advice during the competition process to the Entrants, the Proponent or to the Jury.
U	
Urban designer	For the purposes of these Design Excellence Competition Guidelines, an urban designer is a professional active in the field of urban design who has demonstrated experience of delivering Design Excellence in their work.

Design objectives for NSW

Seven objectives define the key considerations in the design of the built environment.

Better fit
contextual, local and of its place

Better performance
sustainable, adaptable and durable

Better for community
inclusive, connected and diverse

Better for people
safe, comfortable and liveable

Better working
functional, efficient and fit for purpose

Better value
creating and adding value

Better look and feel
engaging, inviting and attractive

The role of the Government Architect is critical in helping deliver good design and planning outcomes across all projects in NSW. This strategic advisory role provides an opportunity to work across government, the private sector and the community to improve social, environmental and economic outcomes for NSW and its communities.

The Government Architect is charged with championing the Better Placed initiatives and supporting government agencies and local government to create and deliver high quality architecture and design outcomes.

Find out more
ga.nsw.gov.au

GOVERNMENT
ARCHITECT
NEW SOUTH WALES

NSW GOVERNMENT

Appendix C- Guidelines for the Conduct of Architectural Competitions, Australian Institute of Architects, 2016

Architectural Competitions Policy

1. INTRODUCTION

1.1. Purpose

The purpose of this policy is to clearly articulate a set of principles and performance requirements that represent the Australian Institute of Architects' (the Institute) position on good practice in the conduct of architectural design competitions in Australia.

The policy is aimed at all key participants in architectural competitions – sponsors/clients, entrants, jurors and advisers.

1.2. Complex environment

The procurement of architectural services occurs within a progressively more dynamic environment, in which the roles and responsibilities of all key players are undergoing constant change. There is therefore a need for clarity, consistency and equity in the conduct of architectural competitions as part of the procurement process.

1.3. Value of design

There is growing recognition of the intrinsic, long-term value of design. An architectural competition, when conducted appropriately, can generate a broader range and higher level of innovation in design solutions. However, it is not universally appropriate and must be robustly evaluated against other methods of procuring the design team for any specific project.

1.4. Competition guidelines

This policy sets out high level, in-principle criteria only. It is not a 'how-to' guide. More detailed guidance for those proposing to run an architectural competition can be found in the companion document – *Guidelines for the Conduct of Architectural Competitions*, published by the Institute.

1.5. Jurisdiction

This policy applies to architectural competitions conducted within Australia, irrespective of the location of the project or site.

1.6. Definitions

For the purpose of this policy, the following definitions apply:

Architectural competition	the process by which an architect or architectural design team is selected for a project, based on the competitive submission of conceptual designs.
Client	the person or entity who will be the owner or operator of the completed project that is the subject of the competition (may or may not also be the *Sponsor*).
Competition brief	detailed information provided to entrants, which sets out *Client* and project aspirations, site information, budget, functional requirements and any other parameters relevant to development of an effective design concept for the project.

Competition conditions	the documented set of requirements, principles and timelines that govern the conduct, judging and submission processes of an architectural competition.
Endorsement	formal prior recognition by the Australian Institute of Architects that the proposed conditions governing the conduct of an architectural competition are consistent with the relevant requirements of this policy.
Probity Adviser	an appropriately qualified and independent person, who advises the *Professional Adviser*, *Sponsor* or *Client* on, and validates, the probity, equity and integrity of the processes of an architectural competition, where the project is of high value, is highly complex, unusual or contentious, or is politically sensitive.
Professional Adviser	a registered architect, or other appropriately qualified person, who advises the project *Sponsor* or *Client* on the conduct of an architectural competition, and who prepares and coordinates the running of the competition on their behalf.
Sponsor	a person or organisation who initiates and funds an architectural competition in order to select an architect or architectural design team and a preferred design concept for a specific project (may or may not also be the *Client*).

2. ARCHITECTURAL COMPETITIONS - CONTEXT

2.1. Advantages

Compared to other approaches, an architectural competition to select an architect, design team or concept for a project has the advantages that it may:

- generate a wider range of design ideas for a project
- identify a broader range of architects, including emerging architects, who may not otherwise be approached
- generate public interest in the project or its purpose
- provide a valuable opportunity for Sponsor and Client consensus on design direction and the design team
- expand public discussion about design generally or about the specific project
- increase exposure and credibility of the sponsor.

2.2. Disadvantages

An architectural competition may not always be the preferred way to select an architect, design team or concept because it may:

- offer limited exposure of the design team to the Client, key building users or stakeholders
- allow limited scope to value manage and control the budget
- require significant amounts of unpaid time to be spent by a substantial number of architects
- provide an unreasonably limited time frame in which to address very complex brief requirements.

2.3. Appropriate context

A competition is *appropriate* when the project:

- is of public significance
- will benefit from a wide degree of design investigation
- is on a significant or unusual site
- will generate and benefit from heightened public interest
- will promote a higher level of design excellence for the project type or location.

2.4. Inappropriate context

A Competition is *inappropriate* when:

- there is not adequate time to plan, organise, manage, and judge it
- there is insufficient time for entrants to undertake the necessary design work
- an appropriately qualified jury is not appointed
- there are insufficient funds to meet the cost of running the competition
- the project is speculative, funding is inadequate or uncertain, or the Client is not certain of proceeding with the project, and this is not clearly stated in the Competition conditions
- a sound and well-developed brief is not available
- the brief is substantially inconsistent with current development controls for the site
- the prizes and recognition offered for participants are inadequate
- a professional adviser is not to be appointed
- the competition conditions are not consistent with this policy.

3. ARCHITECTURAL COMPETITIONS - CONFIGURATION

3.1. Competition purpose

Competition configuration will vary, depending on the objective of the competition. Broadly, competitions either lead to a commission for the winner, or they don't.

3.1.1 Project competition

A project competition leads directly to the construction of a specific project on a specific site or sites. The objective of such a competition is to select the design that best responds to a clearly defined project brief. The author of the winning design is subsequently engaged to develop the design and complete the project (subject to reasonable conditions).

3.1.2 Ideas competition

An ideas competition does not lead directly to engagement of the winner to realise their winning design. It is used to explore major design issues or design opportunities, generally for a significant site.

An ideas competition is not appropriate where it:

- only promotes or advances a private or commercial interest, or
- does not benefit either the public or the profession, or
- is not explicit about its purpose.

3.2. Competition eligibility

The configuration of a competition will vary dependent on entrant eligibility. Generally competitions fall into one of the following four categories:

3.2.1 Open competition

An open competition does not limit eligibility of entrants, or limits it only to a broad cohort (e.g. architects, design professionals, students, etc.). Entrants self-select provided they meet the broad eligibility criteria.

3.2.2 Limited (open) competition

A limited (open) competition limits eligibility to a defined section of a specific cohort (e.g. architects in a particular geographic location, architects with particular experience, architects under 30, etc.). Entrants self-select provided they meet the specific eligibility criteria.

3.2.3 Limited (select) competition

A limited (select) competition limits eligibility to a specific cohort but entrants are selected by the competition Sponsor, based on defined selection criteria. The selection criteria may be purely qualification-based, or may require an initial, broad conceptual design response to the brief.

3.2.4 Select competition

A select competition limits eligibility to a small group of entrants selected directly by the competition Sponsor.

3.3. Competition staging

An architectural competition can assess entries through a single process, or through a number of stages, requiring a progressively more detailed response.

3.3.1 Single stage competitions

In a single stage competition all entries are judged at the same time, and a winner or winners declared. Single stage competitions are most suited where only a very broad conceptual solution is sought, or where the brief is highly developed and clearly defined.

3.3.2 Multi-stage competitions

Where detailed design concepts are required, a multi-stage process allows less suitable entries to be filtered out before their authors are required to expend unreasonable levels of time or cost in preparing their entry. It can also allow for relevant Client feedback and input before the final submission. Typical competition stages are:

A. *Expression of Interest (EOI) Stage:* Entrants submit details of relevant qualifications, background and experience only. No design proposals or fee proposals are provided at this stage. From the submissions received the Sponsor selects a number of entrants to progress to the next stage.

B. *Initial Concept Stage:* Entrants at this stage prepare an initial concept design, at a broad level, for assessment by the jury, which determines a short list for progression to the next stage. No fee proposals are provided at this stage.

C. *Final Concept Stage*: Entrants at this stage prepare a final concept design for assessment by the jury, which determines the winning entry(ies). Entrants may also be requested to provide a fee proposal (refer 3.5) for subsequent engagement as the architect for the project.

A two-stage competition can comprise stages A and C, or stages B and C. A three-stage competition would include stages A, B and C.

The number of stages and the conditions applicable to each must be specified at the time of the initial competition announcement. (*refer 5.3)*

3.4. Competition deliverables

For a competition to be fair and equitable, the competition brief must clearly define the material required to be submitted by entrants. Such material should be sufficient to allow jury evaluation of design intent, but should not require excessive detail that is unnecessary or excessively costly or time-consuming to produce. Requirements beyond a minimum level are only reasonable where entrants are appropriately compensated.

3.4.1 Design concept

For open competitions, ideas competitions and single-stage competitions, drawings and diagrams sufficient to explain the concept and a short written statement will generally be sufficient for the jury to determine the competition outcome.

3.4.2 Concept plus detail (cost, time, compliance, visualizations, etc.)

For select competitions and multi-stage competitions, a more developed design concept may be required, along with relevant supporting information such as a cost estimate, program, compliance statement or more sophisticated visualisations (fly-throughs, digital models, or physical models).

3.5. Fee proposals

Where a fee proposal is required as part of the submission for the final stage of a competition, the Client, in collaboration with the Professional Adviser and where reasonably necessary, a suitably qualified Quantity Surveyor, must pre-determine a reasonable range within which the fee would be considered acceptable, and each entrant's fee proposal must be:

- submitted under separate cover
- opened only once the preferred design is determined
- accepted if it falls within the pre-determined range
- subject to negotiation with the author of the preferred design if it is not within the pre-determined range.

4. KEY PARTICIPANTS

4.1. Entrants

4.1.1 Entrant eligibility

At the closing date for entries in an architectural competition, entrants must meet the eligibility criteria stated in the competition conditions, and where applicable:

Architects: must be registered, or eligible for registration, in the Australian state or territory where the subject project is located. For an ideas competition, architect entrants must be registered, or eligible for registration, in Australia.

Graduates: must have successfully completed a university course that is recognised for the purpose of registration as an architect in Australia.

Students: must be currently enrolled in a university course that is recognised for the purpose of registration as an architect in Australia.

Teams: other collaborative participants such as engineers, cost consultants, builders, artists, graphic designers, etc. must meet all applicable Australian accreditation or registration requirements for their specific discipline. Where none exist, they should be a member of their relevant professional body.

4.1.2 Ineligible entrants

The following are ineligible to enter an architectural competition:

- all jurors and reserve jurors
- the Client or Sponsor
- the Professional Adviser or Probity Adviser, and any person involved in the preparation or organisation of the competition
- an elected representative or officer of any relevant consent authority
- a family member, associate or employee of any of the above, except where the Probity Adviser or Professional Adviser formally documents that the entrant has declared the relationship substantiated, in writing, that the circumstances of the relationship do not give that entrant any actual or potential advantage over other entrants.

4.1.3 Entrant obligations

All entrants in an architectural competition must:

- comply with the published competition conditions
- maintain anonymity and confidentiality, where these are competition requirements
- respect moral rights and copyright of others in relation to development of their entry
- promptly inform the Professional Adviser or Probity Adviser of any actual, potential or perceived conflict of interest
- make no attempt to unfairly or inappropriately influence the jury process or any member of the jury
- accept the decision of the jury as final.

4.2. Sponsor

4.2.1 Sponsor obligations

The Sponsor of an architectural competition must:

- where not the Client, have the authority of the Client to conduct the architectural competition, to make all required decisions and determinations in relation to it, and to make all required payments to competition participants
- act in accordance with and ensure compliance with the competition conditions
- ensure anonymity and confidentiality, where these are conditions of the competition
- respect the moral rights and copyright of entrants
- promptly inform the Professional Adviser or Probity Adviser of any actual, potential or perceived conflict of interest
- ensure that all entrants, winners, advisers and jury members are paid all agreed prize money, honoraria or fees, or awarded any commission, in accordance with the competition conditions
- make no attempt to unfairly or inappropriately influence the jury process or any member of the jury
- accept the decision of the jury as final.

4.3. Client

4.3.1 Client obligations

The Client for an architectural competition must:

- where not the Sponsor, authorise the Sponsor to conduct the architectural competition, to make all required decisions and determinations in relation to it, and to make all required payments to competition participants
- promptly inform the Professional Adviser or Probity Adviser of any actual, potential or perceived conflict of interest
- make no attempt to unfairly or inappropriately influence the jury process or any member of the jury
- accept the decision of the jury as final
- engage the winning entrant in a project competition as architect for the full scope of consultancy services specified in the competition conditions.

4.4. Professional Adviser

4.4.1 Mandatory requirement for Professional Adviser

An architectural competition conducted in Australia must be coordinated by an appropriately qualified Professional Adviser.

4.4.2 Professional Adviser qualifications

A Professional Adviser must be an architect, or an architectural academic, critic or commentator who has:

- formal education or training in architecture or design, and
- a thorough understanding of and commitment to comply with this Policy, and
- a high level of familiarity with the companion document to this Policy – *Guidelines for the Conduct of Architectural Competitions*, published by the Institute.

4.4.3 Professional Adviser obligations

The Professional Adviser for an architectural competition must:

- have clearly defined authority from the Sponsor to prepare and coordinate the architectural competition and to make all necessary decisions and determinations in relation to it
- ensure that the Client, Sponsor, Jury, any specialist advisers or consultants and all entrants comply with the published competition conditions
- ensure anonymity and confidentiality, where these are conditions of the competition
- ensure that all entries comply in all respects with the competition conditions, and disqualify (in consultation with the Probity Adviser, where applicable) any entry that does not fully comply, except where the entrant can substantiate extenuating circumstances and that the breach does not give that entrant any advantage over other entrants
- ensure that entrants have the opportunity to ask questions and receive answers to all questions asked by entrants
- promptly respond and take appropriate action after advice of any actual, potential or perceived conflict of interest
- make no attempt to unfairly or inappropriately influence the jury process or any member of the jury
- accept the decision of the jury as final.

4.5. Probity Adviser

4.5.1 Requirement for Probity Adviser

A Probity Adviser will not be required for all competitions, as the Professional Adviser can ensure a competition is conducted fairly, equitably, with integrity and in line with any overriding process requirements of the Client or Sponsor.

However, a Probity Adviser should generally be appointed where the competition is subject to public accountability, where the Client or Sponsor is government-based, or where the project is:

- of exceptionally high value, or
- highly complex, unusual or contentious, or
- particularly politically sensitive.

4.6. The Jury

4.6.1 Jury size and composition

The jury shall be composed of the smallest reasonable number of members and should be an odd number not less than three and not exceeding seven. The majority of jurors should be architects, or other relevant design professionals, one of whom must be an architect. Jurors should be selected to maximise diversity in terms of gender, age, geographic location and professional expertise and experience. The jury may include a representative of the Client or Sponsor, but not as jury chair.

4.6.2 Independence of jurors

A majority of jurors must be completely independent of the Sponsor or Client.

4.6.3 Payment of jurors

All costs associated with performance of the jurors' duties in relation to the competition, including travel, accommodation and related costs, must be met by the Sponsor. In addition, a reasonable fee or honorarium should be paid to each juror to cover their commitment of time to the competition.

4.6.4 Reserve jurors

One or more reserve jurors may be appointed to cover the potential absence of a member of the jury, especially in high value or unusually significant architectural competitions. Reserve jurors must attend, but not vote at, all meetings of the jury. Once called upon to replace an absent jury member at a meeting of the jury, the reserve juror must remain on the jury and the replaced juror shall cease to be a member of the jury.

4.6.5 Announcement of jurors

The names and basic credentials of the jurors, jury chair and any reserve jurors must be included in the competition conditions and published before the competition is open for entries.

4.6.6 Role of jury chair

A chair of the jury shall be appointed by the Sponsor, in consultation with the Professional Adviser. The chair must be independent of the Sponsor or Client. The chair shall conduct meetings of the jury and, where the jury has an even number of members, shall have the casting vote.

4.6.7 Consensus or majority vote

The jury chair shall determine, in consultation with the Professional Adviser, whether decisions of the jury shall be by consensus or majority vote.

4.6.8 Jurors in multi-stage competitions

The members of the jury must remain the same, subject to the need for inclusion of any reserve juror, for all stages of a competition that require submission and evaluation of a design concept.

4.6.9 Publication of jury report

The rationale for the jury's decisions must be set out in a formal jury report to the Sponsor, signed by all jurors. The report must be available to the Sponsor prior to the public announcement of the winner(s). After such announcement, the jury report should be available to all entrants and, in the interests of transparency and accountability, made public.

4.6.10 Obligation to make awards

The jury must make awards. The awards shall be final and the names of winning entrants shall be made public by the date stated in the competition conditions.

The jury must give the number and total monetary value of awards stipulated in the competition conditions. However, in exceptional circumstances, it may distribute the awards differently to that proposed in the conditions, provided the total monetary value of prizes awarded is equal to the total amount originally stipulated.

In any architectural competition where entrants are selected by the Sponsor, and in an ideas competition, a first prize must be awarded.

4.6.11 Publication of entries

The Sponsor must arrange for the public exhibition or publication, either physically or online, of all awarded entries. Where possible, all entries considered at the final stage of the competition should be included in the exhibition or publication.

4.7. Technical Advisers or Panels

4.7.1 Technical Advisers

Where considered appropriate, the Client or Sponsor may appoint one or more expert advisers to provide detailed evaluation of particular aspects of submitted entries, where such evaluation may be beyond the scope or skills of the jury.

Commonly such technical advisers can include a Quantity Surveyor or Planning Consultant, but may also include specialist environmental, services or building performance consultants, depending on the nature of the project.

4.7.2 Technical Panels

Where the competition brief is particularly complex or sophisticated, the Client may establish a technical panel to assist the Professional Adviser or the Jury in responding to entrant questions or evaluating submissions. The members of such a panel will generally, but not always, be drawn from the professional staff of the Client organisation. Establishing a technical panel can overcome the perceived need to include subject matter experts from within the Client organisation on the jury.

5. THE COMPETITION PROCESS

5.1. Planning the Competition

The Sponsor of an architectural competition must recognise that a competition is a substantial undertaking, often requiring considerably more cost, time and effort than initially envisaged. The Sponsor must ensure that they have allowed:

- for appointment of the Professional Adviser at the earliest possible time
- sufficient time before the launch of the competition to develop, with the Professional Adviser, a detailed, effective and realistic plan for the competition
- sufficient time for entrants to do the work required for submission of an entry
- adequate time for the assessment, technical review and jury review of the competition submissions at all stages.
- adequate time after the public announcement of the winner(s) for establishment and mobilisation of the project team for the commission that results from the competition.

5.2. Running the Competition

Detailed guidance, including relevant templates and checklists, for the conduct of an architectural competition is included in the companion document – *Guidelines for the Conduct of Architectural Competitions*, published by the Institute.

5.3. Competition Conditions

5.3.1 Announcement of open competitions

Notice of an open or limited (open) architectural competition shall be given by the Sponsor by publication online or in relevant journals or other media, to enable, as far as possible:

- all potential entrants to become aware of the competition simultaneously
- prospective entrants to register and obtain full details of the competition conditions and competition brief at the earliest possible time
- no prospective entrant to be unfairly advantaged or disadvantaged by the way in which the competition is announced, or the competition conditions and brief are to be obtained.

5.3.2 Announcement of select competitions

Invitation to participate in a select or limited (select) architectural competition shall be communicated by the Sponsor to the selected entrants, to ensure, as far as possible that:

- all potential entrants become aware of the competition simultaneously
- selected entrants obtain full details of the competition conditions and competition brief at the earliest possible time
- no entrant is unfairly advantaged or disadvantaged by the way in which the invitation is made, or the competition conditions and brief are to be obtained.

Public notice of a select or limited (select) competition shall be given by the Sponsor by publication online or in relevant journals or other media, to ensure the profession is aware that it is being conducted, and on what basis.

5.3.3 Entry costs

No fee should be payable by an entrant to register for an architectural competition, or to obtain copies of the competition conditions or brief.

Where they wish to limit registration to bona fide entrants, particularly in an open competition, the Sponsor may charge a deposit for the competition materials, which must be refunded on submission of a compliant entry.

5.3.4 Essential conditions

The competition conditions must clearly distinguish mandatory requirements and those for which the entrant has discretion, and must include, as a minimum:

- the name of the Client and Sponsor
- the purpose of the competition and its intended outcome
- a clear explanation of the overall competition process including details of the requirements for registration and every stage of the competition
- information about any deposit payable by the entrant
- details of the number of prizes and the total prize money
- a schedule of key dates, including submission dates for all stages and dates by which payment of prize money and honoraria will be made
- a clearly detailed list of all submission requirements
- the method by which entrants' questions are to be asked and answered
- names and background details of each member of the jury
- details of the criteria by which entries will be evaluated by the jury
- intellectual property, moral rights, copyright and confidentiality obligations and rights of the entrant, jurors, Sponsor and Client
- a requirement for all competition participants (entrants, Sponsor, Client, jurors and advisers) to declare any circumstance that might give rise to an actual or perceived conflict of interest
- the proposed form of contract for any post-competition commission
- any other provision required by this policy.

5.3.5 Multi-stage competitions

The competition conditions must be published when the competition is launched and must cover all obligations and rights of entrants for all stages of a multi-stage competition. Any significant change to the conditions after completion of one stage must be agreed to in writing by all entrants selected to proceed to a subsequent stage. Entrants must also be alerted to the potential for any delays between stages.

5.3.6 Changes to competition conditions or process

The Professional Adviser must promptly notify entrants (and where the competition is endorsed, the Institute) of any material change in the competition conditions, key dates, the project brief, or the constitution or identity of any of the key participants, including jurors.

5.3.7 Treatment of non-compliant submissions

The competition conditions must clearly state the consequences that will apply (including mandatory or discretionary disqualification) where an entry:

- does not comply in all respects with the competition conditions, or
- includes design proposals that do not meet all mandatory requirements of the competition brief.

5.4. Competition Brief

5.4.1 Completeness and clarity

The competition brief must set out a clear vision for the project, including a detailed statement of the project's purpose and objectives, the Client's aspirations for the project, and their intentions regarding its implementation.

Background information provided to entrants (social, economic, technical, geographical, topographical, etc.) must be clear, complete, specific and not open to misinterpretation.

Functional requirements of the Client that are to be accommodated in the design concept must be sufficiently clear and comprehensive to enable the level of detail required in the entrants' submissions.

Supplementary briefing information may be provided to entrants that are selected to proceed to the final stage of a multi-stage competition.

5.4.2 Mandatory vs discretionary requirements

The competition brief must clearly distinguish mandatory requirements and those for which the entrant has discretion or freedom of interpretation. However, mandatory requirements should be kept to a minimum, to enable the greatest possible degree of innovation and the advancement of architectural thinking.

5.5. Good practice principles

An effective architectural competition in Australia should be based on this policy and must reflect the following principles:

5.5.1 All entrants are treated equitably

The competition conditions, all decisions of the Professional Adviser and the processes adopted by the jury must ensure that no entrant has or obtains an unfair advantage over other entrants.

5.5.2 All entries in open competitions are anonymous

Entrants in Open and Limited (open) architectural competitions must be anonymous. Entrants in Select or Limited (select) competitions may be anonymous. Where entrants in a multi-stage competition are required to be anonymous at one stage, the names and design submissions of all entrants who do not proceed to a later stage must remain undisclosed until announcement of the winner(s).

5.5.3 Author of the winning design is engaged as the project architect

In all project competitions, the Client must engage the author of the winning design as the architect for the project.

Where the author of the winning design in an open project competition cannot demonstrate that they have the capacity, resources or capability to act as the architect for the project, they must be engaged to undertake the commission in association with another architect who is acceptable to both the winner and the Client.

5.5.4 A majority of entrants are Australian-based

Open competitions and Limited (open) competitions may be open to entrants from any location, but the competition conditions must be identical for all competitors, irrespective of nationality or practice location.

Select and Limited (select) competitions must have a majority of entrants who are based in Australia, except where all selected entrants are teams that each comprise an Australian architect and an overseas architect.

5.6. Prize Money and Honoraria

5.6.1 Costs of entry preparation

Entrants in an architectural competition will generally expend considerably greater time and cost in preparing their entry than the competition Sponsor envisages. As a result, the quality of entries is likely to be higher where entrants perceive the potential rewards of participation as fair compensation for their effort and risk.

5.6.2 Prize money

The amount of prize money must relate to the size of the project, the amount of work required by entrants, the likely costs of preparing a compliant submission and whether the entrants are also paid an honorarium.

5.6.3 Number of prizes

The number of prizes must relate to the nature and size of the project, the type of competition, the number of entrants, and the nature of any post-competition commission. At least one and generally no more than three prizes should be awarded.

5.6.4 Honoraria

All entrants in a select competition or in the final stage of a multi-stage competition must be paid a reasonable honorarium, in addition to the prize money offered and to any fees associated with a post-competition commission. Entrants in a limited (select) competition may similarly be paid an honorarium at the Sponsor's discretion.

5.6.5 Payments

All payments to entrants, whether prize money, honoraria or other payments for compliant participation in an architectural competition must be made strictly in accordance with the timing set out in the competition conditions, which must be within 30 days of the announcement of the winner or of any shortlist for a subsequent stage.

In the event that the prize money for the winning entrant is intended to form part of the fees for the commission to act as architect for the project, the prize money must be paid within 30 days of the announcement of the winner, regardless of whether the project proceeds or not.

5.7. Copyright and Moral Rights

5.7.1 Author retains copyright

Each entrant, as author of their design, must be entitled under the competition conditions to retain copyright in their work. The winner may be obligated by the competition conditions to provide the Client with a licence to use the winning design for the purposes of the project or other objectives of the competition. Unless specifically prescribed otherwise, such licence is to be for one use only.

5.7.2 Client to preserve moral rights of entrants

Each entrant will retain all moral rights relating to their entry. Except in an ideas competition, the competition conditions must not prescribe any diminution or waiver of an entrant's statutory moral rights.

5.7.3 Treatment in ideas competitions

In an ideas competition, the competition conditions may require entrants to waive any rights that would otherwise restrict the ability of the Client to use the ideas submitted, but such waiver must be limited to the stated purpose of the competition.

5.7.4 Right to reproduce entry materials

The competition conditions may provide for the Client or Sponsor to have the right to reproduce the winning design or any entry materials, solely for a purpose that is directly related to the competition.

5.7.5 Attribution

Except where anonymity of entries is required, any publication, exhibition or reproduction of an entrant's design must be appropriately attributed to its author(s).

5.8. Risks

An architectural competition can reduce or eliminate a range of risks in the selection of an architect or design team and identification of the preferred design concept.

However, the Client, Sponsor and Professional Adviser must recognise that there can still be significant risks associated with running an architectural competition. While application of this policy is intended to mitigate such risks for all participants, a thorough risk assessment must be undertaken as part of the planning process, including identification of relevant risk mitigation strategies, covering at least:

- Financial risks
- Regulatory, authority and approval risks
- Legal risks
- Risks of a dispute over competition processes or outcomes
- Risk associated with too many or too few entrants in an open competition
- Risks associated with process failure
- Reputational risks for all parties.

5.9. Costs

The Sponsor must allow sufficiently for the cost of planning and running an architectural competition, in addition to other project costs and consultants fees, including:

- Sponsor direct and indirect costs, including staff and travel costs
- Advisers' fees, expenses and administrative support costs
- Jury and technical panel fees, honoraria and expenses, and all costs associated with meetings of the jury
- Costs of acquiring and documenting relevant site information, including a site model if appropriate
- Exhibition costs, whether physical or online
- Media, public relations and publications costs (including preparation and graphic design for the Competition Brief and Conditions), before, during and after the competition
- Prize and honoraria costs.

6. INSTITUTE ENDORSED COMPETITIONS

The Institute may endorse an architectural competition that complies with, or substantially complies with the provisions of this policy and the Institute's *Guidelines for the Conduct of Architectural Competitions*.

6.1. Purpose of endorsement

Institute endorsement of an architectural competition has two primary purposes:

- to affirm that the competition conditions are in line with this policy, and
- to permit the competition to be promoted by the Institute, when requested to do so by the competition Sponsor or Professional Adviser.

6.2. Value of endorsement

Institute endorsement can add significant value to an architectural competition by:

- giving all participants in the competition (entrants, sponsor, client, jury and advisers) assurance that the competition conditions are in line with the Institute's policy and guidelines, and therefore that it will be fair, equitable and conducted in accordance with good practice principles
- protecting the rights of competition entrants
- potentially increasing the number of entrants in an open competition
- potentially increasing the quality of entrants in a competition
- offering effective, targeted promotion of the competition, where requested, to the Institute's membership
- supporting the Professional Adviser with advice to assure the Client and Sponsor that the competition will be well-run
- decreasing the risk of the competition or the project attracting negative publicity, as the result of either public or entrant criticism
- increasing the likelihood that the winning submission will represent the highest possible design quality.

6.3. When endorsement required

Institute endorsement is not mandatory for the conduct of an architectural competition in Australia. However, where the Client of an architectural competition is based in any level of government in Australia, or where entrants have been selected from outside Australia, the competition should be endorsed.

Where the Institute, including any Chapter, is the Client or Sponsor of an architectural competition, the competition must be formally endorsed.

6.4. Minimum criteria for endorsement

Institute endorsement will only be given or maintained for an architectural competition in which:

- All entrants are treated equitably (in accordance with section *5.5.1*)
- All entries are anonymous (where required in accordance with section *5.5.2*)
- Submission deliverables are minimised (in accordance with section *3.4*)
- Conflict of interest is prohibited (in accordance with section *5.3.4*)
- Fee proposals are separate and limited to a prescribed range (in accordance with section *3.5*)
- The author of the winning design is to be engaged as the project architect (where appropriate in accordance with section *5.5.3*)
- Prize money and honoraria are specified to be paid within a reasonable time (in accordance with section *5.6.5*)
- A majority of entrants are Australian-based (in accordance with section *5.5.4*)

- Intellectual property and moral rights of entrants are protected (in accordance with section *5.7*)
- The Institute is notified of any material change to competition conditions or process (in accordance with section *6.5*)
- The Institute is provided with a copy of the final jury report at the conclusion of the competition.

6.5. Maintaining endorsement

The Professional Adviser must promptly notify the Institute of any material change in the competition conditions, the constitution or identity of any of the key participants, including jurors, or in relation to any of the above minimum criteria. The Institute may then decide to rescind endorsement or may advise of subsequent action required to retain endorsement.

6.6. Endorsement authority and procedure

Endorsement of an architectural competition must be in accordance with this policy.

The Chief Operating Officer of the Institute (or nominee) has delegated authority to coordinate evaluation of the conditions of a prospective architectural competition for endorsement, and to make all determinations or interpretations required in relation to such evaluation. Where appropriate, advice may be sought from relevant members before a final determination is made.

The decision of the Chief Operating Officer of the Institute to endorse, or not endorse, an architectural competition is final.

6.7. Competition Guidelines of other bodies

6.7.1 International Union of Architects (UIA) requirements

Where an international architectural competition is endorsed by the UIA, as being compliant with the *'UIA Guide for International Competitions in Architecture and Town Planning UNESCO Regulations',* such a competition will be considered to be endorsed by the Institute, even if there are competition conditions that do not comply with this policy.

6.7.2 Requirements of Institutes of Architects in other countries

Where an architectural competition is endorsed by an overseas Institute of Architects, in line with its own policies and guidelines, the Institute will not consider such a competition to be endorsed, unless the Sponsor of the competition seeks Institute endorsement and the competition conditions comply with this policy.

6.7.3 Requirements of government or semi-government authorities

Where a federal, state or local government department or authority adopts its own architectural competition policies or guidelines, and endorses, promotes or conducts a competition that is compliant with them, the Institute will not consider such a competition to be endorsed, unless the Sponsor of the competition seeks Institute endorsement and the competition conditions comply with this policy.

7. REVIEW AND PUBLICATION

7.1. Review

This Architectural Competitions Policy will be reviewed at five-yearly intervals or as directed by National Council.

7.2. Publication

This Architectural Competitions Policy, together with all Related Documents, will be published on the Institute website, updated as necessary and freely available to members and the public.

7.3. Promotion

The Institute will actively promote this policy and its related documents to the profession, the construction industry, governments at all levels and to other relevant stakeholders.

8. RELATED DOCUMENT (PROPOSED FOR FUTURE RELEASE)

8.1. Guidelines for the Conduct of Architectural Competitions

An annotated checklist of the tasks typically required to plan and implement an architectural competition in line with this policy.

8.2. A Guide to Seeking Institute Endorsement of an Architectural Competition

Details of the Institute's endorsement process for prospective architectural competition Sponsors.

8.3. Model Conditions for an Architectural Competition

A template setting out typical clauses for inclusion in the Conditions for an Architectural Competition.

The related documents referred to in Section 8 are currently being finalised and will be made available soon. Meanwhile should you have any queries regarding the policy or supporting documents, please contact Daniela Crawley on daniela.crawley@architecture.com.au

GANSW

23 November 2018

Andrew Mantzounis
Project Director- New Museum
Create Infrastructure
Level 3, 320 Pitt Street
SYDNEY NSW 2000

BY EMAIL:
Andrew.mantzounis@create.nsw.gov.au

Dear Andrew

RE: MAAS New Museum Parramatta Design Excellence Strategy

Government Architect NSW has reviewed the Design Excellence Strategy for the MAAS New Museum Parramatta. It is understood that consultation has been undertaken with City of Parramatta and that endorsement by Council is expected.

Government Architect NSW consider that the Strategy is appropriate for the purposes of the New Museum project. Further Government Architect NSW consider that the Strategy outlines procedures for the hosting of a design competition that is suitable to meet the requirements of the Parramatta Local Environmental Plan 2011.

As noted previously, GANSW recommend that a majority of the jury for both stages have built environment design expertise. This can be achieved through the selection of jury members that have both a relevant design background and other required affiliation or area of expertise.

Yours sincerely,

Olivia Hyde
Acting Government Architect

Government Architect
New South Wales
L24, 320 Pitt Street
Sydney NSW 2000
GPO Box 39
Sydney NSW 2001

government.architect
@planning.nsw.gov.au
T +61 (02)9860 1464

NSW GOVERNMENT

CITY OF PARRAMATTA

Our Reference: DC/17/2018
Contact: Guy Pinkerton
Telephone: 9806-5262

Andrew Mantzounis
Department of Planning and Environment
320 Pitt Street
Sydney NSW 2000

3 December 2018

Dear Andrew,

Re - New Museum Parramatta – Design Excellence Strategy

Thank you for providing Council with the opportunity to comment on the proposed Design Excellence Strategy for the New Museum project at Parramatta. The strategy is an important document as it will explain the process by which a Design Competition for the New Museum will be undertaken and to meet the requirements of the Parramatta Local Environmental Plan 2011.

Council has reviewed the submitted draft Design Excellence Strategy and considers the submission has satisfied the requirements of the Director General's Guidelines, and taken into consideration the Government Architects Design Excellence Competition Guidelines (Draft, 2018). Council, as a key stakeholder, hereby endorses the draft Design Excellence Strategy and recommends that the strategy is now submitted to the Government Architect's Office for formal endorsement.

In terms of the type of Design Excellence Competition proposed, Council is supportive of a two-stage competition process with an open first stage EOI process followed by a short list of entrants (anticipated to be between 4-6 design teams) invited to participate in Stage 2. Stage 2 will require design teams to respond to a detailed Design Competition Brief. In addition, Council also support the establishment of a skilled and experienced Competition Jury, which will include representatives from both the Government Architect NSW and City of Parramatta Council.

We look forward to working with the Department throughout the competition process and during the development of this exciting project.

If you have any questions in relation to this matter, please contact Jennifer Concato on 9806 5767.

Yours sincerely,

Mark Leotta
Acting Director
Strategic Outcomes and Development

Contact us:
council@cityofparramatta.nsw.gov.au | 02 9806 5050
@cityofparramatta | PO Box 32, Parramatta, NSW 2124
ABN 49 907 174 773 | **cityofparramatta.nsw.gov.au**

APPENDIX B: COMPETITION BRIEF

POWERHOUSE PRECINCT PARRAMATTA

INTERNATIONAL DESIGN COMPETITION
STAGE 2 DESIGN BRIEF

NSW GOVERNMENT

Museum of Applied Arts & Sciences

MAAS

MALCOLM READING CONSULTANTS

ACKNOWLEDGMENT OF COUNTRY

We acknowledge Australia's First Nations Peoples as the Traditional Owners and Custodians of the land and give respect to the Elders — past and present — and through them to all Aboriginal and Torres Strait Islander peoples.

RECONCILIATION

Together we will build a culture of respect and exchange, acknowledging deep Australian Aboriginal and Torres Strait Islander connections and continuing practices in applied arts and sciences. The NSW Government recognises and shares the value and importance of preserving, revitalising and strengthening Australian Aboriginal and Torres Strait Islander cultures, histories and achievements. Central to achieving the NSW Government and the Museum of Applied Arts and Sciences vision for reconciliation is the exploration and fulfilment of a range of mutually beneficial opportunities in partnership with Traditional Owners and Australian Aboriginal and Torres Strait Islander cultures and networks, allowing the activities of the Museum to be linked to Australian Aboriginal and Torres Strait Islander peoples as a fundamental human right.

Cover and chapter spreads: Future Parramatta, prepared by City Architect Team, City of Parramatta

NSW GOVERNMENT

Museum of Applied Arts & Sciences

MALCOLM READING CONSULTANTS

Future Parramatta
Prepared by City Architect Team, City of Parramatta

MESSAGE FROM THE MINISTER FOR THE ARTS

On behalf of the NSW Government, I welcome you to Stage Two of the International Design Competition to develop designs for an iconic new Powerhouse Precinct at Parramatta. Having attracted 74 expressions of interest involving a staggering 529 individual firms from 20 countries, the level of global interest we received has endorsed the NSW Government's excitement in moving forward with this Western Sydney project.

The Powerhouse Precinct at Parramatta will enrich the cultural heart of Parramatta, a place that drives and champions cultural creativity and social connection, and where new ideas are formed. The Powerhouse Precinct not only offers a once-in-a-generation opportunity to create a purpose-built museum to welcome people from across NSW, it also provides the opportunity to make a significant contribution to the liveability of the Central River City.

The Powerhouse Precinct at Parramatta will be a distinctive architectural statement and a landmark cultural destination of international significance in one of Australia's fastest-growing and most culturally diverse regions.

A new Museum on the banks of the Parramatta river will be the centrepiece for an arts and cultural precinct, delivering significant economic benefit and world-class opportunities for education and research, as well as spaces for social and digital interaction and exchange. The new building will enhance the Museum of Applied Arts and Science's mission to inspire, engage and educate the community through innovative programs and showcase its 500,000 item–strong Collection.

I am particularly thrilled to see our finalist teams include Australian-led firms, as well as collaborations between emerging and seasoned practices and between Australian and international talent. You are all outstanding, world-class teams, with exceptional skills in design and placemaking. We encourage ambitious and creative responses to this internationally significant project.

The Hon. (Don) Donald Thomas Harwin, BEc(Hons) MLC
Member of the Legislative Council
Special Minister of State, Minister for the Public Service and Employee Relations, Aboriginal Affairs, and the Arts, and
Vice-President of the Executive Council

MESSAGE FROM THE PRESIDENT OF TRUSTEES

On behalf of the Trustees of the Museum of Applied Arts and Sciences, I congratulate the finalists who have progressed to Stage Two of the Powerhouse Precinct at Parramatta design competition. The Powerhouse Precinct will be a cultural institution that inspires and connects people of all ages and backgrounds. We will partner with industry, educators and the arts and cultural community to foster connectedness.

The Powerhouse Precinct will also honour the Museum's history and its extraordinary and rich Collection of more than 500,000 objects, importantly, it will enable us to expand our delivery of exemplary models for the presentation of Indigenous cultural material and further build our strong relationships with Australia's Aboriginal and Torres Strait Islander communities.

The Museum holds collaboration at its core, and this is an opportunity to work closely with our local communities. The Powerhouse Precinct will facilitate international exchange programs, lead interdisciplinary research and set a new benchmark for culturally diverse programming. Together with the Trustees, I look forward to seeing your concepts for the Powerhouse Precinct at Parramatta. We encourage you to be visionary, integrating your designs into the cultural life of Parramatta and the Greater Sydney area while delivering a nationally and internationally renowned destination.

Professor Barney Glover AO
President of Trustees
Museum of Applied Arts and Sciences

INTRODUCTION

The design brief for the Powerhouse Precinct at Parramatta is divided into four sections, each providing information and background to the areas to be considered for design submissions as follows:

PART 1: POWERHOUSE PRECINCT VISION
Provides an overview of the ambition of the new Powerhouse Precinct at Parramatta.

PART 2: DESIGN BRIEF
Provides the details of the design brief that has been developed in response to the vision.

PART 3: URBAN DESIGN GUIDELINES
Provides an overview of the urban planning requirements for the precinct.

TECHNICAL APPENDICES
Contains technical material to be used in conjunction with the brief.

AIMS AND OBJECTIVES

The aims and objectives of the Powerhouse Precinct project is to create an internationally significant contemporary museum of applied arts and sciences within a precinct that exemplifies how Sydney and Australia thinks about itself, its culture and its communities. The Museum will develop and present a dynamic program that showcases the Museum's extraordinary and rich Collection of more than 500,000 objects. It will:

STRATEGIC
— Establish the first major cultural institution located in Western Sydney, in Parramatta - the geographical heart of Sydney.
— Create a precinct that engages and reflects Australia's First Nations peoples and the diverse cultures of Parramatta and NSW.
— Create a distinctive piece of architecture that integrates into the City and connects communities with the river.
— Create an active 24-hour precinct that supports high levels of concurrent activity.
— Invent a new paradigm for the design and operation of a museum to create spaces that enable flexibility and dynamic programs that support repeat visitation.
— Create large-scale spaces that enable the programming of a diverse range of large-scale physical and digital immersive experiences.
— Embed unique and integrated world-class education, research and community facilities.

OPERATIONAL AND PRACTICAL
— Ensure the precinct design supports a high level of production with clear separation of front and back of house.
— Develop a precinct that encourages environmental and social sustainability.
— Achieve value for money for the NSW Government.
— Design a building that is capable of meeting Australian building codes, standards and delivery capabilities, as well as international museum standards.
— Design a building that satisfies this brief.

PART 1

POWERHOUSE PRECINCT VISION

POWERHOUSE
PRECINCT PARRAMATTA

ACKNOWLEDGMENT OF COUNTRY

We acknowledge Australia's First Nations Peoples as the Traditional Owners and Custodians of the land and give respect to the Elders — past and present — and through them to all Aboriginal and Torres Strait Islander peoples.

Shellwork model of the Sydney Harbour Bridge, Mavis Longbottom and Lola Ryan, La Perouse, Sydney, Australia, 1986. MAAS Collection.

RECONCILIATION

Together we will build a culture of respect and exchange, acknowledging deep Australian Aboriginal and Torres Strait Islander connections and continuing practices in applied arts and sciences. The Powerhouse recognises and shares the value and importance of preserving, revitalising and strengthening Australian Aboriginal and Torres Strait Islander cultures, histories and achievements. Central to achieving the NSW Government and the Museum of Applied Arts and Sciences vision for reconciliation is the exploration and fulfilment of a range of mutually beneficial opportunities in partnership with Traditional Owners and Australian Aboriginal and Torres Strait Islander cultures and networks, allowing the activities of the Museum to be linked to Australian Aboriginal and Torres Strait Islander peoples as a fundamental human right.

'Enlightenment' body sculpture 2017 by Grace Lillian Lee (Modelled by Bangarra Dance Theatre dancer Luke Currie Richardson) 2018. MAAS Collection.

A NEW POWERHOUSE

THE CREATION OF THE POWERHOUSE PRECINCT AT PARRAMATTA WILL TRANSFORM AND RENEW ONE OF AUSTRALIA'S OLDEST AND MOST IMPORTANT CULTURAL INSTITUTIONS.

IT WILL SET A NEW INTERNATIONAL BENCHMARK IN CULTURAL PRECINCT DESIGN THAT WILL CARRY FORWARD THE LEGACY OF THE INSTITUTION.

The Powerhouse has a long history of movement and transformation. Its first home was the Garden Palace where it opened in 1881. In 1882 a fire destroyed the Garden Palace, and the Powerhouse was re-established in the Agricultural Hall at the Domain in 1883. In 1893, the Powerhouse was relocated to Harris Street in Ultimo and in 1981 it was moved to the former Tram Depot. In 1988 it moved to its current home at the Ultimo Powerhouse.

The Powerhouse Precinct at Parramatta will be the sixth time that the Powerhouse has moved and transformed in response to the needs of a changing city.

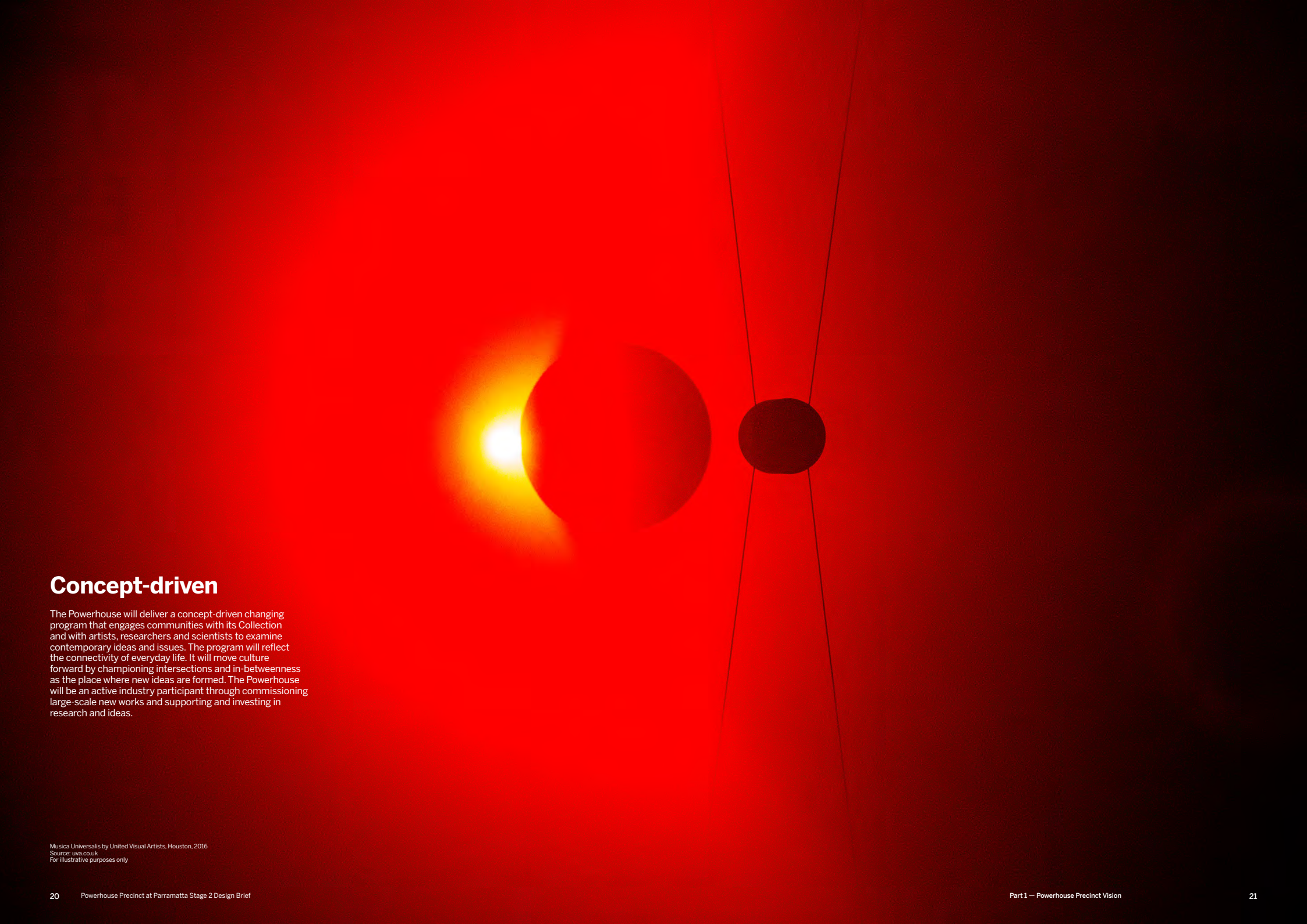
The establishment of the Powerhouse Precinct at Parramatta is the most important transformation in the history of the institution and its city. It signifies a major shift in how Sydney thinks about itself, its culture and its communities. For many years, Sydney's major cultural institutions have hugged the waterfront, physically isolated from communities, suburbs and everyday life. Now, for the first time, a major cultural institution will be located in Western Sydney — in Parramatta, the geographical heart of Sydney.

As Parramatta is home to Australia's most diverse, dynamic and growing communities, the establishment of the Powerhouse there will set an international benchmark in how cultural institutions transform to reflect the changing needs of urban contemporary communities. The Powerhouse Precinct will be central to the re-imagining and redefining of Sydney and is one of the largest cultural infrastructure projects currently being undertaken in Australia.

A radical return

The Powerhouse emerged from a history of 19th Century grand exhibition halls, including the Grand Palais and the Garden Palace. The Powerhouse Precinct will radically return to its origins through the creation of large-scale flexible exhibition spaces that support high visitor numbers, engage communities with new technologies and provide opportunities for collaboration and exchange. Flexible exhibition spaces will ensure a significant increase of access to the Collection through the delivery of a changing, dynamic exhibition program.

Garden Palace, Sydney International Exhibition Building, Nave Looking North, c1879–1884. Source: National Library of Australia, nla.obj-143663396



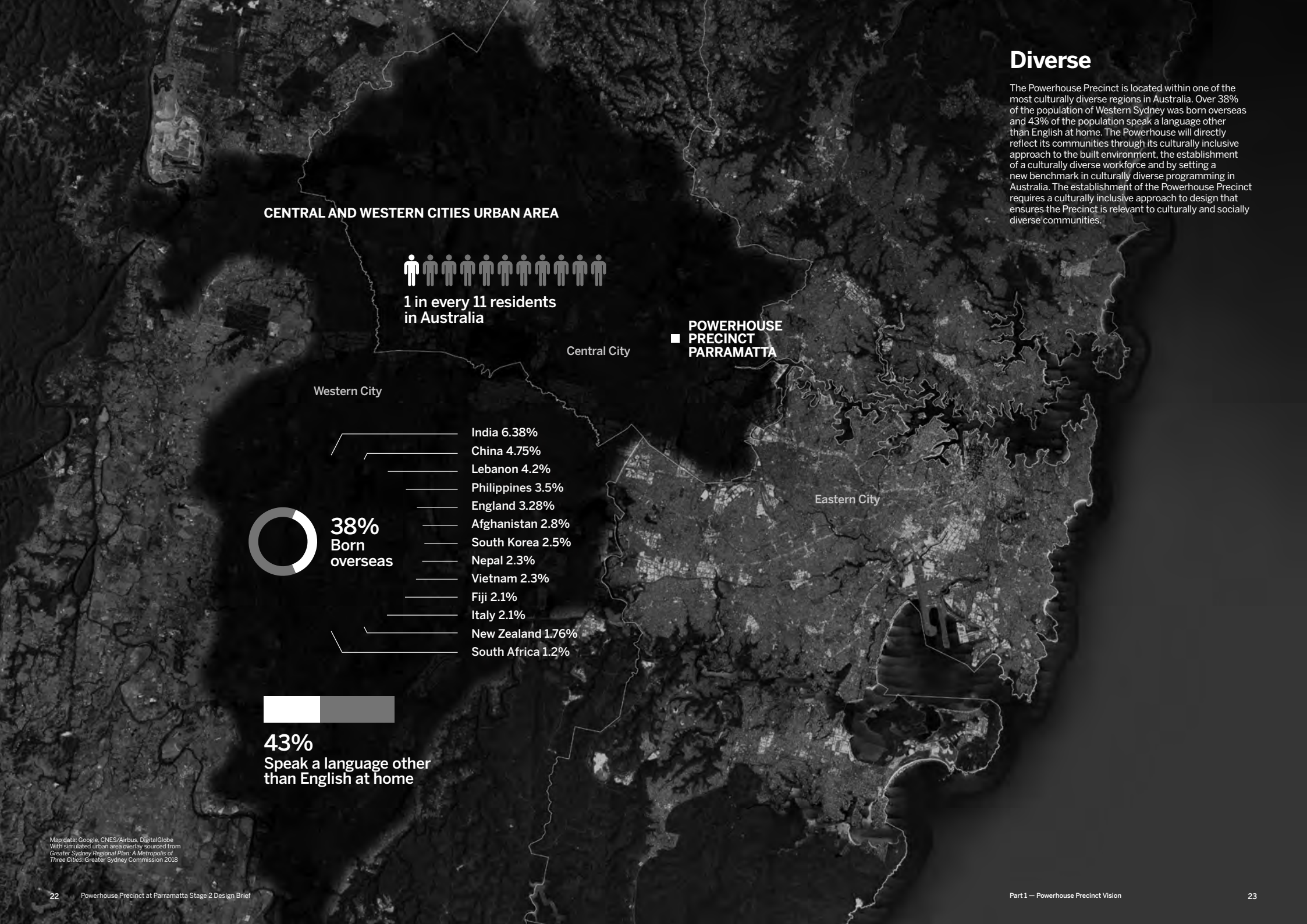
Concept-driven

The Powerhouse will deliver a concept-driven changing program that engages communities with its Collection and with artists, researchers and scientists to examine contemporary ideas and issues. The program will reflect the connectivity of everyday life. It will move culture forward by championing intersections and in-betweenness as the place where new ideas are formed. The Powerhouse will be an active industry participant through commissioning large-scale new works and supporting and investing in research and ideas.

Musica Universalis by United Visual Artists, Houston, 2016
Source: uva.co.uk
For illustrative purposes only

Diverse

The Powerhouse Precinct is located within one of the most culturally diverse regions in Australia. Over 38% of the population of Western Sydney was born overseas and 43% of the population speak a language other than English at home. The Powerhouse will directly reflect its communities through its culturally inclusive approach to the built environment, the establishment of a culturally diverse workforce and by setting a new benchmark in culturally diverse programming in Australia. The establishment of the Powerhouse Precinct requires a culturally inclusive approach to design that ensures the Precinct is relevant to culturally and socially diverse communities.

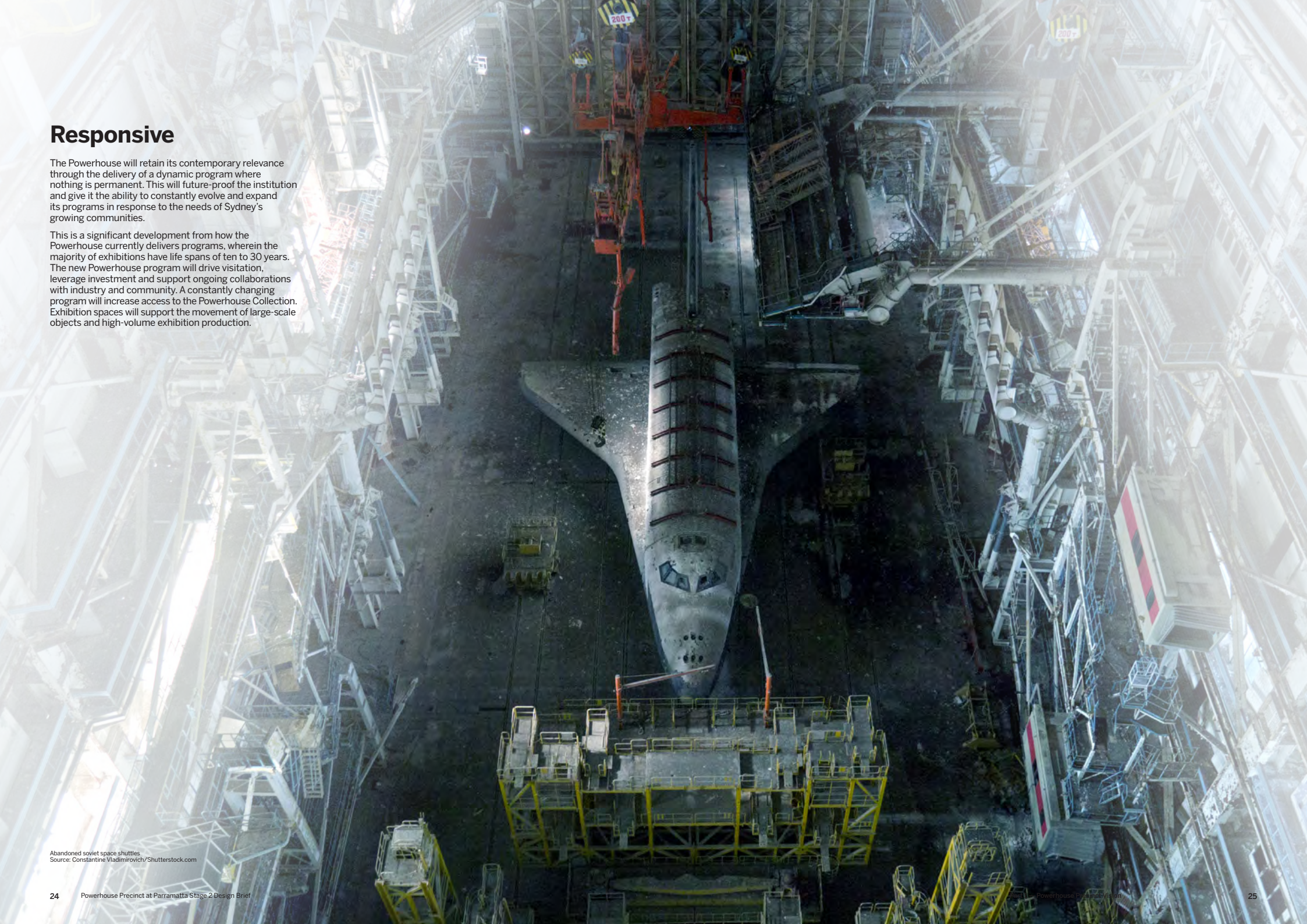


Map data: Google, CNES/Airbus, DigitalGlobe
With simulated urban area overlay sourced from *Greater Sydney Regional Plan: A Metropolis of Three Cities*, Greater Sydney Commission 2018

Responsive

The Powerhouse will retain its contemporary relevance through the delivery of a dynamic program where nothing is permanent. This will future-proof the institution and give it the ability to constantly evolve and expand its programs in response to the needs of Sydney's growing communities.

This is a significant development from how the Powerhouse currently delivers programs, wherein the majority of exhibitions have life spans of ten to 30 years. The new Powerhouse program will drive visitation, leverage investment and support ongoing collaborations with industry and community. A constantly changing program will increase access to the Powerhouse Collection. Exhibition spaces will support the movement of large-scale objects and high-volume exhibition production.



Abandoned soviet space shuttles
Source: Constantine Vladimirovich/Shutterstock.com

Rain Room by Random International, 2012.
Source: random-international.com
For illustrative purposes only

Immersive

Large-scale immersive exhibition experiences provide visitors with unique and distinctive opportunities to step outside everyday life, to connect emotionally with history and memory and provide new pathways to connect with each other. The Powerhouse exhibition program will shift from a collection of isolated displays towards integrated, large-scale immersive experiences that will drive national and international visitation.

The Precinct will have the distinct capacity in Australia to present works of immense scale and deliver integrated events across the whole Precinct that support large visitor numbers. The Powerhouse Precinct will represent the institution and its values by providing a cohesive and coherent experience that intellectually and emotionally connects the built environment, the programs and the public domain.

Entrepreneurial

The Powerhouse will actively generate income through establishing an integrated commercial program that includes multiple food and beverage retail offerings, a curated annual food events program, major events program, product development and commercial programs that are delivered across the Precinct. The commercial program will be responsive to the needs of the cultural and social demographic of Greater Sydney.

The ability to effect large amounts of commercial income will rely on the Precinct being highly responsive and flexible so it can accommodate the needs of multiple partners and deliver high-quality outcomes to clients. This includes minimising production times so that public-facing activity is maximised. It will also rely on the provision of distinctive commercial opportunities and experiences that seamlessly integrate into broader Precinct activity.

The Powerhouse Precinct's approach to visitation will see multiple daily activities. Food-event and retail programs will be integrated into artistic, education, exhibition and major-events programs. It will be critical that the Precinct maximises its capacity to present multiple activities and minimises their impact on each other.

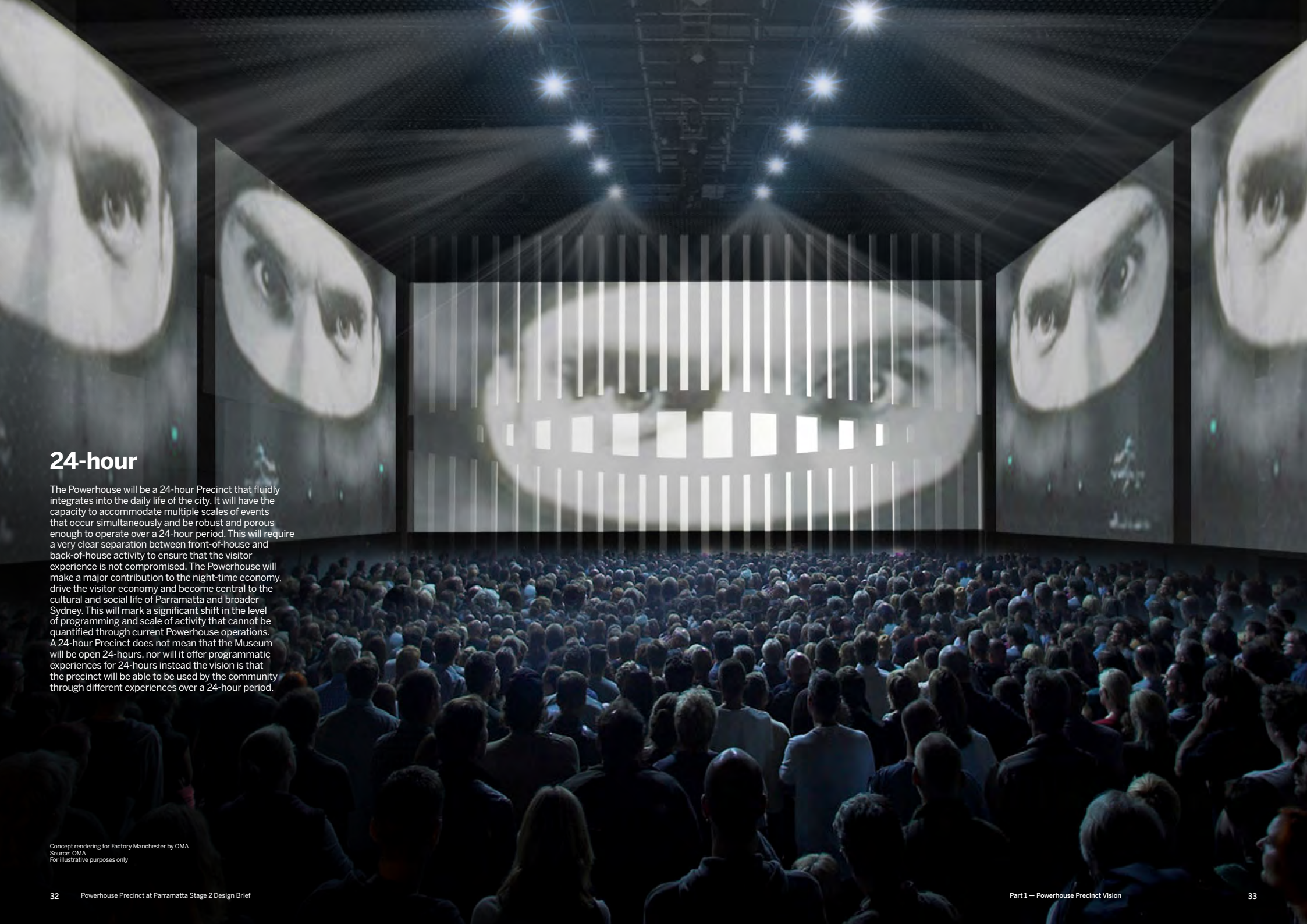
The commercial programs will extend the profile of the Precinct. The food- and beverage-event programs will establish multi-year partnerships with new industries and attract new and diverse audiences. The Powerhouse will entrepreneur new major events that contribute to the NSW Visitor Economy and Parramatta's Night Time Economy Discussion Paper and make Parramatta a major national and international destination for cultural activity. The commercial programs will continue to expand the income base of the Precinct and will mitigate risk by ensuring that income sources continue to diversify.

Kanye West Saint Pablo Tour 2016
Source: kanyetothe.com
For illustrative purposes only

The river

There is a unique and significant opportunity to make the Parramatta river an active participant in the life of the Precinct. The Precinct will become a responsible caretaker of the river and in turn, the river will connect the Precinct with its communities, its environment and its cultural histories. This active relationship will inform Precinct programs, research and education and include the development of infrastructure that contributes to river health. The Powerhouse will be an ambassador and advocate for the river and its future.

Harbour bath at Islands Brygge, Copenhagen, Denmark
JDS Architects and Bjarke Ingels Group
Source: vinterbadbryggen.com
For illustrative purposes only



24-hour

The Powerhouse will be a 24-hour Precinct that fluidly integrates into the daily life of the city. It will have the capacity to accommodate multiple scales of events that occur simultaneously and be robust and porous enough to operate over a 24-hour period. This will require a very clear separation between front-of-house and back-of-house activity to ensure that the visitor experience is not compromised. The Powerhouse will make a major contribution to the night-time economy, drive the visitor economy and become central to the cultural and social life of Parramatta and broader Sydney. This will mark a significant shift in the level of programming and scale of activity that cannot be quantified through current Powerhouse operations. A 24-hour Precinct does not mean that the Museum will be open 24-hours, nor will it offer programmatic experiences for 24-hours instead the vision is that the precinct will be able to be used by the community through different experiences over a 24-hour period.

Concept rendering for Factory Manchester by OMA
Source: OMA
For illustrative purposes only

Precinct activity

The Powerhouse will produce and deliver a diverse and contemporary daily program that maintains high activity levels across the Precinct. An example of any given day may include the following types of programs:

PRESENTATION SPACE 1	Large-scale commission developed in partnership with the Australian Space Agency and NASA.
PRESENTATION SPACE 2	International Future Science exhibition examining developments in health and technology presented in partnership with CSIRO.
PRESENTATION SPACE 3	Major exhibition examining the history of Australian engineering and its contemporary application in partnership with the Australian Society of Engineering and Technology.
PRESENTATION SPACE 4	Collaborative exhibition presenting new research and applications of Artificial Intelligence alongside the story of international AI development.
PRESENTATION SPACE 5	A major exhibition examining the past and future impact that technology has on agriculture. Presented in partnership with the Australian Centre for International Agricultural Research.
PRESENTATION SPACE 6	Immersive screen exhibition examining how the southern sky has influenced diverse cultures, including Indigenous, South-East Asian and Pacific.
PRESENTATION SPACE 7	International robotics exhibition developed in partnership with a technology company and three major exhibition partners.
RETAIL FOOD AND BEVERAGE	Ten distinctive, fine-grain food and beverage offerings will reflect the cultural diversity of Parramatta and Western Sydney.
PUBLIC DOMAIN	Major event: Loy Krathong, a Thai community festival which invites community members to give offerings to the river to create wishes for the Lunar New Year. The event will include food programs, workshops, performances and connect broader Sydney communities with contemporary Thai culture.
PUBLIC DOMAIN	Social and recreational space integrated into the Precinct, supporting wi-fi for working and providing informal spaces for meeting and for culturally specific activities.
EVENT SPACE	Multi-use space that will support forums, commercial events and conferences. Events may include private corporate events, community social events and fundraising dinners.
COMMUNITY/INDUSTRY/ STAFF MEETING ROOMS	Multi-use meeting rooms will provide amenities for Staff Meeting Rooms community groups, industry partners, Powerlab residents and Powerhouse staff, supporting collaboration and co-working opportunities. Meetings may include First Nations Elders, affiliated societies, TechSydney central start-ups, Greater Sydney Commission planning meetings, and NSW Pacific Communities Council meetings.
RESEARCH LEARNING LABS	Multi-use learning and research spaces for workshops, education programs, research and development for Powerlab residents. Programs may include an AFTRS digital filmmaking program, VR Creation Lab, WSBC Future Leaders Forum and after-school science programs.
RESEARCH LEARNING AND POWERLAB KITCHEN	A shared facility to service Powerlab residents alongside facilitating a program that will include NSW Department of Agriculture Producers Forum, NSW Producers and Chefs Knowledge Exchange and secondary students' chefs' masterclasses.
POWERLAB	Sixty residential studios, developed with a range of partners, will support short- and long-term research residencies for up to one year, such as a First Nations urban research residency, an Australian Institute of Architects residency, a NSW Technology scholarship residency, a NSW Department of Education international research residency, a Westmead Health District residency, and a Music NSW residency.
POWERLAB CO-WORKING SPACE	Co-working office space available for Powerlab Residents and integrated into the Powerhouse staff offices.
CONCIERGE	Central transaction point for the Precinct. A gathering point for guided tours and students, and a location for ongoing visitor and customer service.

POWERHOUSE

STRUCTURE

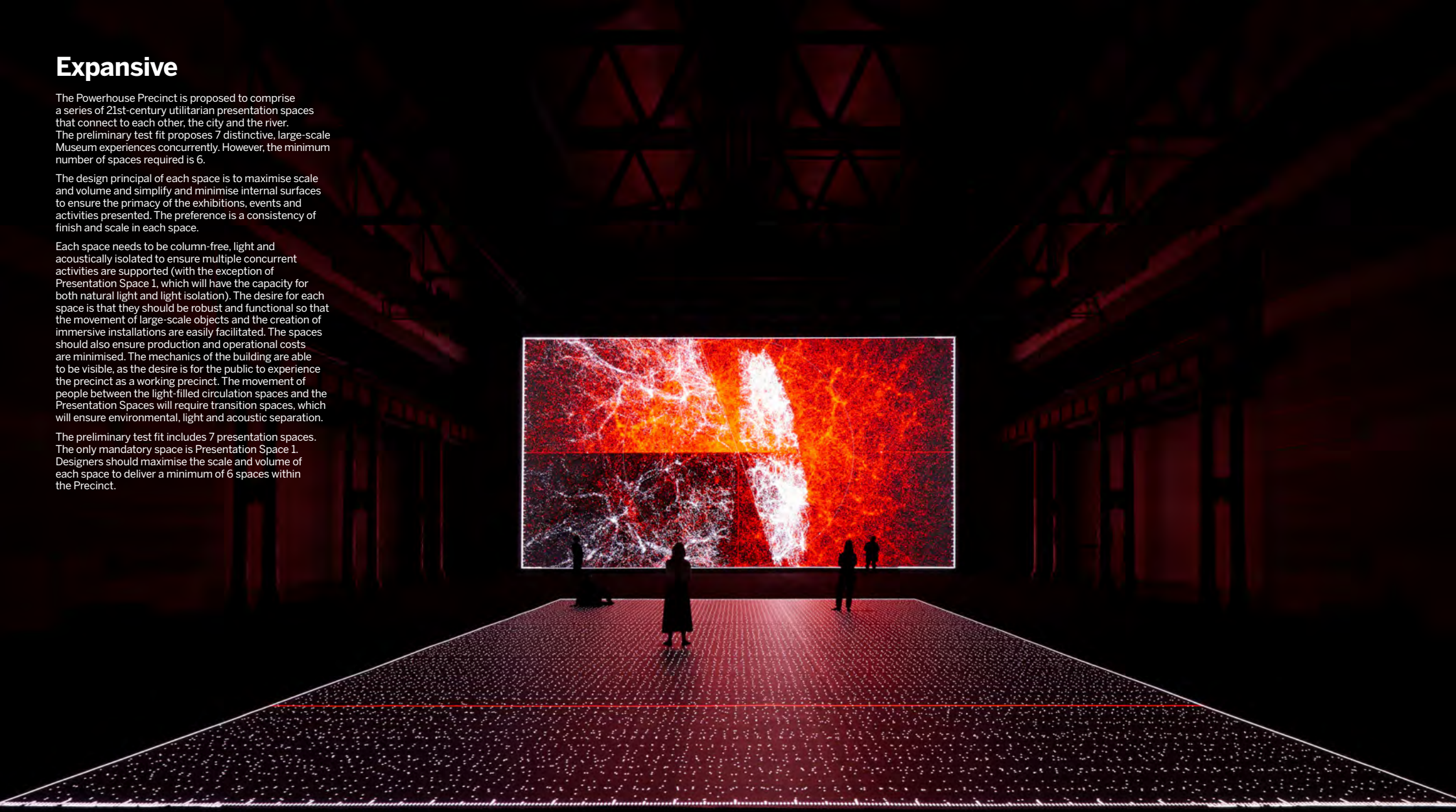
Expansive

The Powerhouse Precinct is proposed to comprise a series of 21st-century utilitarian presentation spaces that connect to each other, the city and the river. The preliminary test fit proposes 7 distinctive, large-scale Museum experiences concurrently. However, the minimum number of spaces required is 6.

The design principal of each space is to maximise scale and volume and simplify and minimise internal surfaces to ensure the primacy of the exhibitions, events and activities presented. The preference is a consistency of finish and scale in each space.

Each space needs to be column-free, light and acoustically isolated to ensure multiple concurrent activities are supported (with the exception of Presentation Space 1, which will have the capacity for both natural light and light isolation). The desire for each space is that they should be robust and functional so that the movement of large-scale objects and the creation of immersive installations are easily facilitated. The spaces should also ensure production and operational costs are minimised. The mechanics of the building are able to be visible, as the desire is for the public to experience the precinct as a working precinct. The movement of people between the light-filled circulation spaces and the Presentation Spaces will require transition spaces, which will ensure environmental, light and acoustic separation.

The preliminary test fit includes 7 presentation spaces. The only mandatory space is Presentation Space 1. Designers should maximise the scale and volume of each space to deliver a minimum of 6 spaces within the Precinct.



Ryoji Ikeda, micro macro, Carriageworks, Sydney
Source: Carriageworks, photo Zan Wimberley 2018
For illustrative purposes only

Flexible

The Powerhouse Precinct is planned to deliver a dynamic, changing program that constantly shifts in scale to accommodate multiple daily activities and large-scale events that will be delivered across the whole Precinct. The Powerhouse will maintain its relevance and connectivity to its communities through having the capacity to be able to respond to change. Nothing will be permanently one thing. Each of the Presentation Spaces will have degrees of capacity for multiple uses including exhibitions, commercial events, live performance, education, conferences and cinema. This flexibility will support the Powerhouse's entrepreneurial approach to commercial activity through integrating commercial programs across the Precinct.

Space shuttle Discovery, National Air and Space Museum, Steven F. Udvar-Hazy Center, Virginia. For illustrative purposes only

Robust

The Powerhouse is planned to be a robust working Precinct where every detail has a purpose that contributes to its operations. The detailing will be highly functional. It will have a visual utility that is true to its operations. Everything will be in the service of the practical and the sustainable high utilisation of each space. The floors of the Presentation Spaces will have the capacity to directly load in with heavy machinery. The mechanics of the building will be visible and add to the story of its operations.

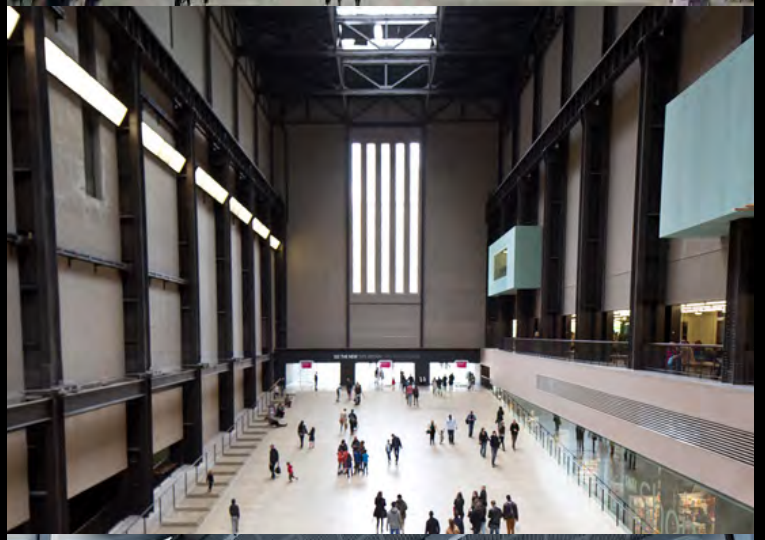
Anechoic chamber at Naval Air Station (NAS) Patuxent River, Maryland, USA, 2015
Source: NAVAIR, US Navy
For illustrative purposes only

Presentation space 1

Minimum 3,000 square metres; clear height 20 metres
Presentation space one should be:
— monumental scale
— a space that is in contrast to the density of the city
— a space that can both connect and separate from the public domain
— a space that has the ability to support large scale immersive exhibitions

Grand Palais, Paris

Built for the Exposition Universelle of 1900 and dedicated 'by the Republic to the glory of French art', the Grand Palais was listed as a historical monument in 2000. Its architecture, mixing classicism and modernity, its exceptional dimensions (70,000 m2) and its remarkable volumes make it an outstanding cultural and heritage site. The structure was built in the style of Beaux-Arts architecture as taught by the École des Beaux-Arts of Paris. The building reflects the movement's taste for ornate decoration through its stone facades, the formality of its floor planning and the use of techniques that were innovative at the time, such as its glass vault, its structure made of iron and light steel framing, and its use of reinforced concrete.



Turbine Hall, Tate Modern, London

The Tate Modern Turbine Hall has hosted some of the world's most memorable and acclaimed works of contemporary art. And the way artists have interpreted this vast industrial space has revolutionised public perceptions of contemporary art in the twenty-first century. The Turbine Hall has a vast and dramatic entrance area with ramped access, as well as display space for large-scale sculptural projects and site-specific installation art.

The Shed Arts Centre, New York

The Shed commissions original works of art, across all disciplines, for all audiences. They bring together established and emerging artists in fields ranging from hip hop to classical music, painting to digital media, theater to literature, and sculpture to dance. By minimising social and economic barriers to entry they make a warm, welcoming space for innovation. By offering access and insight into the creative process, they forge deep bonds between artists and audiences. Driven by their belief that access to art is a right, and not a privilege, they present exciting, engaging experiences for their communities.

Grand Palais, France
Source: CC BY 2.0, commons.wikimedia.org, photo by Daniel Hennemand

Turbine Hall at Tate Modern, London, UK
Source: Tony French/Alamy Stock Photo

The Shed Arts Center Manhattan by Diller Scofidio + Renfro, Rockwell Group
Source: news.artnet.com

For illustrative purposes only

Presentation spaces 2 and 3

Minimum 2,000 square metres; clear height 10 metres
Each space should be acoustically separated, light-isolated and environmentally controlled.

Presentation spaces 4, 5 and 6

Minimum 1,600 square metres; clear height 10 metres
Each space should be acoustically separated, light-isolated and environmentally controlled

Installation view, MOUSEN + MSG
The Great Chain of Being – Planet Trilogy,
Power Station of Art 2016
Source: artasiapacific.com

Powerstation of Art, Shanghai

Renovated from the former Nanshi Power Plant, PSA was once the Pavilion of Future during the 2010 Shanghai World Expo. The Museum has not only witnessed the city's vast changes from the industry age to the IT era, but also provided a rich source of inspirations for artists with its simple yet straightforward architectural styles. And as Shanghai's generator for its new urban culture, PSA regards non-stopping innovation and progress as the key to its long-term vitality.

Space Shuttle Endeavour,
California Science Centre

California Science Centre, Los Angeles

The California Science Centre provides an innovative model for engagement with science and learning by combining exhibitions with an on-site Science Centre School and Amgen Centre for Science Learning as well as a professional development program. The Centre opened in February 1998 and includes four major exhibition areas that support large scale exhibition experiences featuring internationally important objects including the Endeavour Space Shuttle.

Zhang Huan *Sydney Buddha*,
Carriageworks, 2015.
Source: sydneycultureessays.org.au,
photo Zan Wimberley

Carriageworks, Sydney

Carriageworks is the largest multi-arts centre in Australia. They commission Australian and International artists to make monumental new work that intersects with contemporary ideas. Reflecting the diverse communities of urban Sydney, their artist-led program is ambitious, radical and always inclusive.

For illustrative purposes only

Presentation spaces 3 and 6

Should include an operable seating bank for minimum of 800 people in a variety of configurations as appropriate to the scale of the space.

PRESENTATION SPACE 6
Should be designed to support a diverse, immersive screen program. The space will have the capacity to project onto the ceiling, walls and floor. The space will include a flexible seating bank and a flexible screen environment that has the capacity to have multiple configurations that respond to the programs being presented.

Pirelli Hangar Bicocca, Milan

Pirelli Hangar Bicocca is a non-profit foundation, established in 2004, which has converted a former industrial plant in Milan into an institution for producing and promoting contemporary art. This dynamic center for experimentation and discovery covers 15,000 square meters, making it one of the largest contiguous exhibition spaces in Europe. It presents major solo shows every year by Italian and international artists, with each project conceived to work in close relation to the architecture of the complex.

National Air and Space Museum, Washington

The Smithsonian's National Air and Space Museum collects, preserves, studies, and exhibits artifacts, archival materials, and works of art related to the history, culture, and science of aviation and spaceflight and the study of the universe. The Museum presents programs, educational activities, lectures, and performances that reflect the American spirit, and the innovation, courage, and optimism that have led to triumphs in the history, science and technology of flight.

Park Avenue Armory, New York

Part American palace, part industrial shed, Park Avenue Armory is dedicated to supporting unconventional works in the visual and performing arts that need non-traditional spaces for their full realisation, enabling artists to create, students to experience, and audiences to consume epic and adventurous presentations that cannot be mounted elsewhere.

Damián Ortega *Casino*, HangarBicocca, Milan 2015
Source: hangarbicocca.org

Apollo 11 command module Columbia
Source: airandspace.si.edu, photo by Eric Long

Park Avenue Armory, New York
Source: Public Domain, commons.wikimedia.org, photo by photo by Jack E Boucher

For illustrative purposes only

A working precinct

Powerhouse is planned to be a living working precinct that will connect Powerlab residents with students, with staff, with audience members and the community. The ethos of the precinct will be about collaboration and sharing knowledge and highly valuing the perspectives of First Nations and culturally inclusive thinking. The design, integration and adjacencies of each of the programs will facilitate and support open collaboration and the sharing of knowledge.

Powerlab
Users: Resident artists, researchers, scientists and Powerhouse collaborators

Central to the Powerhouse Precinct will be the Powerlab, which will include 60 residential apartments supporting short- and long-term residencies (for up to one year). These residencies will be supported through access to studio and working spaces. It will be a place where artists, researchers and scientists from across Australia and around the world come to collaborate, create, research and live. It will support the examination of interdisciplinary ideas that connect diverse communities with research and new thinking.

Learning Labs
Users: Teachers, primary and secondary students, community organisations

The Learning Labs should be flexible workshop spaces that will support high volumes of primary and secondary students alongside school and vacation care. It should also support community education programs and connectivity between Powerlab residents and industry partners.

Digital Studios
Users: Powerhouse staff, industry partners, Powerlab residents, community organisations and tertiary students

The Digital Studios should provide a flexible digital studio space supporting the professional production of photography, audio and video. They should include a soundproof audio and video recording studio alongside support for post- production and broader content development and distribution. The Digital Studios will be a resource for Powerlab residents, industry partners and local communities to create video, audio and podcast content that will be shared across Powerhouse digital channels.

Multi-use Meeting Rooms
Users: Powerhouse staff, industry partners, Powerlab residents, community organisations

Flexible multi-use spaces, these rooms will support variously sized meetings, forums and collaborative working.

Research Learning and Powerlab Kitchen
Users: Powerhouse staff, industry partners, Powerlab residents, community organisations

A large-scale communal kitchen, this will support the preparation and sharing of meals between collaborators and project teams. It may also accommodate special events where teams share knowledge with communities and audience. The communal kitchen may be integrated into the curated food program that may include chef masterclasses, producers' events, demonstrations, secondary school programs and the celebration of culturally specific community days.

Co-working Space
Users: Powerhouse staff, Powerlab residents

The Co-working office space should have hot-desking and an open plan, supporting collaboration and efficient work practices.

A/D/O creative hub, Brooklyn, New York by nARCHITECTS
Source: Photographer Matthew Carbone
For illustrative purposes only

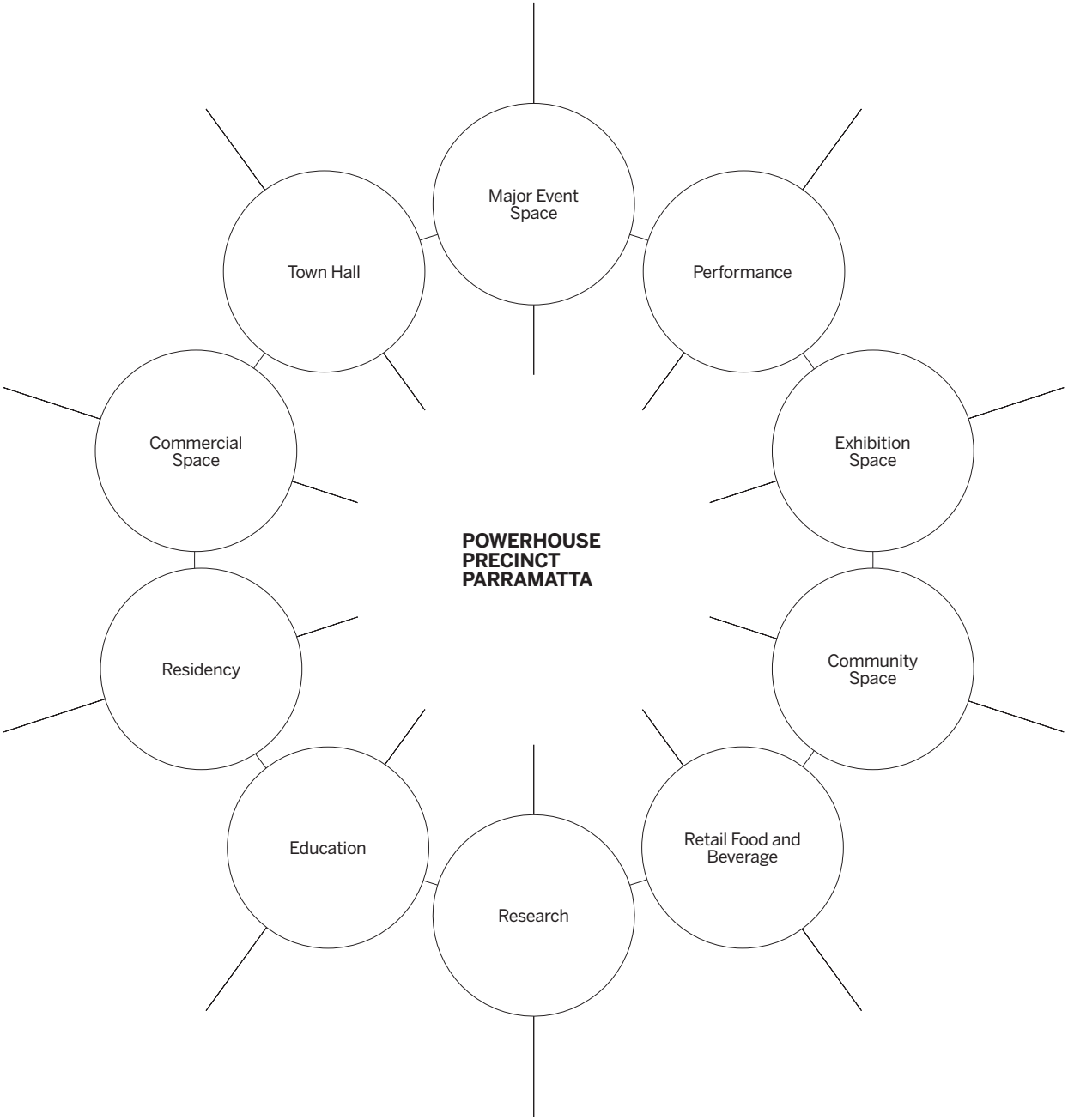
Civic life

The Powerhouse will create new large-scale contemporary events that reflect the aspirations of its communities and present culturally specific major events that integrate and expand the annual cultural calendar of Sydney. Each event will have the capacity to support up to 10 000 people across the Precinct (within the Museum and across the public domain) and will include multiple activities including live performance, music, food and cultural activity. Events may include large-scale cultural festivals, weekly food and producer markets, live-music events and community-led celebrations.

Diwali celebrations in Vrindavan, India
Source: Reuters/Ahmad Masood

Diverse activity

The Precinct's building typology will support access and increase utilisation by facilitating multiple diverse, concurrent activities to ensure that the Precinct reads as a naturally integrated part of the city.



Fine grain

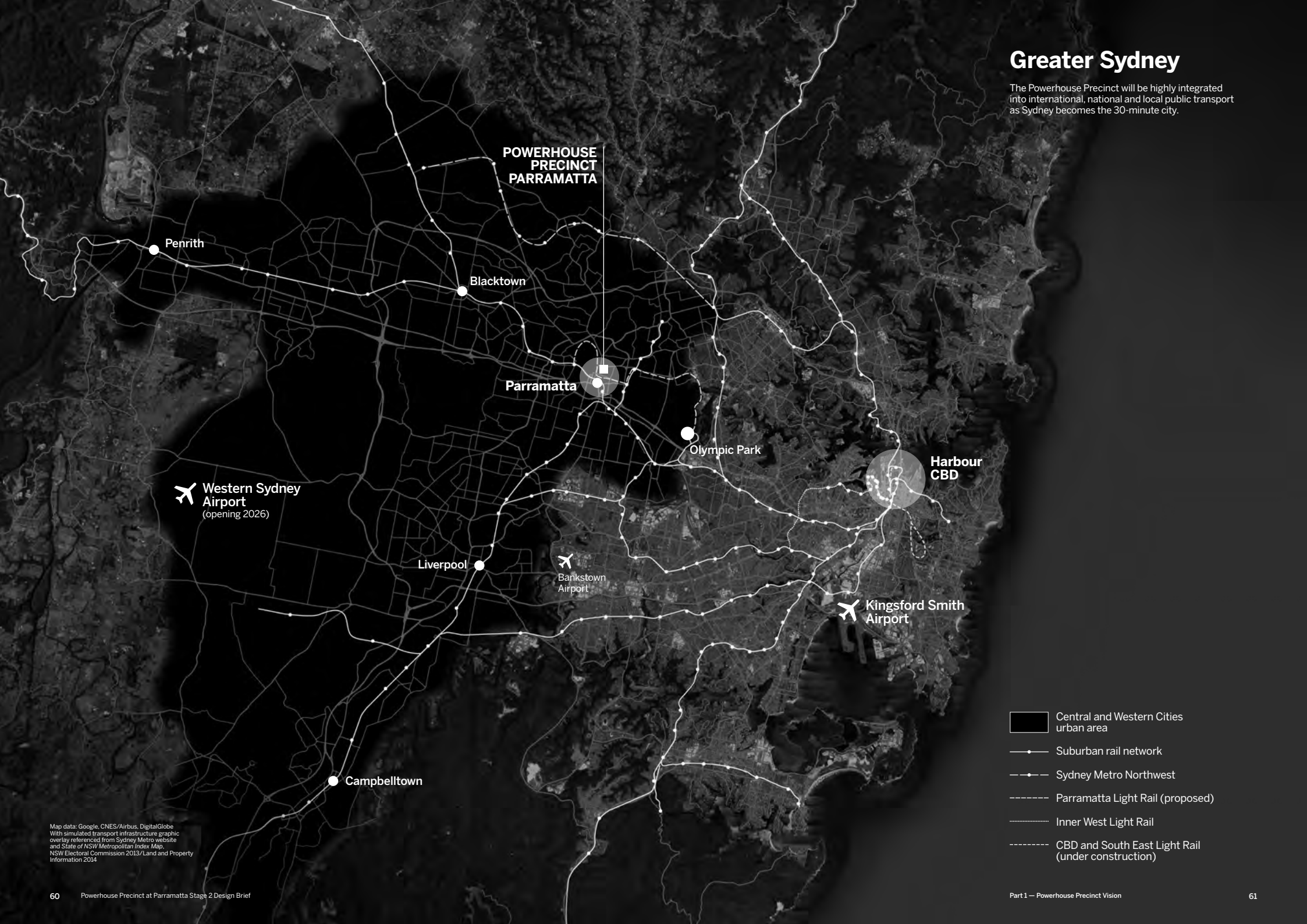
The Powerhouse Precinct will fluidly integrate into the fine grain of the City. It should be porous at the edges, with no front door. There should be multiple entry points, multiple approaches and multiple places to stop. You won't be able to tell where the city ends and the Precinct begins. It should include multi-layered, multi-level social and recreational spaces. The intimacy of its commercial food and beverage offerings will contrast with the iconic internationally-renowned presentation spaces. It will be a short cut through: no one will walk around it. It will be cool and covered with green shade in summer. It will be a place you will want to stay into the night. It will be a place with soft edges, no harsh lights or big signage. It will become what it does and what it provides. It will be defined through how it is used, a mirror of its communities.

Dark Mofo Winter Feast 2018
Source: timeout.com, photo Dark Mofo/Jesse Hunniford
For illustrative purposes only

POWERHOUSE
CONNECTIVITY

Greater Sydney

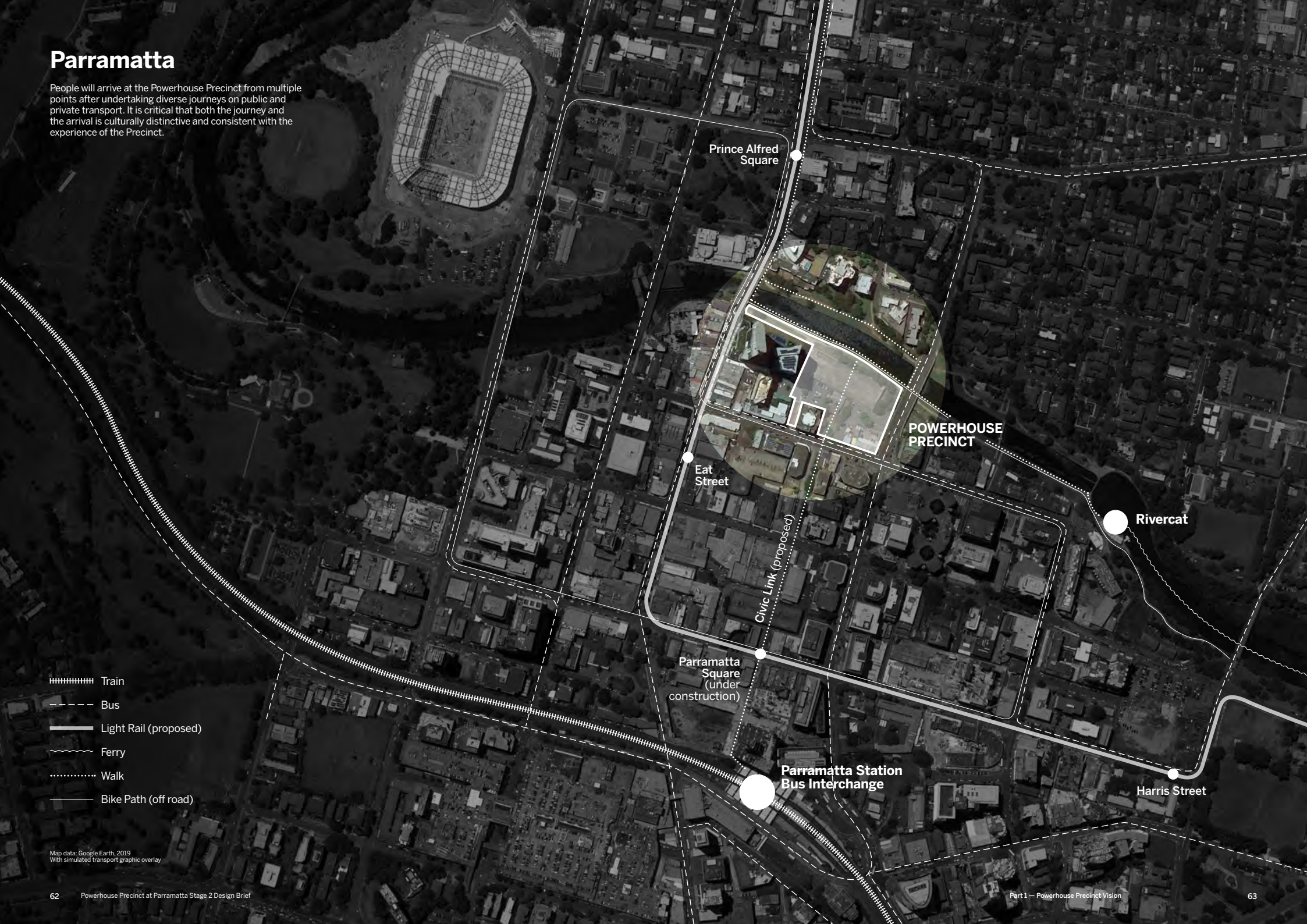
The Powerhouse Precinct will be highly integrated into international, national and local public transport as Sydney becomes the 30-minute city.



Map data: Google, CNES/Airbus, DigitalGlobe
With simulated transport infrastructure graphic overlay referenced from Sydney Metro website and *State of NSW Metropolitan Index Map*, NSW Electoral Commission 2013/Land and Property Information 2014

Parramatta

People will arrive at the Powerhouse Precinct from multiple points after undertaking diverse journeys on public and private transport. It is critical that both the journey and the arrival is culturally distinctive and consistent with the experience of the Precinct.



Map data: Google Earth, 2019
With simulated transport graphic overlay

Integrated arts and cultural precincts

The Powerhouse will integrate into broader arts and cultural precincts, including Parramatta Riverside Theatres and Parramatta North Heritage Core. This will include partnering on the development and delivery of arts and cultural programs, shared marketing and publicity strategies and collaboratively developing an integrated annual events program.

Map data: Google Earth, 2019
With graphic overlay

Distinctive arrivals

The Precinct will have a strong commitment to providing care and service to our audiences, communities, partners and clients. The Powerhouse will rethink and set a new benchmark in providing the highest levels of service. Central to the Precinct will be an active 24-hour concierge that is welcoming, responsive and has an extraordinary level of commitment to detail. Services provided will reflect the needs of the diverse communities that will utilise the Precinct, taking into consideration language, tradition and culture. The concierge space will be the central information point and the location where all transactions for the Precinct will take place. It will be clearly visible from multiple entry points and easily accessible from the Civic Link. The Precinct will be easily traversed. Wayfinding will be simple and intuitive and will not require high levels of signage. Circulation spaces will be generous, encouraging extended dwell-times. More information on the Civic Link is available in the Urban Design Guidelines.

Rivercat on the Parramatta River, adapted for illustrative purposes only.
Source: Saberwyn/Wikimedia Commons/ CC BY-SA 3.0 (https://creativecommons.org/licenses/by-sa/3.0/)

Powerline

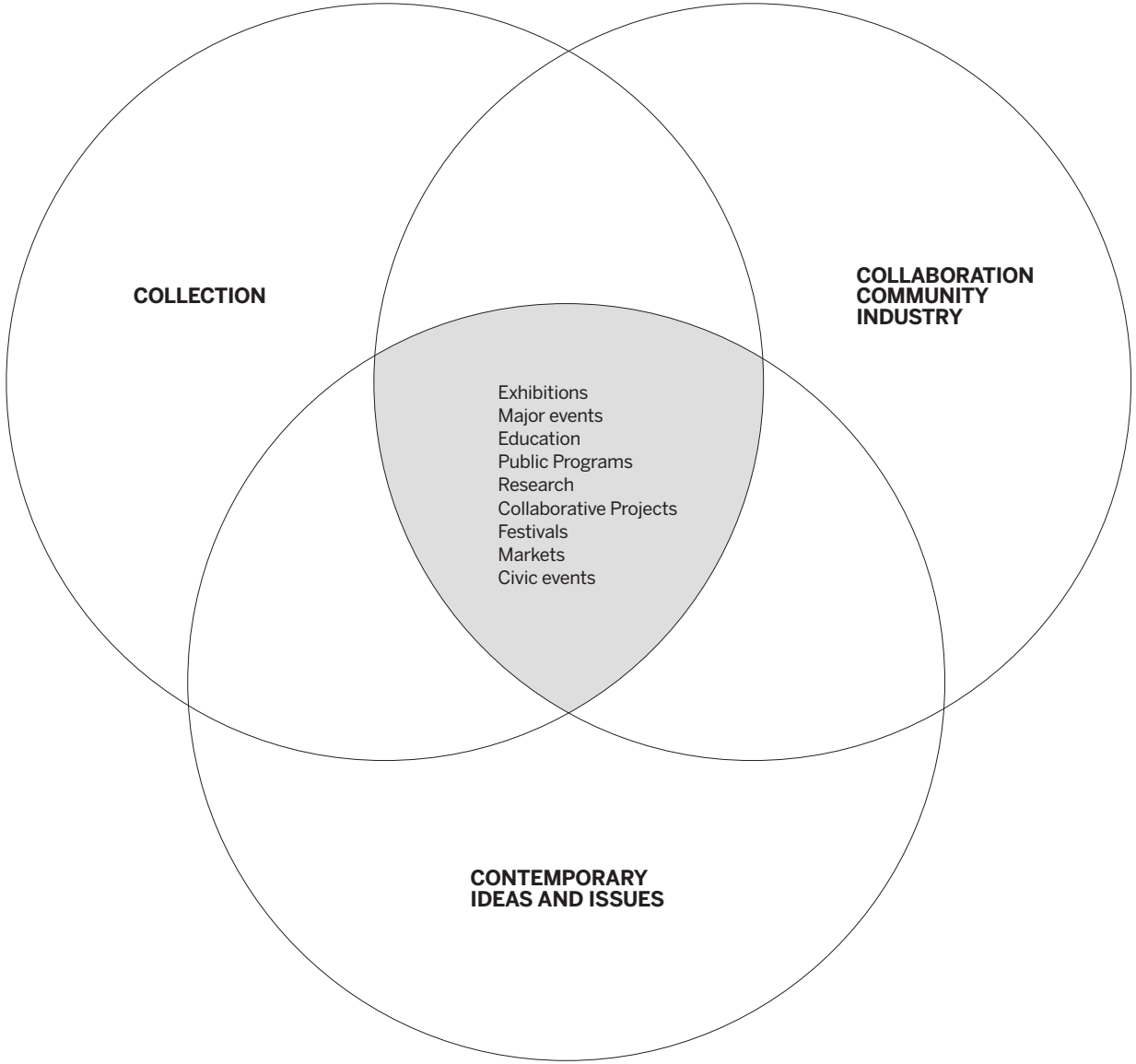
There is an opportunity to consider the integration of an elevated green pathway that connects the Precinct with the adjacent bridges. The Powerline could add amenity and include a diversity of social and cultural spaces that will be accessible to the community. This is some current thinking but the principle we want to achieve is increased connectivity. We encourage teams to apply creative thinking to the principle.

High Line Park, New York, USA
Source: Richard Levine/Alamy Stock Photo

POWERHOUSE
PROGRAM

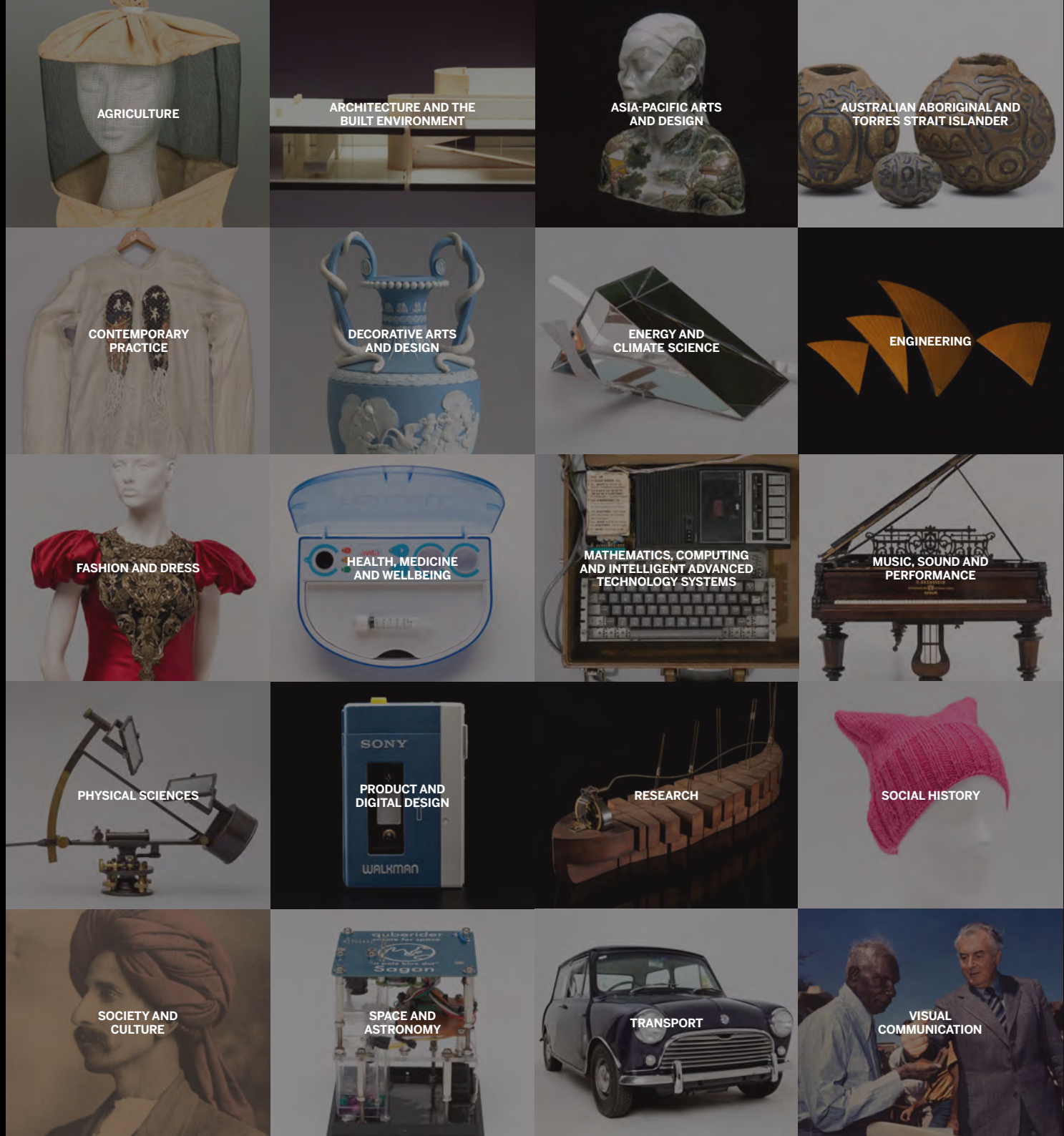
Curatorial framework

The Curatorial Framework is the synergy between the Powerhouse Collection, contemporary ideas and issues, and collaboration with community and industry.



Powerhouse Collection

The Powerhouse is custodian to over half a million objects of national and international significance spanning cultures and millennia and is considered one of the finest and most diverse collections in Australia. The Collection is constituted across 20 focus collecting areas.



Beekeeper's veil, Pender Brothers Limited, 1931; Architectural model, Laurie Short House, Glenn Murcutt, 1972-73; Bust 28, from China China series, Ah Xian, 1999; Thancoupie pots, Sphere, Guiree hunting stick and fire, Orinde (Long neck turtle), a love magic pot, Kembal and Pā o, Crocodile and Blue Tongue Lizard exchange teeth, Thancoupie [Dr Thancoupie 'Thanakupi' Gloria Fletcher-James AO], 1984; Karla Dickens, detail from Bound, mixed media, 2015; Wedgwood vase, Jasper, c.1790; Photovoltaic mini-module designed and made by the Australian Centre for Advanced Photovoltaics, UNSW, 2014-2016; Sydney Opera House, wind tunnel test, made by Ove Arup & Partners, London, UK, 1960; Evening Dress by Alexander McQueen, Angels and Demons collection, 2010; ReCell Spray-On Skin Kit, Avita Medical Ltd, Australia, 2013; Apple 1 Computer, Apple, USA, 1976; Concert grand piano, Carl Bechstein, Berlin, 1878; Heliostat, S.G.O 12 with clockwork movement, made by A. Tornaghi, Sydney, 1858-1908; The first SONY Walkman, Japan, 1979; Lawrence Hargrave, Model ship, trochoidal motion, Sydney, Australia, 1883; Pink 'Pussyhat' made by Anne Summers 2017; Peter Drew, 'Aussie' poster, Adelaide, Australia, 2016; Cuberider payload used on the International Space Station, Australia, 2015-16; Leyland Mini K, Sydney, Australia, 1970; Mervyn Bishop, Gough Whitlam and Vincent Lingiari, Northern Territory, Australia, 1975

Arts and cultural ecology

The Powerhouse Precinct will integrate into the cultural life of Sydney, building capacity, audiences and presence. It will look to establish multi-year strategic partnerships across the arts and cultural sector, community and local government to leverage investment and build capacity.

Partners may include:

Western City
- Campbelltown Arts Centre
- Joan Sutherland Performing Arts Centre
- Casula Powerhouse
- Urban Theatre Projects
- NSW Pacific Communities Council

Example: The Powerhouse Precinct, in partnership with local Aboriginal Land Councils across the Western City, the Aboriginal Housing Office and the Australian Institute of Architects, will undertake a community-led design process to rethink Aboriginal housing in suburban Australia. The program will include interdisciplinary residencies, community forums and public exhibitions alongside the creation of new housing models.

Central City
- Parramatta Riverside Theatres
- City of Parramatta Council
- Blacktown Arts Centre
- Western Sydney Parklands
- Blacktown Migrant Resource Centre

Example: The Powerhouse Precinct in partnership with Multicultural NSW, Ethnic Communities Council of NSW and Blacktown Arts Centre will undertake a three-year research and investment program to support newly arrived artisans and designers to re-establish their practice in Australia. The program will inform collection development and include masterclasses, alongside the provision of studio spaces.

Eastern City
- Sydney Festival
- Sydney Writers Festival
- Vivid Sydney
- Biennale of Sydney
- Sydney Film Festival

Example: The Powerhouse Precinct, in partnership with Technology partners and City of Parramatta Council, will be established as a new hub for Vivid Ideas, Light and Music and will include commissions, exhibitions and outdoor projections. The Powerhouse Vivid Program will have a focus on the intersection between technology and culture and host a new international Technology Summit presented in partnership with Western Sydney University.

Map data: Google, CNES/Airbus, DigitalGlobe
With simulated districts overlaysourced from *Greater Sydney Draft District Plan Map Atlas*, Greater Sydney Commission, 2016

Collaboration

By establishing a network of national and international collaborators the Powerhouse will connect and amplify the work of artists, scientists, industry and community. This network will integrate the Powerhouse, its programs and Collection into a broader Australian and international dialogue. This network will be established through programming, residency and education programs that will be delivered through ongoing partnership and co-investment with national and international partners. This will result in the creation of new investment opportunities, establish industry and employment pathways and grow the profile of Parramatta, Sydney and NSW.

A collaborative network will be established to co-produce major international exhibitions and projects, realise new commissions, build multi-year research partnerships, support reciprocal loan arrangements and foster industry exchange. The Powerlab will be leveraged to support collaboration and bring national and international collaborators to Parramatta and Sydney for extended periods.

Australian Example
The Powerhouse in partnership CSIRO Indigenous Sciences Project, National Film & Sound Archive Indigenous Connections and STEAM industry partners including, Indigital, Inditek, Indigilab, NGNY will develop a large scale exhibition that acknowledges the sophisticated environmental sciences and sustainable practices of Australia's First Peoples.

International Example
The Powerhouse Precinct, in partnership with the Pacific Islands Forum, the Pacific Island Museums Association, the Pacific Islands Climate Adaptation Science Centre (University of Hawaii) and the London Science Museum will develop a major new exhibition project that brings together scientists, artists and communities to examine the impact that climate change is having across the Pacific.

Image: Wade Lewis
For illustrative purposes only

Industry engagement

Key to the delivery of the curatorial framework is active, multi-year structured collaboration with industry. Through this collaboration, industry will inform collection development, contribute to identifying contemporary ideas and issues and support interdisciplinary problem solving.

Multi-year strategic partnerships will be established with industry leaders and companies. These partnerships will support co-investment into programming, ensure that the institution captures and documents contemporary innovation, increase investment into curatorial partnerships and establish industry archives that bring together primary research material on NSW creative industry development.

Sydney Metro railway tunnel
Source: NSW Government
For illustrative purposes only

360-degree immersive screen program

Presentation Space 6 is designed to support a diverse, immersive screen program. The space will have the capacity to project onto the ceiling, walls and floor. The program will include commissioned immersive works that focus on science, astronomy and technology, providing science education to secondary schools and providing opportunities to connect the creative industries with new technology. The screen program will present film festivals, documentaries and immersive educational experiences. The space will include a flexible seating bank, and a flexible dome-screen environment that has the capacity for multiple configurations that respond to the programs being presented.

Photo by Keghan Crossland on Unsplash
For illustrative purposes only

POWERHOUSE
GROWTH

Night time economy Central City

The Powerhouse will make a significant contribution to the development of the Central City's night-time economy. The Precinct will present a dynamic program that is as active at night as it is during the day. This will ensure that Powerhouse programs are accessible to a broad cross-section of the community, championing diversity, boosting economic growth and increasing flexible employment. Presenting an active and engaged night-time program will ensure that the community perceive the Precinct as safe and welcoming, while expanding community and civic life. This is particularly important for newly arrived residents and diverse communities where nightlife is an important part of social and community life for all ages. The Powerhouse's highly engaged community programs will be central to a strong and vibrant night-time culture in Parramatta.

Khaled Sabsabi Organized Confusion 2015
Source: Carriageworks
For illustrative purposes only

Visitor economy

The Powerhouse Precinct will be a strong contributor the growth of the NSW Visitor Economy. Over the last five years, India has been the fastest-growing inbound tourism market for NSW, placing only second to the growth in Chinese visitor expenditure. The Powerhouse will leverage connectivity with local diverse communities and develop exclusive international exhibition projects and events that will be marketed directly into Indian and Chinese tourist markets.

The Powerhouse will contribute to the growth of the NSW Visitor Economy by;

— Establishing a national and international profile as a cultural destination
— Presenting an annual international program of Australian exclusive exhibitions
— Participating and partnering in the delivery of major NSW events

Roof garden at The Met, New York
Source: twitter.com/metmuseum
For illustrative purposes only

Co-investment

The Powerhouse will build resilience and sustain growth through placing collaboration at the core of its programs and operations. This will include the development of an integrated Commercial Strategy which will include the utilisation of flexible spaces for commercial events, corporate events, conferences and major events that activate the Precinct. This self-generated revenue will be re-invested into the development and expansion of Powerhouse programs, in turn generating further revenue on the site, strengthening the cultural and civic role of the precinct.

Dior Homme, Spring/Summer 2011, Paris
Source: jonathonbeck.com
For illustrative purposes only

POWERHOUSE

CONTEXT

Aboriginal ceremony
© Aboriginal Photography by Wayne Quilliam

First Nations

The Powerhouse program is informed by the organisation's commitment to working with Australian and international partners; to making the Collection more visible and accessible; and to building long-term relationships with audiences, including reconciliation with Indigenous communities.

The Powerhouse recognises and shares the value and importance of preserving, revitalising and strengthening Australian Aboriginal and Torres Strait Islander cultures, histories and achievements. The Powerhouse has continued to demonstrate its commitment to strengthening engagement with Aboriginal and Torres Strait Islander communities and the Museum's leadership in this space is acknowledged locally, nationally and internationally.

In 2017, the Powerhouse launched the MAAS Innovate Reconciliation Action Plan (RAP) the MAAS Australian Indigenous Cultural and Intellectual Property (ICIP) Protocol, and the Elders in Residence program. This was the start of a new and ongoing commitment to working in partnership with Aboriginal and Torres Strait Islander communities to build a culture of mutual respect and exchange and to embed Indigenous perspectives in everything the Museum does.

The MAAS Australian Indigenous Cultural and Intellectual Property (ICIP) Protocol provides a ground-breaking philosophical statement of intent built around ten key principles that guide custodial handling of Indigenous cultural material, both tangible and intangible. The Protocol is directly aligned with the United Nations Declaration on the Rights of Indigenous Peoples. The ICIP Protocol also informs the content of the RAP that provides a suite of strategic actions and targets for the Museum's implementation.

The Powerhouse has also established an Aboriginal and Torres Strait Islander Consultative Group that incorporates a range of area-specific reference groups. Members of the groups are drawn from all areas of community and industry, providing high-level expertise and ensuring that Indigenous cultural perspectives can be embedded across all areas of the Museum's operations.

These groups provide a platform for the ongoing presence of Indigenous Australian voices in the institution's decision making and ensure that its programs are developed and delivered with cultural integrity, authenticity and authority.

Museum of Applied Arts and Sciences

The Museum of Applied Arts and Sciences is Australia's contemporary museum for excellence and innovation in the applied arts and sciences. Established in 1879, the Museum includes the Powerhouse Museum (Ultimo), Sydney Observatory and the Museums Discovery Centre. A new ecosystem is being formed through this project with the establishment of the Powerhouse Precinct at Parramatta; considering the relationships between the sites and how they support and enable each other is critical to the future success of the institution. It is important that the Museum is considered as a single organisation, inclusive of its Collection, facilities, stakeholders and professional staff working fluidly across the network.

Powerhouse Precinct at Parramatta

As Parramatta is home to Australia's most diverse, dynamic and growing communities, the establishment of the Powerhouse there will set an international benchmark in how cultural institutions transform to reflect the changing needs of urban contemporary communities. The Powerhouse Precinct will be central to the re-imagining and redefining of Sydney and is one of the largest cultural infrastructure projects currently being undertaken in Australia.

Aerial view of the Powerhouse Precinct site, Parramatta
Source: Mark Merton Photography

Powerhouse Museum (Ultimo)

The Museum will form a cornerstone of the planned for Creative Industries Precinct, and provide NSW creative industries with support, space, exhibitions, education and partnerships.

Sydney Observatory

Built in 1858, Sydney Observatory is one of the most significant sites in the nation's scientific history. It is recognised as an item of 'state significance' by the New South Wales Government and is heritage-listed. An elegant Italianate building with distinctive copper telescope domes situated on Observatory Hill, the highest point on which the city of Sydney was built, the building combines the practical needs of an Observatory with those of an astronomer's residence. The grounds recreate the original layout and vegetation of formal gardens cultivated in the 1880s.

Beginning as the centre of scientific research for the colony of New South wales, the Observatory has a seminal role in the history of shipping, navigation, timekeeping, meteorology and astronomy in Australia. The site was previously known as Windmill Hill, Citadel Hill, Fort Phillip and Flagstaff Hill – names that reflect how the hill was used in the 19th century. Prior to colonisation, the site was of great strategic significance to the Gadigal people of the Eora Nation and an important point for Aboriginal people to observe the night sky.

In 1982, Sydney Observatory became part of the Museum of Applied Arts and Sciences and it operates today as both a museum and public observatory, playing an important role in astronomy education and public telescope-viewing. It houses items of exceptional historical significance such as the time ball tower and transit telescope, as well as the celestial globe of 1791 and a marine chromometer used by Matthew Flinders to circumnavigate Australia in 1801.

Museums Discovery Centre

Located in Castle Hill, the Museums Discovery Centre is operated in partnership with the Australian Museum and Sydney Living Museums. It provides opportunities for communities to engage with state-significant collections and draw connections between the objects held by each Museum, through learning and public programs. The Museums Discovery Centre will expand to hold the Museum's full Collection on one site. The site will support the Museum's conservation, preparation and exhibition-making functions.

Museum of Applied Arts and Sciences Collection

The Museum's exceptional Collection of more than 500 000 objects represents human creativity and ingenuity from ancient times to the present day across diverse cultures. It is one of the most distinctive public collections in Australia and the world with its unique focus on exploring the intersection of the arts, sciences, design and technology through a contemporary, multi-disciplinary lens. Through its depth, breadth and diversity, it has enormous potential for development, research, programming and exhibitions and is uniquely placed to engage people with current ideas and issues.

Since the Collection was first established, it has represented cultural diversity, human ingenuity, innovative materials and design, and creative expression through the arts and sciences. From the exquisite carved graphite elephant made in Sri Lanka in 1875 — and one of the first objects to be acquired by the Museum, to Marc Newson's Lockheed Lounge, widely recognised as one of the most important design icons of the late 20th century, the Collection has evolved in dynamic and responsive ways to spark engagement with current practices and issues across the applied arts and sciences.

Emerging from the wave of international exhibitions that swept across the world in the late 19th century, the Collection includes significant and innovative objects that demonstrate how technology, engineering, design and science impact Australia and the world. The development of the Collection has been outward-focused and representative of national and global developments as well as representing our place in New South Wales. When the Collection was formed more than 140 years ago it celebrated industrial progress and technological achievement through objects which demonstrated the latest developments in the applied arts (including porcelain, glass, crystal, tapestries, carpets, textiles, leatherwork, books and wallpaper) and the applied sciences (including industrial and hygiene products, mineral specimens, mining and agricultural equipment, manufacturing objects, horticulture and machine technology). The fledgling Collection was influenced by a strong belief in the educational role that the arts and sciences could play in contributing to economic progress and social improvement and the Collection has evolved as intentionally accessible and democratic.

Pumice from the summit of Mount Erebus, collected during Sir Ernest Shackleton's British Antarctic Expedition, Antarctica, 1909–1911
MAAS Collection

Apple 1 Computer, Apple, USA, 1976
MAAS Collection

The Collection contains many objects that have global histories. Locomotive No 1 was built in Newcastle-on-Tyne in northern England and was the first train to run in NSW. Its arrival into Australia marked the beginning of train travel between Sydney and Parramatta in 1855. After only 22 years of service, Locomotive No 1 was retired from service as it was too heavy for the rails that were being used here and was donated to the Museum, where it continues to be one of our most iconic and treasured objects. It was acquired for its technological significance at a time when railway construction was at its height and trains were hailed as a fast, efficient and relatively inexpensive means of transporting both goods and passengers. It also has significant historical value, as it is extremely rare that any state or country has retained its first locomotive. Locomotive No 1 is a reminder of the rapid expansion of the railways across NSW in the second half of the 1800s. Wherever the railway went, towns and industries prospered. They were the lifeblood linking rural settlements and cities and shaped the development of NSW.

The Boulton & Watt steam engine, 1785 is the oldest rotative steam engine in the world and is an iconic object in the Museum's Collection, representing one of the great achievements of the Industrial Revolution. This monumental object captures the spirit of technical ingenuity and industrial advancement that characterised the innovations of the late 1700s and early 1800s. Designed by Scottish engineer, James Watt, and manufactured through the efforts of his business partner, Matthew Boulton, these engines were the first commercially successful stationary power plants that were independent of wind, water and muscle. This was the sixth engine made by the firm of Boulton & Watt and was ordered by Samuel Whitbread to replace a horse wheel at his London brewery, where it operated for 102 years. In the late 1880s the engine was brought to Australia on a sailing ship as a donation to the Collection and was restored to steaming order.

Significant milestones in Australian history are represented in other large objects such as the Catalina flying boat, which is one of the few remaining examples of this type of aircraft. Built under license by the Boeing Aircraft Company in Vancouver, Canada, in 1944, it saw service in World War II with 43 Squadron Royal Australian Air Force in northern Australia. After the war, the Catalina was used in rescue services in Australia and New Guinea. Captain PG Taylor was given permission by the Australian Government to carry out a survey flight to establish an air route between Australia and South America. Captain Taylor selected the Catalina flying boat for this flight and renamed the aircraft Frigate Bird II. In 1951 Taylor flew from Sydney to Chile, across the southern Pacific Ocean. With this historic flight Australia had pioneered every ocean route in the world except the Atlantic.

Groups of objects such as the early Australian proclamation coins collectively document the history of Australia's first currency. Visiting sailors brought a mix of foreign coins to the new colony, including guineas, guilders, ducats, rupees, johannas, mohurs and dollars which were officially proclaimed as legitimate currency. In 1813, Governor Macquarie converted 40 000 Spanish dollars into local currency by removing the centre of each dollar and creating what became known as the holey dollar.

The Museum holds some of the most important inventions, discoveries and innovations that have improved people's lives and led to social change and progress throughout the world. In the Collection are preserved specimens of the mould used to make the drug penicillin, penicillium notatum (1929–44), grown in the laboratory of Australian scientist Sir Howard Florey. This discovery drove a medical revolution in curing major bacterial diseases and ushered in the antibiotic age. The Cochlear implant or bionic ear (2003) was invented by Australian Dr Graeme Clark to restore hearing to people with severe or profound hearing loss. This major Australian innovation has had a huge global impact, allowing people to update the external parts of their hearing device (microphone, transmitter and speech processor) without surgically replacing their implanted device. Some of the most successful designs and inventions have emerged from a process of testing and experimentation and the Collection contains significant archival material including models, sketches, designs, working drawings, prototypes and correspondence. The archival Collection provides a multitude of valuable insights into the history of innovation from development to production through the design iteration process.

The physical sciences are represented through a vast collection of material focussing on physics, chemistry, mathematics, astronomy, climate science, meteorology, computing and agriculture. Spanning historical and contemporary developments, this area explores a broad set of scientific approaches and methods based on observation, measurement and experimentation through which we gain insight into our world. The perfect silicon sphere, 1994, is a recent example of how scientists are working together to develop the most accurate and precise contemporary measurement of a kilogram through an international scientific project known as the Avogadro project led by CSIRO in Australia.

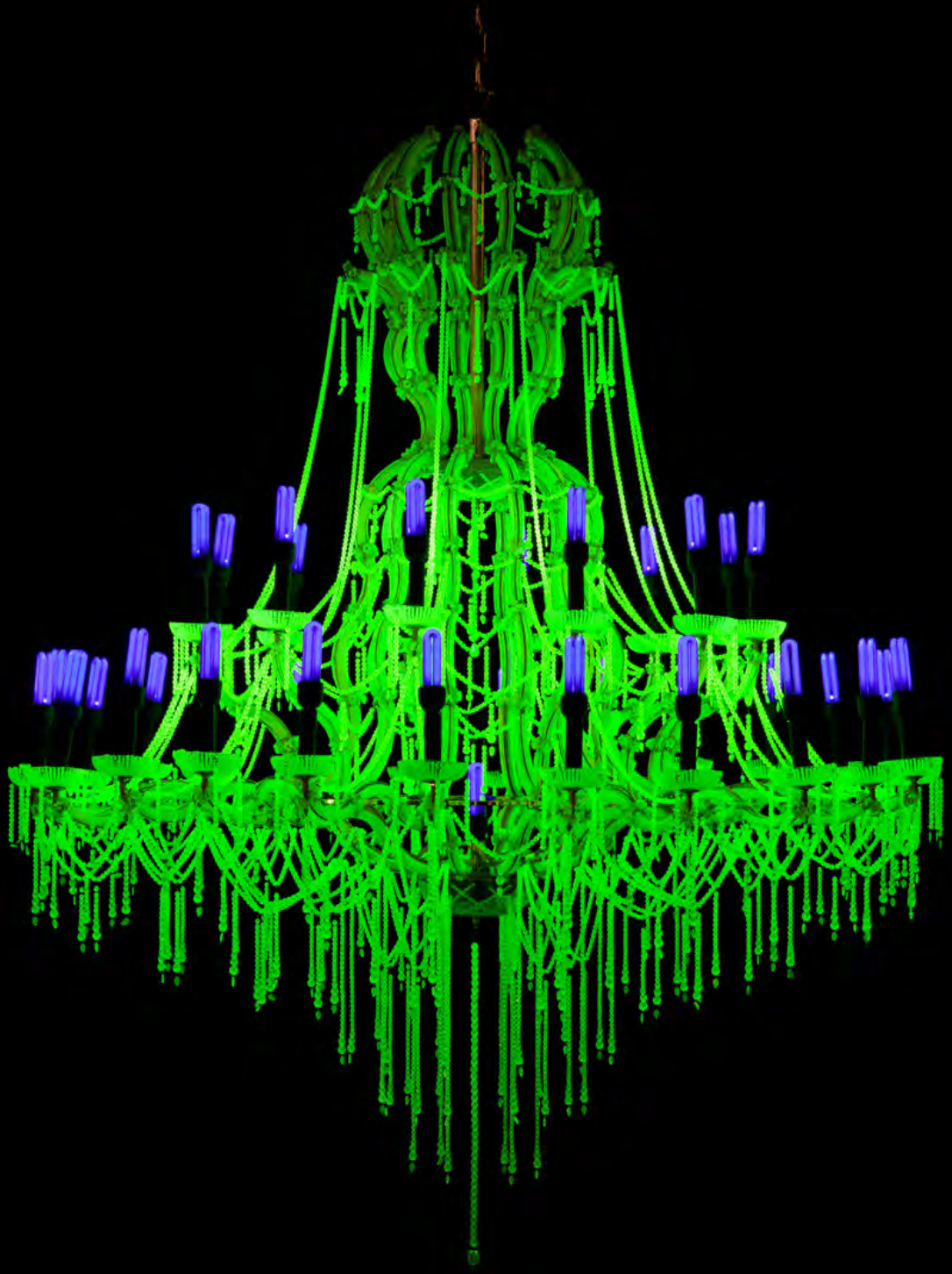
The Museum's architecture and built environment collection is notable for its documentation of the work of Australia's most influential architects. Jørn Utzon's roof geometry model of the Sydney Opera House, 1961–65, is especially elegant and effective. Initially made by Utzon to explain his thinking to engineers at Ove Arup and Partners, it was later used to inform and engage other stakeholders, including the public. Comprised of a dome, part of a sphere and mounted on a square timber backing board, the modest timber model demonstrated, with remarkable efficiency and clarity, the final geometric solution for the shape of the Opera House and how the protracted problem of the construction of the ribs required to support the great shells is resolved. The model captures Utzon's creative genius and represents the process behind his thinking as well as embodying centuries of mathematical and scientific thought.

Since its inception, the Collection has been strongly influenced by changing patterns of collecting, taste, connoisseurship, knowledge and historical significance. The rare earthenware peacock, for example, modelled in 1873 for Minton's, England's leading ceramics factory, is a striking example of Minton's innovative use of majolica glazes at the time. An important recent acquisition that highlights the way in which the Collection has been transformed over the years is the USA chandelier, 2013, by Ken and Julia Yonetani. Created in response to the 2011 Fukushima Daiichi nuclear disaster and modelled on an antique chandelier densely covered with uranium glass crystal pendants, this beautiful and provocative work critically examines current global concerns around the threat of nuclear power and references the Museum's own history through the title of the series Crystal Palace: The Great Exhibition of the Works of Industry of all Nuclear Nations.

There are many objects in the Collection which demonstrate how diverse artistic traditions have been transplanted into an Australian context. French exile Lucien Henry carved this water bottle from a coconut when he was incarcerated as a political prisoner in New Caledonia in 1878. With its four carved heads of Kanak leaders the coconut might well have been a modest and somewhat disguised memorial to the Kanak uprising. In 1879 Henry arrived in Sydney, where he practiced and encouraged interdisciplinary work between the arts and industry. He successfully argued for state involvement in art education and created a series of watercolour studies and designs inspired by Australian flora and fauna. New technologies have opened up possibilities for the Collection to be reinterpreted in the 21st century and the 3D-printed rendering of Henry's waratah decanter and protea cup demonstrate the way in which historical forms in the Collection can be reimagined through contemporary materials.

The Museum holds a diverse collection of historical and contemporary Indigenous materials including textiles, posters, photographs, prints, bark paintings, sculptures, ceramics, shellwork, jewellery, woven baskets, fire-making and stone tools, didgeridoos, spears and boomerangs. The Collection acknowledges Australian Aboriginal and Torres Strait Islander connections and continuing practices in applied arts and sciences. The value and importance of preserving, revitalising and strengthening Australian Aboriginal and Torres Strait Islander cultures, histories and achievements is recognised through the development of the Collection while also acknowledging the complexities of the past and the Museum's colonial institutional history. This group of stoneware pots was made by a highly respected ceramic artist from far north Queensland, Dr Thancoupie Gloria Fletcher James AO in 1984. The pots feature incised designs based on traditional stories from the Thaynakwith and related peoples of Cape York. Though now emulated by other artists, when Thancoupie began to make her pots the process of reducing and abstracting figures to linear symbols was new. Intricate shellwork models of the Sydney Harbour Bridge made by women from Sydney's Indigenous community of La Perouse feature prominently in the Collection. Although not a traditional Indigenous art form, shellwork has been made for gifts and souvenirs by the women of La Perouse for over a century. These sparkling and colourful shellwork models capture the distinctive design and iconic status of one of Sydney's best-loved icons.

Arts and design from the Asia-Pacific region are represented in the Collection through wood and lacquer work, ceramics, metalwork, photographs, dress and textiles, carvings in jade and ivory, ceremonial objects, arms and armour, musical instruments and contemporary fashion, art and design. Among the many significant items in this collection are the 15th century (Ming dynasty) bronze bell which was brought to Sydney from China by a NSW naval contingent during the Boxer Rebellion in 1901 and is thought to have come from a Buddhist temple in Beijing. The blue altar jar (zun) is one of only a few known surviving examples from the Chinese Qing dynasty made for use at the Temple of Heaven, an imperial religious complex in Beijing. It was used in highly important ceremonies where the Qing emperors made offerings to heaven, earth, the Sun, the Moon, and their imperial ancestors to bring about good harvests and natural harmony. The suit of Japanese samurai armour was worn by a warrior



'USA' chandelier by Julia + Ken Yonetani, made 2013
MAAS Collection

during the Edo period in the 1770s and is a powerful expression of status and power. The striking craftsmanship and design of this example is combined with its utilitarian purpose to signify aggression and strike fear into the enemy.

The Collection not only represents but also celebrates the skill and craftsmanship of the maker, as well as the power of the human imagination. This can be seen in the Museum's fashion collection of more than 30 000 garments, shoes and accessories by leading Australian and International designers. The strapless, ivory, silk and satin evening dress by Christian Dior's Spring/Summer 1957 collection, for example, features a spiralling drape that wraps closely around the body. The fitted and boned inner corset is designed to tightly grip the torso and act as a rigid scaffold over which the heavy, lustrous satin is artfully arranged. Dior often used this effect to heighten the drama of his evening wear which epitomised the dream and glamour of 20th century haute-couture.

The significant transition from objects created by the human hand to machine-made pieces produced through digital technologies is a growing area of collecting. A major recent acquisition is a dress by contemporary Dutch designer, Iris van Herpen, who became renowned for creating 3D-printed dresses including the Museum's Bubble dress from the 2016 Lucid collection based on free-form hexagonal meshwork patterns. This garment pushes aesthetic boundaries with novel materials and silhouettes and is an outstanding example of the interdisciplinary nature of van Herpen's practice and her search for poetic expression at the forefront of technology and fashion.

The Museum's reputation as a leader in collecting and presenting work at the intersection of contemporary science and design is evident in The Institute of Isolation by Lucy McRae, an Australian who has received international recognition for her work in speculative design and futures thinking. Consisting of a costume and film, the work demonstrates the growth of progressive and interdisciplinary practices including future-focussed approaches to design. The Institute of Isolation is a fictional documentary that explores the future of human evolution, or how the human body could be trained to adapt to extreme environments, such as outer space. The film examines the possibility of genetic engineering, space travel, sensory deprivation and biotechnology, and contemplates whether isolation might be used as a way to improve human resilience.

To inspire new ways of thinking about the Collection and to recognise that its relevance and significance is continuous and ever-changing, the Museum has acquired and commissioned contemporary work that engages with current issues and ideas. Clothing and badges produced to advocate for the 'Yes' vote for the same-sex marriage postal survey conducted in 2017 were acquired in recognition of the social and cultural significance of this event in contemporary Australia. The Collection also responds in creative and provocative ways to contemporary issues including difficult ones like homelessness, immigration and domestic violence. The Seat of Love and Hate by Canberra artist eX de Medici was commissioned by the Museum to challenge notions of the 'ideal' home and draws attention to the darker side of domestic life. The work juxtaposes the hyper-feminine with the hyper-masculine, creating a powerful explosion of colour through intricately detailed floral motifs alongside an assortment of weapons inspired by the Museum's Collection. This work is a striking example of the way in which the Collection can provoke questions about the world we live in and inspire action for the present and future.

The many stories contained in the Museum's Collection remain relevant and can be brought alive through new ways of experiencing objects such as musical instruments. Grand and authoritative in design, this piano was one of four pianos sent by the Berlin piano manufacturer C Bechstein for competition and promotion at the Sydney International Exhibition where it received much publicity and praise for its craftsmanship and musicality. Visitors to the Garden Palace could enjoy daily concerts that included performances on this piano. Following the acquisition of this piano by the Museum in 2014, performances using the Bechstein piano were enjoyed by many people.

Dress and 'Aero' shoes, 'Lucid' collection,
Autumn/Winter 2016-17, designed by Iris van Herpen
MAAS Collection

Installation of Boulton and Watt steam engine at Powerhouse Museum, Ultimo, 1988
Source: Museum of Applied Arts and Sciences

Key Collection items

The Museum will be designed to support an ongoing program of changing exhibitions that feature the Museum's Collection. There is an opportunity to examine the possibility of placing the Boulton and Watt engine on display within one of the circulation spaces in the Museum.

Boulton and Watt rotative steam engine (Object No. 18432)

8400 mm x 10 250 mm x 5200 mm
Estimated weight: 33,000 kg

The Boulton and Watt is the oldest rotative steam engine in the world and dates from 1785. It embodies the four innovations that, together with extended patent protection, Matthew Boulton's capital and entrepreneurship, and James Watt's engineering skill and prudent management, made Boulton and Watt Birmingham-made rotative engines the first commercially successful stationary power plants that were independent of wind, water and muscle.

James Watt's first and most significant innovation was the separate condenser. On each stroke of a Newcomen engine, the cylinder was heated (by steam) and cooled (by a jet of cold water that cooled the steam so that it condensed to water) to create a vacuum so that the atmosphere pushed the piston down. Watt decided to do the condensing in a separate vessel, ensuring that the cylinder remained hot. The separate condenser greatly increased efficiency and thus improved economy.

Watt invented the parallel motion mechanism, which (by replacing a chain) allowed the piston to push the beam up as well as pulling it down. By ensuring the piston rod was constrained to almost truly vertical movement, it allowed the cylinder to be sealed at the top. Thus, it enabled power to be doubled without increasing cylinder size. Boulton and Watt introduced the centrifugal governor to control engine speed. Adapted from mill practice, it was the first feedback device designed for use with engines.

As Boulton and Watt engines were prime movers in the Industrial Revolution, this very significant engine represents not just invention and entrepreneurship, but also wealth creation, mass consumerism, great changes in working life and a massive shift in the use of resources. Rotative steam engines sped up the Industrial Revolution, powering large mills and factories and so drawing people into cities to work. As this engine's boiler was fed with coal, it sits at the beginning of the graph showing rise in atmospheric carbon dioxide.

This was one of the earliest rotative steam engines to be made and perhaps the sixth by the firm of Boulton and Watt, having been installed in Samuel Whitbread's London brewery in 1785. In all, the company produced about 500 engines, with around 60% of them being rotative. Samuel Whitbread ordered the engine to replace a horse wheel, which harnessed the energy of a team of horses as they walked round and round below it.

Via a series of gears and wooden shafts, the engine's drive wheel turned the rollers that crushed malt, an Archimedes screw that lifted the crushed malt into a hopper, a hoist that lifted bags of malt into the building, a three-piston pump and a device for stirring the contents of a vat. There was also originally a pump working off the engine's beam that lifted water from a well in the brewery yard to a tank on the roof.

In 1887, after a long working life of 102 years, the engine was dismantled and sent by sailing ship across the world to Sydney's Technological Museum, where a new engine house was eventually built for it. In the 1920s an electric motor was installed to turn the engine's flywheel, giving visitors an idea of how it looked in motion. In 1984 the engine was dismantled again, trucked to Castle Hill and re-erected. A tall shed was built around it, and a team of experienced engineers and tradesmen, with guidance from a British steam expert, painstakingly returned it to steaming order. The engine was later dismantled again and re-erected in the Powerhouse Museum.

Catalina Flying Boat Frigate Bird II (Object No. B1495)

6400 mm x 31700 mm x 19500 mm
Weight 8520 kg

By 1951 the final ocean to be traversed for air travel was the South Pacific between Australia and South America. In this Catalina Flying Boat, named Frigate Bird II, the famous Australian pilot, P.G. Taylor, pioneered an air route by island-hopping across the Pacific from Sydney to Valparaiso. The Catalina flying boat, with its ability to land and take off in calm water, and its great endurance over long distances, was the ideal aircraft to accomplish the final aviation link around the world.

The PBY Catalina was the most successful flying boat ever produced. Designed and built by American aircraft manufacturer, Consolidated Aircraft of San Diego, California, they were first flown in March 1935 and were in production for over ten years. The PBY was the first US aircraft to carry radar and fulfilled diverse missions including torpedo-bomber, transport and glider tug. Famous were the 'Black Cat' Catalinas which, painted matt black, roamed the western Pacific from December 1942 finding Japanese ships by radar at night and rescuing stranded Allied service personnel from boats and dinghies.

The Museum's Catalina was one of 168 ordered by the RAAF, No. A24-385, for service during World War II. It was built under licence from the Boeing Aircraft of Canada Limited, Vancouver, in 1944, as a type PB2B-2 and arrived in Australia on 3 September 1945, only weeks after the Japanese surrender. Despite their vulnerability due to lack of speed, the Catalinas in RAAF service were front-line aircraft effectively taking the fight to the Japanese through long-distance mine-laying flights in enemy waterways and harbours.

After the War Catalinas were used in the South West Pacific area to bring home to Australia the ex-Prisoners of War who were well enough to fly. Following this they flew back to Australian soldiers from Borneo, New Guinea and the other islands due to be discharged from war service. On the outward flight from Australia the Catalinas carried clothing, footwear, medical supplies, fresh fruit and vegetables, and meat. These flights continued up to March 1946.

Catalinas also served a civil role in Australia during the war. A small fleet was operated by Qantas Empire Airways for two years between July 1943 and June 1945. During that period Catalinas undertook 271 ocean crossings between Ceylon (now Sri Lanka) and Perth, 3513 miles (5653 km) in radio silence, non-stop and airborne for up to 31 hours. This incident-free operation was the world's longest non-stop airline sector. Post-war, a number of Catalinas were used in commercial operations, notably by Qantas, Barrier Reef Airlines and TAA's Sunbird Service.

Civilian flying boats used by QANTAS were slow and costly to maintain and the removal of the ban on importing non-British aircraft in 1937 made the way for American land-based planes. However, flying boat services continued in the South Pacific, where landing strips were rare until the early 1970s.

A flying boat was the only choice to fly the first uncharted air route between Sydney and Valparaiso, Chile, and a Catalina was Captain Taylor's preferred aircraft. The one he selected had seen service in several air-sea rescue squadrons and in the New Guinea administration just after the war. He renamed it Frigate Bird II and had the appropriate civil registration VH-ASA (Australia-South America) applied. Taylor was an extremely experienced Catalina pilot and had also made several similar pioneering flights. He won fame in 1935 as the crew member on Sir Charles Kingsford Smith's cross-Tasman flight in the Southern Cross, when he transferred oil from the disabled engine to the other one by climbing out of the cabin and balancing on the wing struts in mid-flight.

The flight to South America, which left Sydney's Rose Bay flying boat base on 13 March 1951, had the smallest workable crew, comprising Captain G.H. 'Harry' Purvis (first officer), E D 'Blue' L'Huillier (engineer), Angus Allison (radio officer and bowman) and Sydney Morning Herald journalist Jack Percival (executive officer and official correspondent). Eight fuel stops were made, the last being at Easter Island. The fact that there was no sheltered area of water for take-off there was a serious hazard. The crew suffered through a storm, a freak swell broke all three of its anchor ropes, and Taylor was washed overboard. Finally, take-off was executed with the assistance of the JATO (jet-assisted take-off) rockets that had been fitted to the hull by the RAAF. After 8451 miles (13 600 km) the flight was a success, and on its return a proud Commonwealth Government presented Frigate Bird II to Taylor in recognition of his aviation achievements.

In 1961 Taylor presented the Catalina to the Museum and in 1985 it was restored by Hawker Pacific at Bankstown Airport. Frigate Bird II is one of the few remaining 168 RAAF Catalinas to survive; with its historic flight, Australians had pioneered every ocean air route in the world, except across the Atlantic.

Locomotive No.1 (Object No.7949)

Height 4300mm x width 2300mm x length 34500mm
Approximate weight estimated: 40,000 kg

Locomotive No.1 hauled the first passenger train in New South Wales on the line between Sydney and Parramatta in 1855. It was instrumental in the construction and operation of the colony's first steam railway and hauled a special service from Sydney Station to Long Cove viaduct (near the site of Lewisham) on 28 May 1855.This iconic locomotive was one of the earliest objects acquired into the Museum's Collection in 1884 and is one of the most significant relating to New South Wales.

Railway construction in New South Wales was driven by wealthy squatters keen to transport their valuable wool clip to Sydney, where it could be taken by ship to the English textile mills, yet it was financed by private investors and supporters in Sydney influenced by the 'railway mania' in Britain of the 1830s and 1840s.

The locomotive was designed by James Edward McConnell, Locomotive Superintendent of the southern portion of the London and North-Western Railway and built by Robert Stephenson and Co. of Newcastle-on-Tyne, one of the foremost locomotive builders in the world at that time. Robert Stephenson was a major supplier of locomotives to infant railway systems throughout Britain and also shipped them to Europe and the Americas. In fact, Locomotive No 1 was erected in the same workshop that produced the world's first successful and reliable steam locomotive, known as the Rocket, in 1829. Locomotive No 1 is also one of the oldest Robert Stephenson–built locomotives to survive outside Britain, after John Bull in the Smithsonian Institute in Washington, DC, and L'Aigle at the Cité due Train (Railway Museum) in France. Locomotive No 1 is also significant in British railway history as it is a very rare surviving McConnell-designed goods express locomotive of the early 1850s. It is believed to be the only example of its type in the world.

For various reasons our first four locomotives worked for only a short time in New South Wales, mainly because they were too heavy for the local infrastructure. Locomotive No 1 only operated for 22 years and was retired from service in 1877, still a relatively modern engine. Its acquisition by the Museum, then known as the Technological, Industrial and Sanitary Museum, at the peak of colonial railway construction, was more for its technological rather than historical significance. In the 1880s technological museums were at the vanguard of new museum development around the world. Even so, it is extremely rare for any state or country to retain its first locomotive as most were scrapped.

From 1893 the locomotive was stored in a purpose-built engine house at the rear of the Museum's former premises in Harris Street, Ultimo, for 90 years. However, it was considered such an icon of progress for the state that it was removed on four special occasions in 1905, 1916, 1938 and 1955 and displayed around the city.

Integral to the display of Locomotive No 1 is its tender (where coal and water were carried), which didn't come with the engine but was acquired in 1965, and examples of first, second, and third-class carriages. These are rare and early survivors of the original carriages supplied by Joseph Wright & Sons of Saltley, near Birmingham, in the 1850s and 1860s. They had been greatly modified by the railways for almost a century before being rebuilt for the Museum by railway apprentices between 1967 and 1980.

Locomotive No. 1, on display for 75th Anniversary of Railways, Martin Place, Sydney 1930. Collection Australian Railway Historical Society (ARHS). Source: University of Newcastle

Governance: Museum of Applied Arts and Sciences Act 1945

Established as part of the 19th century agenda for the advancement of knowledge and social reform the Museum has operated under the authority of its own Act of Parliament, The Museum of Applied Arts and Sciences Act since 1945. The Museum is a statutory body with the Department of Premier and Cabinet within the NSW Government. The Act provides for constitution of a body corporate of nine Trustees who, subject to the control and direction of the Minister, exercise the powers conferred by the Act.

Under the Act the Trustees exercise the following functions:

1. the control and management of the Museum,
2. the maintenance and administration of the Museum in such manner as will effectively minister to the needs and demands of the community in any or all branches of applied science and art and the development of industry by:
   - i. the display of selected objects arranged to illustrate the industrial advance of civilisation and the development of inventions and manufactures,
   - ii. the promotion of craftsmanship and artistic taste by illustrating the history and development of the applied arts,
   - iii. lectures, broadcasts, films, publications and other educational means,
   - iv. scientific research, or
   - v. any other means necessary or desirable for the development of the natural resources and manufacturing industries of New South Wales.

Cochlear Implant and Behind the Ear Speech Processor, Cochlear Ltd, Sydney, Australia, 2003
MAAS Collection

POWERHOUSE

POLICY ALIGNMENT

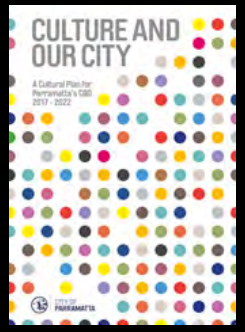
Policy alignment

The Powerhouse will deliver on key government priorities and polices. Realising the Powerhouse vision will contribute to achieving these priorities for Greater Sydney and NSW, including:

- Delivering on the aspirations of the City of Parramatta Council by taking a leadership role in the creation of a major arts and cultural precinct for a dynamic and multicultural city.
- Grow Aboriginal employment and economic empowerment by providing the spaces needed to create and promote creative entrepreneurship.
- Develop well-designed cultural infrastructure and cultural precincts that create great places that bring people together.
- Establish a precinct connected by transport, education, health and cultural links and delivering an expressive and utilitarian space for everyone.

Aerial view of Parramatta looking towards Sydney CBD
Source: Mark Merton Photography

Key policies

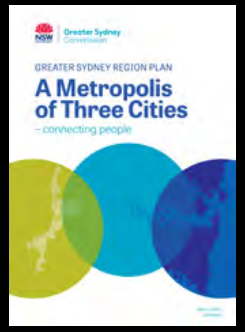


Parramatta City Council – A Cultural Plan for Parramatta's CBD 2017–2022

Local government's intimate understanding of their communities' needs, and aspirations mean that they have a critical role in planning for arts and culture to thrive across New South Wales. Cultural plans like the City of Parramatta's provide the framework through which local identities are celebrated and vibrant communities are supported.

Central to the vision for an activated global city are the people — the artists, creative thinkers, communities, volunteers, participants, players, producers, creative enthusiasts and audiences. The plan champions the role that culture plays in city building. Culture is key to celebrating and promoting a changing City. It is a driving force of vibrancy, a contributor to prosperity and the agent for showcasing and celebrating Parramatta's experiences and stories.

The plan considers the relocation of the Powerhouse as a catalyst for increased opportunities and enhanced arts and culture and supports the Powerhouse Precinct on the Parramatta riverbank. The Plan identifies the Civic Link as a vibrant new public space in the heart of the City. The Civic Link is planned to extend through the Powerhouse Precinct site to the river's edge. Extending over four city blocks, the Civic Link is a pedestrian public space with a cultural spine that connects Parramatta CBD's civic and commercial district with riverfront spaces and foreshore.



Greater Sydney Commission: A Metropolis of Three Cities (2018)

A Metropolis of Three Cities is driving a reengineering of Greater Sydney, with major new developments and infrastructure either underway or planned, which will change the size, shape and connectivity of the region and transform it into a poly-centric city. This includes a new airport, major infrastructure projects, expansion of universities, planning for emerging health and education innovation precincts. The Greater Sydney Commission's 'three cities' vision seeks to accommodate growth through development of three major centres of gravity, based on the established Eastern Harbour City, the developing Central River City, and emerging Western Parkland City (including the new Western Sydney Airport). The Central River City is where the Powerhouse Precinct will be located.

A Metropolis of Three Cities recognises the important role that both professional arts and everyday creativity have in developing liveability, and it advocates facilitating opportunities for creative and artistic expression and participation, wherever feasible, with a minimum of regulatory burden. It also advocates supporting arts enterprises, facilities and creative industries, increasing opportunities for interim and temporary uses of spaces, and allowing for development of the night-time economy.

The Powerhouse Precinct is noted in the Plan as part of a key element of the Central River City. Cultural infrastructure supports growth and increased urban amenity. The strategic focus for the Central River City is developing new cultural precincts, including the Powerhouse Precinct at Parramatta.

Infrastructure NSW's Cultural Infrastructure Strategy: Advice to the NSW Government (2016) and The Cultural Infrastructure Plan 2025 (2019)

In 2019, the State Government released its first-ever Cultural Infrastructure Plan. The Plan includes a set of strategic and geographic priorities which will guide cultural infrastructure development and investment through to 2025 and beyond. The Plan represents a bold, forward looking approach to cultural infrastructure planning and investment across New South Wales. Its priorities are based on a broad understanding of what cultural infrastructure is and how it can contribute to a wide range of policy objectives, including increased urban amenity, personal and community health and wellbeing, regional economic development, and making Greater Sydney and New South Wales the cultural gateway to Australia.

The Plan is premised on the understanding that culture, cultural infrastructure and cultural precincts are key to creating great places that bring people together – great places to live, work, visit and do business. The Powerhouse Precinct in Parramatta is a major Government commitment. The Powerhouse Precinct will deliver upon these aspirations particularly in relation to a well-planned creative Precinct servicing a growing city, opportunities for the community to engage and participate in the Precinct, Powerlab and Presentations Spaces, and the creative sector gaining access to space to develop ideas and new work.

NSW Government Ochre Plan (2013)

The NSW Government Ochre Plan aims to support Aboriginal people to actively and fully participate in social, economic and cultural life. There are opportunities to work with Aboriginal artists and existing networks to be identified and more dedicated spaces for Aboriginal culture in metropolitan and regional New South Wales. This includes adaptive re use and integration into major development and urban renewal projects. Cultural infrastructure can also support meaningful employment and economic empowerment by providing the spaces needed to create and promote Aboriginal creative entrepreneurship. Research shows a continuing demand for authentic Aboriginal art, culture and tourism experiences, both traditional and contemporary.

The Powerhouse Precinct program of exhibitions, performances and specific Indigenous programs will focus on Indigenous employment and professional development opportunities and will deliver key outcomes in the Ochre Plan including;

- Provision of opportunity hubs that give school students pathways to real jobs
- Support of connected communities through changing the way educational services are delivered
- Ensure local decision making to increase the capacity of Aboriginal communities and non-government organisations to make decisions about local service delivery.

A changing city

The Powerhouse Precinct will be an active contributor to a region undergoing unprecedented growth. Western Sydney is home to 1.9 million people, 35% of whom were born overseas. The population is projected to reach 3 million by 2036 and to absorb two-thirds of the population growth in the Sydney region – making the region the fastest growing urban population in Australia.

Map data: Google, CNES/Airbus, DigitalGlobe
With simulated districts and urban area overlay sourced from *Greater Sydney Draft District Plan Map Atlas*, Greater Sydney Commission, 2016 and *Greater Sydney Regional Plan: A Metropolis of Three Cities*, Greater Sydney Commission 2018

PART 2

DESIGN BRIEF

Part 2 provides the details of the design brief for the base build for the Powerhouse Precinct at Parramatta, which has been developed in response to the vision. It includes an outline of the key design considerations, an area schedule, preliminary design competition test fit and area descriptions.

Part 2 should be read in conjunction with the Technical Appendices and the Urban Design Guidelines.

KEY DESIGN CONSIDERATIONS

The following section outlines the key functional and spatial descriptions for the Powerhouse Precinct Parramatta. The focus of Stage 2 of the design competition is to develop a concept design meeting the following requirements:

Operationally efficient
Ease of operation to support high levels of production and programming alongside concurrent visitation.

Porous
A Precinct that has multiple entry points and can be approached and connected from all sides. The intention is visitors and local communities walk through the Precinct, not around it.

Powerhouse Precinct Program
Support the delivery of a dynamic and active precinct program that includes multiple concurrent activities, including the creation and presentation of exhibitions featuring the Museum's Collection.

Connected
Embedded in the City, connected through a fine grain to other destinations and transport nodes.

Design excellence
Setting a new benchmark for cultural infrastructure design and place making.

Heritage
Sympathetic to the local heritage of the site.

Accessibility
Design an inclusive place that supports diverse abilities.

Views
Consideration of how the Precinct could be viewed from all vantage points: beside, below and above.

Venue management
Consideration should be given to how multiple food and beverage offerings will contribute to creating a vibrant and active precinct.

Acoustics
Ensure acoustic separation between internal spaces to support multiple programs and activities. Ensure the 24/7 nature of the precinct, including major events, does not impact on neighbours.

Site access and egress
The Precinct requires safe and easy access to and from the site for vehicles, pedestrians and cyclists. Clear demarcation between pedestrian and vehicular access points will be required.

Security
Meet global best practice in terms of security design, demonstrating flexibility in varying operating modes that are integrated into the public domain.

Fire and life safety
Consider emergency egress and fire and life safety for large populations within a vertical building. The design should be capable of achieving Building Code of Australia Deemed to Satisfy provisions or performance-based solutions.

Design life
The Museum will be designed and constructed for an expected building life of one hundred (100) years.

Sustainability
The Precinct will promote sustainable principles maximising environmental opportunities through energy conservation, reduction of waste, water usage reduction and materials sourced from sustainable sources. The design should be centred on an energy efficient, thermally responsive building, maximising energy and efficiency and promoting passive solutions where possible.

Environmental controls
Consider the environmental controls required to present the Museum Collection and support international and national loans. Plan for changes in climate, particularly in relation to the number of hot days.

AREA SCHEDULE

The following area schedule is provided as a guide for the provision of appropriately scaled spaces for the delivery of Powerhouse Precinct Programs.

A key feature of the Powerhouse Precinct at Parramatta is a minimum of 18,000 square metres of exhibition and public spaces – up from the current site at Ultimo of 15,708 square metres.

This will include presentation spaces, concierge, learning labs, digital studios, education and community spaces. This is in line with the NSW Government's commitment for a new and expanded world class Powerhouse Museum at Parramatta as announced in April 2018.

The functional elements have been sized and identified as per the area schedule shown in Table 1. It is important to note that the Presentation Spaces as detailed within this brief have a level of consistency in size and proportion. No minimum or maximum size has been attributed to the public realm.

Table 1 – Area Schedule

DESCRIPTION	AREA INTERNAL (sqm)
Arrivals	
Concierge	450
Public Presentation Spaces Minimum total is 15,000sqm. This must include a minimum of 6 Presentation Spaces.	15,000
Powerlab (inclusive of Staff Offices and First Nations Hub)	
Powerhouse Residencies 40 x 35sqm Studios 20 x 50sqm One-Bedroom Studios	7,780
Co-working Spaces and Staff Offices To accommodate 200 people	
Powerlab Kitchen	
Multi-function Spaces	
Digital Studio	
Ancillary Spaces* (Front of House)	
Ancillary Spaces** (Back of House)	
Retail food and beverage	
Food and Beverage	1,600 minimum
Ancillary Spaces** (Back of House)	

Note
The areas as listed are gross building areas (GBA), inclusive of allowances for circulation, internal structure and partitions, as well as any localised plant. As defined below:

* Ancillary Spaces (Front of House) include, where relevant: Circulation Spaces, Fire Stairs, Airlocks, Amenities

** Ancillary Spaces (Back of House) include, where relevant: Loading, Storage, Amenities, Workshops, Collection Lifts, Passenger and Goods Lifts, Plant Areas, Communications Rooms and Risers, Waste-Handling Areas

PRELIMINARY TEST FIT
The Preliminary Test Fit (attached) has been prepared to demonstrate a potential approach to meeting the vision for the Powerhouse Precinct. It has also assisted in the development of the brief through demonstrating adjacency of uses, scale of spaces, compliance requirements and an ability to meet the project budget.

It is expected that all competitors apply their own innovative and creative thinking in the development of their design in response to this brief.

Technical Advisors
The following technical advisors have been engaged on the project to date in the preparation of the Preliminary Test Fit and Technical Appendices. These advisors all have probity plans in place relating to their engagement.

Architect: SJB
Urban Design Guidelines: SJB
Structural Engineering: Taylor Thomson Whitting (TTW)
Civil and Flood Engineering: Taylor Thomson Whitting (TTW)
Traffic: Taylor Thomson Whitting (TTW)
Services Engineering (mechanical, electrical, lighting): Steensen Varming
Vertical Transportation: Steensen Varming
Ecologically Sustainable Design advice: Steensen Varming
Fire Services Engineer: Warren Smith and Partners
Cost Planner/Quantity Surveyor: Rider Levett Bucknall (RLB)
Heritage Advice: Curio Projects
Planning Advice: GTK Consulting
Acoustic: Charcoal Blue
Retail Strategy: Brain & Poulter
Probity Advisor: O'Connor Marsden
Legal Advice: Allens
Project Management: Root Partnerships

AREA DESCRIPTIONS

1. PUBLIC DOMAIN
The Powerhouse Precinct is defined by multiple interfaces with public open spaces and public roads. These public spaces range from existing riverfront parkland to urban streets. A rich Public Domain response is crucial to the success of the Museum and its integration with its physical and cultural context.

A number of documents have been published over time to provide guidance around the public realm, both in and around the site. It is acknowledged that aspirations framed within these documents are sometimes contradictory and, in some cases, preceded the decision of Council to sell the land to the NSW Government. The purpose of this section is to capture the key objectives of the various documents, while allowing design teams scope to interpret them and propose innovative and creative outcomes.

Further information is provided within the Urban Design Guidelines (Part 3). Please also refer to Parramatta Council's River City Strategy Design and Activation Plan 2015 and Civic Link Framework Plan 2017.

All public spaces associated with the Museum and surrounds shall be open to all, welcoming to diverse cultures and accessible for people of all abilities. The design of the Public Domain should support engagement across the generations and contribute positively to the local environment. The Public Domain should enhance not only social and cultural but also environmental amenity.

The public spaces associated with the Museum include a variety of types and locations and will, in relationship with the Museum buildings, support a range of possible uses, varying according to specific events, time of day and time of year.

Configurations may include:
- An open space on the southern bank between the Museum and the river capable of gatherings up to 5,000 people, a combination of covered and open to sky, affording multiple configurations for connecting and interacting with the ground plane of the precinct.
- A combined outdoor space (which includes the open space) allowing large gatherings up to 10,000 people, which may incorporate land on northern bank, possible footbridge, riverfront strip parks/walkways and Museum forecourt/covered areas. Will join up with Civic Link to south and may interface with existing pedestrian pathways.

- **The Civic Link**: will form the northernmost segment of a continuous landscaped, open space link to Parramatta Square to the south. Civic Link, Block 4 – River Link section, aligns with Horwood Place to the south and will form a civic scale pedestrian connection to the riverbank to the north. It will exhibit the following qualities and characteristics, in line with Council's Framework: Green, Cultural, Connected, Fine Grain (refer to Council's Civic Link Framework Plan 2017 for more detail around aims and objectives for Civic Link)
- To enable the best Museum outcome and support the Civic Link we are requesting that all submissions consider the removal of Willow Grove, should it be required.
- **The Powerline**: an open space along the riverfront that supports connectivity. The Powerline should deliver the Government commitment to a foot link bridge under the Heads of Agreement with the City of Parramatta.

The Powerline should:
- Relate to the Museum and the riverfront and provide access to both
- Provide weather protection where appropriate
- Support a variety of recreational activities
- Be accessible to people of all abilities
- Relate to commercial activities in the base of neighbouring buildings to the west of the Museum

Teams are welcome to explore alternative solutions to providing public green space, noting the service vehicles easement adjacent to the Meriton development must be maintained – this may require that the Powerline adjusts its path or height to accommodate vehicle movements. Any proposed footbridge between southern and northern banks may land on the north side anywhere between the Lennox and Barry Wilde Bridges.

Please note that Lennox Bridge, to the west, is listed on the State Heritage Register and is regarded as a significant example of early Colonial engineering works in the state. As such, consideration should be given to maintaining the visibility of Lennox Bridge from the Powerhouse Precinct.

In general, the Public Domain will:
- Be capable of hosting events of up to 10,000 people through use of all public parts of the ground plane, from River Foreshore to Philip Street and including, if necessary, some ground level spaces of the Museum.
- Provide opportunities for temporary food and beverage installations and entertainment stages.
- Support the needs of communities across generations and with a range of cultural and social backgrounds.
- Interact with the Museum and adjacent streets and open spaces to provide a rich, multifunctional addition to the City of Parramatta, greater Sydney and NSW.

1.1 Public Art
The Museum will deliver heritage interpretation and cultural experiences through their ongoing programs. Permanent public art will not be required.

2. CONCIERGE
Area Requirement – 450sqm (min)

The Concierge area should act as the central hub for all activities within the Precinct and be the first port of call for all visitors. It should centralise activities and will include transactions, customer service, information and directions, cloaking, group orientation and event entry, and act as the key meeting point within the Precinct.

The concierge should:
- Include flexible security or screening function as required.
- Form the main point through which all visitors enter the Powerhouse.
- Be highly porous as a space, with high levels of visual and physical connectivity, for wayfinding and clarity of circulation.
- Provide reasonable areas of shelter along adjacent external spaces for large crowds of people who are queued for entry and multiple large school groups.
- Be flexible to cater to a range of varied and concurrent events and interactions.
- Act as the central customer service area for Powerlab Residents.
- Provide flexible space for cloaking that can accommodate high volumes of visitors alongside single-event guests.

The Concierge will provide an integrated high-level customer-focussed solution for the following functions and activities within the one space:
2.1 Customer Service
2.2 Ticket Sales
2.3 Cloaking
2.4 Group Arrivals

2.1 Customer Service
All visitors to the Precinct will be welcomed through the central Concierge space by Powerhouse staff. The Concierge space will support personalised high-level customer service. The intention is that customer service style is fluid, with a people-first approach that does not require infrastructure such as a desk. Customer Service Staff will provide Precinct program information, sell tickets, orientate visitors, assist with cloaking, manage group arrivals, check in Powerlab Residents and register community and education groups.

2.2 Ticket Sales
The concept is that customer service staff will have the ability to sell tickets. This will not require significant infrastructure; however, they will require the capacity to print tickets. The Precinct will operate as a cashless area.

2.3 Cloaking
Cloaking should be located within a convenient area within the Concierge. The cloaking space should be designed to accommodate daily activity levels however, temporary cloaking will be provided in different areas of the Precinct depending on the needs of each event. Cloaking will require security-camera surveillance, as well as power and data services. Cloaking should also be able to house prams and schoolbags for high visitor numbers.

2.4 Group Arrivals
Group arrivals will occur within the Concierge space as an integrated component of all arrivals. The Customer Service Staff will manage group arrival to the same standard as all visitors to the Precinct.

3. PRESENTATION SPACES

The Presentation Spaces will be flexible and column-free to support a diverse and changing program of exhibitions and events that will include the Museum's Collection, commissioned artworks, large-scale digital displays, live performance, conference and commercial events.

Key to the Presentation Spaces is their flexibility. They need to support multiple uses and high turnover of activity.

The Presentation Spaces are identified as separate spaces. Design Teams may explore opportunities to link spaces to allow different scales of operation. Design Teams are encouraged to explore the number, size and scale of each space, however noting that a minimum of 15,000 square metres and minimum of six spaces are required.

Access between the Concierge and Presentation Spaces should rely on intuitive wayfinding rather than overlays of signage.

The design of Presentation Spaces should be minimal in finishes and detail with an industrial feel. The space should maximise the impact of the objects and minimise the effect of the space. Presentation Spaces 1 to 6 will be black boxes that are acoustically and light isolated.

Table 3 outlines the operational performance requirements of each of the Presentation Spaces to ensure that they have the capacity to deliver Powerhouse Precinct Programs.

Table 3 – Operational and Performance Requirements

Presentation Space	Floor Design Live Load (KPA)	Min Span (m)	Ceiling Design Load (metric tonnes)	Conditioning Standard	Logistics – Maximum Object sizing
P #1	20	35	10 tonnes	A	Capacity for direct load of large-scale objects in and out
P #2	20	35	10 tonnes	A	Capacity for direct load of large-scale objects in and out
P #3	10	35	10 tonnes	AA	Goods lift (6x3)
P #4	10	35	10 tonnes	AA	Access Hoist or equivalent for load in and out of large-scale objects
P #5	10	35	10 tonnes	AA	Goods lift (6x3)
P #6	10	35	10 tonnes	A*	Goods lift (6x3)
P #7	5	20	N/A	A	Goods lift (6x3)

* Space to have capacity for upgrade to AA Conditioning Standard.

4. ENVIRONMENT CONTROL SYSTEM

The Environmental Control System is a mechanical solution for achieving and maintaining the stable environmental conditions required for all of the interior spaces of the Powerhouse Precinct. The Environmental Control System for the performance/presentation spaces must be able to be adjusted to achieve desired conditions in response to audience numbers, space use, level of lighting and other introduced elements that impact temperature and humidity levels. Further, the building must be able to be operated in ventilation mode only in specific spaces as required. The Environmental Control System must be able to achieve optimal conditions within class specifications and have the capacity to operate at variable control points within set range as required.

Exhibitions and Collection spaces require more controlled security and environmental parameters than other spaces. A series of environmental classes have been devised to define appropriate levels of control for each space (see Table 4).

All Presentation Spaces must:
- Be clear-span, column-free spaces.
- The ratio in plan should consider the multiple uses of these spaces– particularly in the case of the spaces identified for performance. To maximise flexibility excessively narrow and square spaces were avoided in the test fit.
- Include finishes that are robust and neutral to provide the ability to create multiple environments to support the function.
- The circulation spaces of the presentation spaces must also be robust and neutral.
- Be black boxes that are light and acoustically isolated.
- Have services (electricity, power, data) provided within the floor and ceiling that do not inhibit use of the space.
- Provide power and data within the walls to suit a range of uses.
- Include ceiling rigging points, with an 8m grid preferred.
- Have walls capable of having attachments.
- Have walls designed to read as part of the architecture and not as part of any exhibit or event (they will be themed for this purpose).
- Have floor finishes that are robust (to allow a truck or forklift to drive over)
- Have minimal and consistent exposed detailing for ceiling services.
- Have a ceiling with house lighting with the capacity for temporary show lighting (for exhibitions, events and performances)
- Contain a front-of-house circulation foyer that also forms an acoustic, light and climate lock.
- Be acoustically separated from rest of the precinct and each other.
- Contain sufficient back-of-house space to be flexible for a range of uses, including catering, dressing room, technical preparation or Collection management.
- Include clearance and access platforms as required in the ceiling spaces for lighting and plantroom access.
- Be able to be isolated for the installation and removal of exhibition and events.
- Have all spaces on the ground plane able to support direct-loading truck access.
- Include access platforms in the ceiling spaces for lighting and technical production.
- Have the ability to fix into the floor – integrated into an existing grid system
- It is anticipated that a fire engineered Performance Solution is likely to be required. Consideration should be given at an early stage as to how fire spread can be limited through compartmentation and other methods.

Table 4 – Environmental Control Classes

Class	Description	Examples (see Table 3 for allocation)
AA	International Museum Standard Environmental Conditions. Humidity and Temperature controlled, with very minimal variability. Able to operate at variable control points within set range. High Security overlay, with full low-light PTZ CCTV, movement sensor, alarm coverage. BCA compliant fire systems and VESDA fire detection.	Presentation Spaces as nominated
A	Midlevel controls for transition spaces and selected presentation spaces. Humidity and Temperature controlled, within a broader variability range. Able to operate at variable control points within set range. High Security overlay, with full low-light PTZ CCTV, movement sensor, alarm coverage. BCA compliant fire systems and VESDA fire detection.	— Concierge & Circulation Spaces — Presentation Spaces as nominated — Powerlab, Education Spaces and Studios
H	Spaces designed for human habitation, but not for Collection display or storage. Access card controls. CCTV on primary access points only, with additional CCTV coverage in Retail and Hospitality spaces. BCA compliant fire systems.	— Offices — Workshop and Preparation Spaces — Retail and Hospitality Spaces

4.1 Presentation Space #1
Presentation Space #1 may have the capacity to link and integrate with events in the public realm. The transition between internal and external should be as seamless as possible and may include operable elements.

Events that could be presented in Presentation Space #1 include live performances and concerts, exhibitions in line with the goals of the institution and it's collection, focusing on science and technology, major and civic events, conferences and commercial programs.

4.2 Presentation Space #2
Presentation Space #2 should accommodate the same uses as Presentation Space #1, however it will also be used to display very large objects from the Collection, which necessitates its higher floor-load rating compared to other Presentation Spaces.

4.3 Presentation Spaces #3, #4 and #5
These spaces should be highly flexible and adaptable, to cater for a range of layouts and media, and function appropriately to display, in rotation, the Collection of the Museum as well as international collections and exhibitions. These spaces will incorporate the highest level of climatic control (rated as AA) suitable for the display of the Museum's Collection and the loan of international collection objects and exhibitions.

The floor height and level of all these spaces should be positioned to above the PMF (Probable Maximum Flood level, as defined in the technical appendices) to ensure the security of the Collection.

4.4 Presentation Space #6
This space should be the most flexible, as it will accommodate immersive screen experiences, performance, concerts and conferences to the highest level. The space will have the capacity to project onto the ceiling, walls and floor.

The space will include a flexible seating bank for a minimum of 800 people in a variety of configurations as appropriate to the scale of the space. It will also include a flexible immersive screen environment that has the capacity to have multiple configurations that respond to the science and technology programs that will be presented. This will enhance learning opportunities and engagement with the Museum's diverse Collection.

Performances, conferences and events will use multiple types of seating and staging arrangements and the acoustics of the space must be able to accommodate this.

4.5 Presentation Space #7
The focus for Presentation Space #7 will be to support commercial activity including conferences, corporate dinners and launches. Food and beverage servicing to this space will be critical for its operation. It will also have the ability to support the Museum's programs and exhibitions. The key difference is its adjacency to an external space that should be positioned to afford views across Parramatta.

4.6 Presentation Space Circulation
Circulation space may be designed to also function as a resting point or meeting space. It should form an amenity offering for the Precinct and could be used for part of an event or part of the public domain (if provided on the ground plane). It should focus on providing views within and external to the precinct.

The Presentation Spaces must be provided with Circulation Space that:
- Is robust with consistency of floor and wall services.
- Provides ease of access to the Presentation Space from the Concierge.
- Provides for an appropriate amount of pre-function use
- Is intuitive in terms of wayfinding
- Provides a flexible layout to accommodate rest points, as well as places to dwell, meet, use wi-fi or to enjoy the view.
- Utilise natural light.
- The opportunity to integrate and consolidate circulation spaces into a centralised location should be explored to maximised efficiency.

4.7 Acoustic and Light Separation
Consideration should be given to providing an appropriate transition space between the Presentation Space Circulation and the Presentation Spaces. This will function as an acoustic and light seal between the spaces.

5. POWERLAB
The Powerlab is comprised of the following components:
- 60 studio and one-bedroom apartments ('Powerlab Residences')
- Co-working Spaces and Staff Offices
- Laundry
- Powerlab Kitchen
- Multi-function Spaces
- Digital Studio

The Powerlab will bring together Powerhouse Staff, researchers, artists in residence, partners, students and the community into one collaborative working space. The Powerlab will become a place for these user groups to research, teach, work with communities and assist in delivering programs in the Precinct or throughout the city.

The Powerlab will enable partnerships with focus areas unique to the Powerhouse and encourage collaboration with others, including industry and Universities. It will be a facility that can be used seven days a week with 24-hour access, with a security hierarchy that aligns to safe and accessible usage.

The Powerlab will comprise of the following spaces:

5.1. Powerhouse Residencies
The Powerlab will include 60 Powerlab Residencies supporting the Powerhouse Precinct residency program. These residencies will be supported through access to studio and working spaces and will be integrated into the broader working life and aspirations of the Precinct and its communities. It will be a place where artists, researchers and scientists from across Australia and around the world come to collaborate, create, research and live. The residencies will be for between 3–12 months. An example of a residency may be: an international scientist is invited by the Powerhouse and the Westmead Research Institute to live and work at the Powerhouse for 3 months. During that time they would collaborate with other scientists at the Institute as well as delivering secondary schools workshops and a public lecture at the Powerhouse. The residency would be co-funded with the Institute.

Residential Apartments may:
- Allow Residents to be self-sufficient in terms of cooking and cleaning requirements.
- Contain a minimum of 60 residential apartments, with the mix of apartment sizing required being:
  – 40 x 35 sqm Studio Apartments
  – 20 x 50 sqm One Bedroom Apartments
- Minimum one – One-bedroom apartment and two studios must be accessible.
- Consider the use of two-bedroom apartments for residents who may be accompanied by family members, potentially through flexible layouts to accommodate a range of resident types, e.g. dual key.
- Include basic kitchenette facilities and a bathroom in each apartment.
- Promote accessibility in the design to allow residents with a range of abilities to reside there.
- Consider residents that may be accompanied by family members, potentially through flexible layouts – including dual key.

5.2 Co-working Spaces and Staff Offices
An office space is to be provided for the Powerhouse Staff and Powerlab Residents. The layout will be open and inviting and encourage interaction between the staff and residents. Meeting room and break-out functions for the Powerhouse Staff and Powerhouse Residents will be serviced through the Multifunction Spaces and Communal Areas respectively.

The Co-Working Spaces and Staff Offices may:
- Be designed to provide activity-based working for 200 Powerhouse Staff and Powerhouse Residents (i.e. hot desks – through an agile working model in line with the NSW Governments Fitout Design Principles [Office Workplace Accommodation] Guide
- Provide opportunities for natural ventilation and daylight.
- Provide a flexible space that can be used for casual staff and volunteer briefings and breakouts.
- Allow for secure access control.

5.3 Powerlab Kitchen
Communal Areas will form the gathering and break-out space for all Powerhouse Residents and Powerhouse Staff.

The Space must:
- Be a combination lounge–dining–kitchen space servicing food, social and relaxation needs.
- Include a large-scale communal kitchen that will support the preparation and sharing of meals between collaborators and project teams. It will also accommodate special events where teams share knowledge with communities and audiences.
- The communal kitchen will be integrated into the curated food program that will include chef masterclasses, producers, events, demonstrations, secondary-school programs and the celebration of culturally specific community days.
- Be located on a single level and accommodate all Powerhouse Residents and Powerhouse Staff (minimum 200 people)
- Be able to accommodate a range of furniture and 'spaces within the space' such as lounges, long dining tables and smaller more intimate table and chair arrangements.
- Provide reasonable access to sunlight.
- Be accessible to staff and Powerlab residents 24/7 with appropriate access pass.

5.4 Multifunction Spaces

The Multifunction Spaces will be a flexible space for Powerhouse staff, researchers, Powerhouse Residents, the community, education and commercial hirers where people can work together and interact. Activities undertaken within the Multifunction Spaces include workshops for school children, designing and creating installations or objects and meetings. Essentially a series of meeting rooms, it will be programmed to suit the needs of a range of user groups.

The Multifunction Spaces may have:

- A secure entry from all other spaces within the Powerlab.
- Various meeting room spaces.
- Robust and neutral finishes that can be dressed or themed as required.
- Flat floor layouts that can accommodate a range of uses.
- Potential to include flexible layouts between the small, medium and large spaces is through the use of operable walls and other forms of in-built flexibility. Formal and Informal Space that can be used for presentations, workshops, events.

5.5 Digital Studio

The Digital Studio will be a working space that supports the production of digital content including video, audio, digital imagery and 3D and new technology. Users will include Powerhouse Staff, industry partners, Powerlab residents, community organisations and tertiary students. The Digital Studio must:

- Be a flexible digital studio space that will support the professional production of photography, audio and video. It will include a soundproof audio and video recording studio alongside support for post-production and broader content development and distribution.
- Include an area to digitise objects on display (quick turnaround) or about to go on display.
- Provide event and program coverage, including quick turnaround of event and exhibition shots for communications and social media.
- Studio shoots of staff and visiting speakers.
- Sound-proofed audio recording for podcasts and video shoots.
- Video interviews for visiting speakers as well as video post-production.
- Testing and refining media installations working with Media Technology team, which requires video post-production on site.
- Co-locate work with curators, designers and external partners.
- Be accessible to staff and Powerhouse residents 24/7 with appropriate access pass.

5.6 End of Trip Facilities

Staff and Powerhouse Residents must have access to end of trip facilities that integrate in the precinct journey and arrival to facility would include:

- Secure Personal Storage
- Secure Bike Storage
- Showers, toilets, basins

5.7 Powerlab Storage

Storage should be available to support the following functions;

- Space for general storage throughout the facility to support flexible spaces and multi uses.
- Adequate storage for cleaning equipment and consumables must be provided in facility.

5.8 Powerlab Circulation

Circulation within the Powerlab should be appropriately sized to support the movement of Powerlab residents, staff and users between spaces.

6. FOOD AND BEVERAGE RETAIL

Distinctive, fine grain food and beverage offerings will reflect the cultural diversity of Parramatta and Western Sydney. The retail offerings will support the social and recreational space integrated into the Precinct, which serve events, visitors and the local community. The food and beverage retail will contribute to the creation of a vibrant and active 24-hour Precinct.

The location of the food and beverage retail should consider opportunities to maximise commercial return and not be reliant on Museum patronage only. The multiple offerings should focus on audience development and will destinations unto themselves.

The Food and Beverage retail will change over time in response to the changing demographic and growth of Parramatta. As a result the retail design needs to accommodate this.

7. ANCILLARY SPACES (FRONT AND BACK OF HOUSE)

7.1 Amenities

Amenities must be provided for within convenient locations within the Precinct that:

- Provide sufficient toilet facilities.
- Provide a mixture of Male, Female and uni-sex sanitary facilities.
- Provide appropriate sanitary facilities for people with a disability.
- Provide an appropriate number of parent rooms.
- Provide shower facilities for staff.

7.2 Prayer Rooms

- Provide prayer rooms/multi faith spaces as appropriate.

7.3 Loading and Back of House

Back of House for Presentation Spaces must:

- Provide access from external spaces where the presentation space is on the ground floor.
- In the case of elevated spaces identified as being serviced by Goods Lifts, this should have a minimum sizing of 6m x 3m (for vertically separated spaces)
- Support the load in and load out of all objects.
- Have full separation between front of house and back of house activities both within the building and the public domain.
- Provide a flexible space adjacent to each Presentation Space that could be used for catering, dressing room, technical preparation space or Collection management space.
- Include entry/exit points sized adequately for ease of access and object transfer.
- Establish all loading to minimise double handling for efficiency in facilitating swift turnover of events.

PART 3

URBAN DESIGN GUIDELINES

EXECUTIVE SUMMARY

SJB was engaged by Create NSW to prepare the Urban Design Guidelines for the Powerhouse Precinct at Parramatta. The Urban Design Guidelines set out qualitative and quantitative criteria for the project and forms part of the future International Design Competition and Environmental Impact Statement. The project includes the delivery of the Powerhouse Precinct, public space and a pedestrian bridge extending across the Parramatta River. Although it is outside the scope of this project, these Guidelines outline how the two developments will complement and respond to each other.

Aligned with the Greater Sydney Commission's (GSC) objectives outlined in A Metropolis of Three Cities and the Central City District Plan, this project marks a significant opportunity to support population growth, deliver significant economic benefit, enhance liveability outcomes, as well as leverage investment in public transport in one of the fastest evolving regions in NSW and Australia. Together with a renewed Riverside Theatres performing arts centre, the Museum will form a major institution in the city's arts and culture offering. These projects will introduce a series of new experiences and public spaces along the river corridor.

The project will form part of a network of proposed public spaces and infrastructure planned by the City of Parramatta Council and NSW Government. These include Parramatta Square, public domain upgrades to Church Street, Parramatta Light Rail, Sydney Metro West, City River Strategy, Civic Link and the Phillip Street 'Smart Street'. The investment in deepening the presence of NSW cultural institutions in Western Sydney also represents greater recognition of the richness and innovation of the arts and cultural sector of Western Sydney, and the importance of supporting cultural participation and the achievement of educational outcomes. The new Museum will celebrate Australia's indigenous cultures and engage with local communities through both design development and operational phases.

The site's strategic location on the southern foreshore of the Parramatta River positions the precinct at the nexus of two high level future frameworks and strategies for the CBD, the Parramatta Civic Link Framework and the Parramatta City River Strategy created by Council. The Powerhouse Precinct will provide the opportunity to integrate, shape and deliver the city moves and aspirations highlighted within these documents. By increasing permeability through the site and through the provision of high-quality, equitable and accessible spaces, the Museum supports the orientation of the city towards the river.

THE POWERHOUSE PRECINCT AT PARRAMATTA
In April 2018, the NSW Government announced the relocation of the Powerhouse Museum to Parramatta (now referred to as the 'Powerhouse Precinct at Parramatta'). This move will enable the Museum to be the largest in NSW.

Internationally, the Museum of Applied Arts and Sciences is acknowledged for the calibre of its Collection which spans history, science, technology, design, industry, decorative arts, music, transport and space exploration.

The Powerhouse Precinct will offer a once-in-a-generation opportunity to create a purpose built museum to welcome people from across NSW and around the world to experience the Museum's Collection. This institution in Western Sydney provides an opportunity to engage and attract new audiences around these disciplines, providing spaces that foster social interaction and allow for innovation to occur.

The Powerhouse Precinct will:
— Offer exhibition and public spaces.
— Give increased access to the internationally significant Museum Collection.
— Provide state-of-the-art exhibition spaces to present international exhibitions, bringing the very best of the world to Sydney.
— Form new public spaces on the river's edge, activating the river through events, cafes and complementary retail.

The project includes a complex and layered set of influences and considerations which have been outlined in these guidelines. A successful precinct design will fulfil the functional requirements of the Museum in an environmentally sensitive way, addressing the site-specific challenges and celebrating opportunities of the Museum site.

CONTENTS

Source: Mark Merton Photography

1. INTRODUCTION

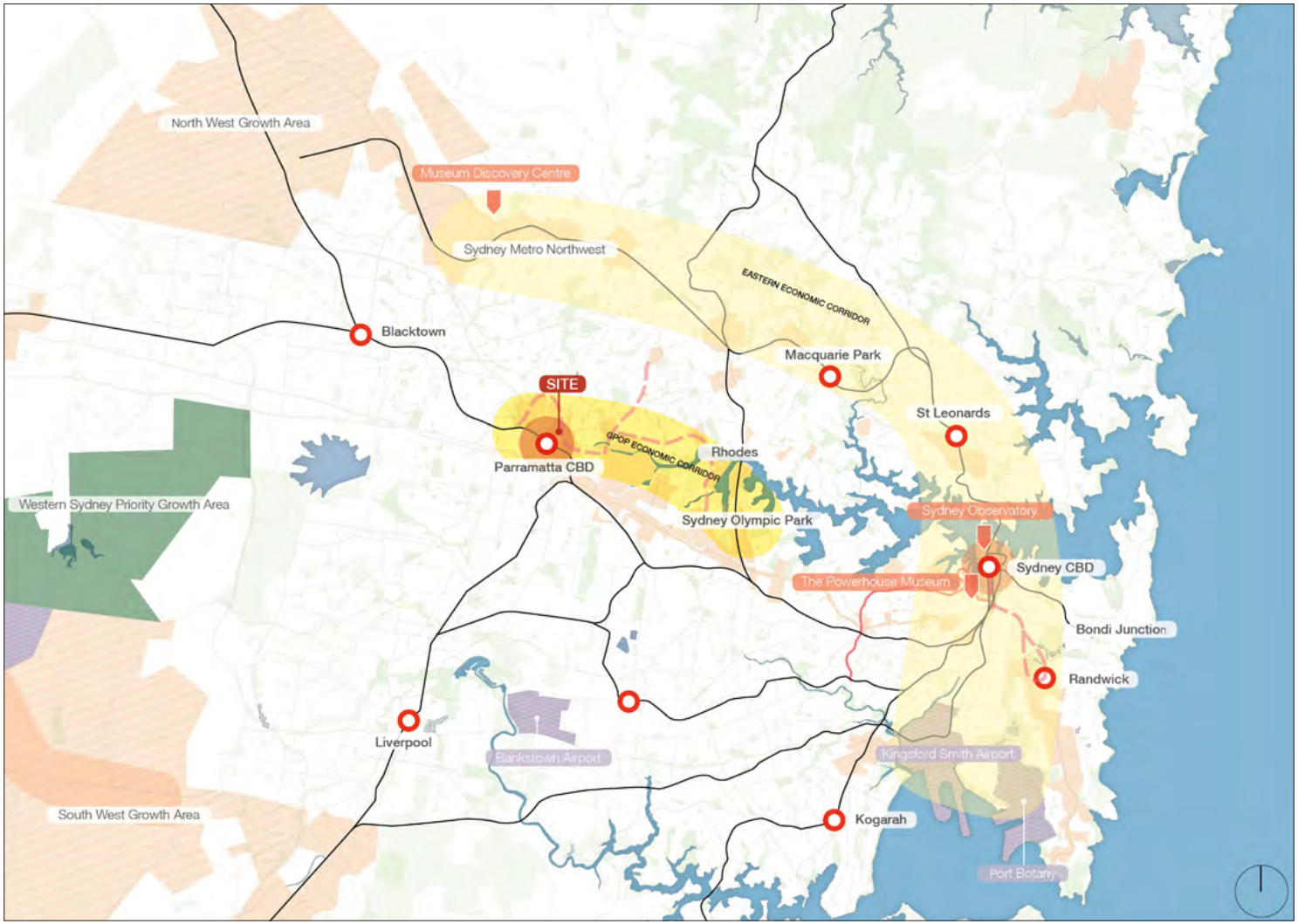
This section provides the framework for this project, including an outline of the context, scope and parameters of the Powerhouse Precinct. It explores the regional, urban and site context and the layering of urban aspirations for the site to deliver a fully integrated outcome.

1.1 REGIONAL CONTEXT

The site is located within Greater Parramatta, identified as a metropolitan centre in the Greater Sydney Region Plan – a Metropolis of The Cities, released by the Greater Sydney Commission (GSC) in 2018.

The Plan envisions Greater Sydney as a 'Metropolis of Three Cities', of which Greater Parramatta is situated at the core of the 'Central River City' within Sydney's mid-west. The future Central River City is described as a '... central hub which brings together stakeholders in business, health, education, arts and heritage' (p 18). This city is envisioned to be anchored by Parramatta CBD and supported by several transport and infrastructure pipeline projects including the Sydney Metro Northwest, future Sydney Metro West, Parramatta Light Rail, NorthConnex and WestConnex.

The site is located within the area identified as the Greater Parramatta to the Olympic Peninsula (GPOP) Economic Corridor, as shown in the Greater Sydney Region Plan. This region is highlighted as a focus area for sustainable economic growth and development within the renewal area between Greater Parramatta and the Olympic Peninsula.



Regional Context

1.2 URBAN CONTEXT

Parramatta CBD has undergone significant change over the last decade and will continue to develop rapidly, leveraging off significant investment in public transport, open space, community facilities and changes to planning controls. As Parramatta continues to evolve it will establish its role within the wider strategic context as Sydney's second CBD.

The site is located in the north of Parramatta CBD, bordered by the Parramatta River to the north, Wilde Avenue to the east, Phillip Street to the south and Church Street to the west.

The following key landmarks are located within the surrounding urban context:

1. Western Sydney Stadium
2. Parramatta Park
3. Old Government House
4. Prince Alfred Square
5. Riverside Theatres
6. Parramatta Eat Street
7. Parramatta Square (under construction)
8. Westfield Parramatta
9. Parramatta Train Station
10. Lancer Barracks
11. Parramatta Ferry Wharf

There are two proposed frameworks/strategies which aim to reshape the city support the growing and diverse population of western Sydney. The Powerhouse Precinct will have the opportunity to shape and deliver the aspirations of these strategies.

— Parramatta Civic Link Framework: This framework proposes a pedestrianised corridor through the CBD connecting Parramatta Station and Square through to the Parramatta River.
— Parramatta City River Strategy: This strategy proposes a series of connectivity/public domain upgrades and new spaces along the river corridor to support the reorientation of the city towards the River.

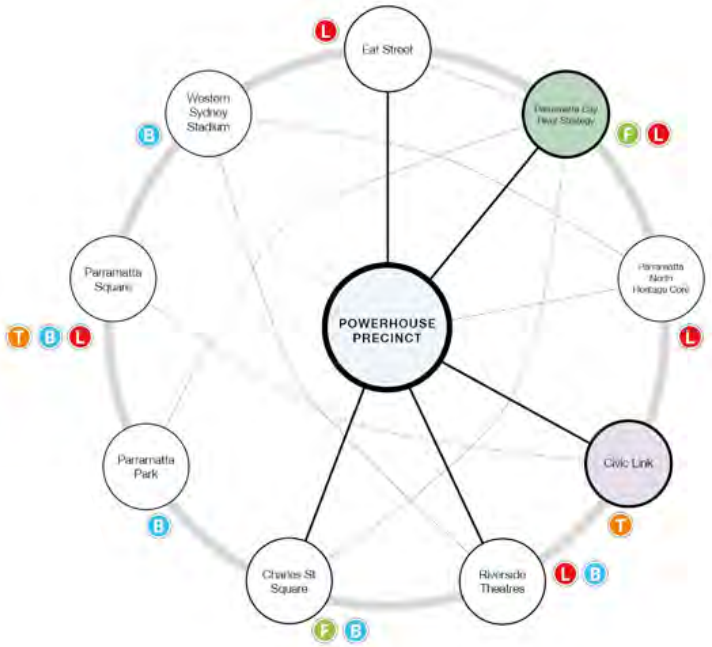
Urban Context

Site Boundary
Train Station
Train Line
Ferry Wharf
Light Rail
Major Roads
Open Space
Heritage Items
Waterway
Existing CBD Boundary
Proposed CBD Boundary (Parramatta CBD Strategy)
Civic Precinct
Eat Street
B2 Commercial Core (PLEP 2011)
Development / Growth Precinct
Proposed Frameworks and Strategies
Key Landmarks
Destinations

1.3 INTEGRATED PROJECT VISION

Parramatta Arts and Cultural Precinct
The Powerhouse Precinct will form part of an integrated arts and cultural precinct alongside Parramatta Riverside Theatres and the Parramatta North Heritage Core. These arts and cultural spaces will sit within a wider transforming civic and community environment which will include Civic Link, Parramatta Square and Library, Charles Street Square, Eat Street and Western Sydney Stadium.

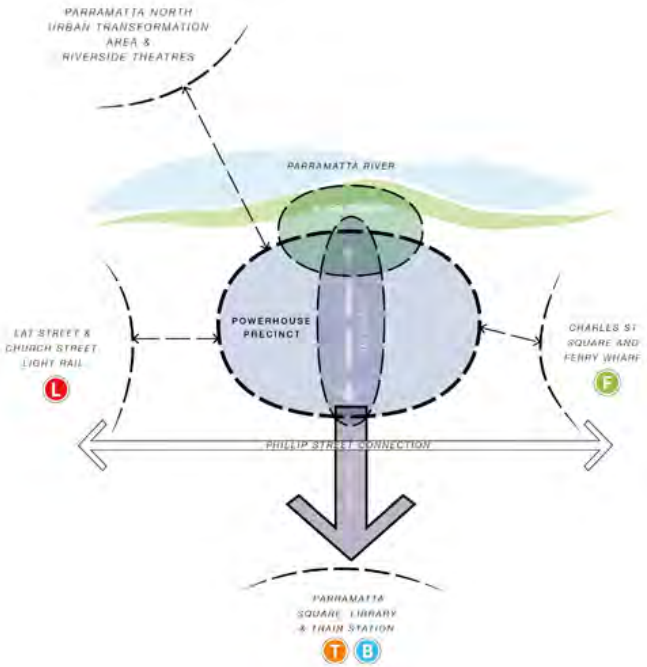
The destinational nature of the Powerhouse Precinct should acknowledge and consider the nature of those spaces and programming on the functionality of precinct and seek opportunities to combine with those spaces to bolster the vitality of the city as a whole.



- Train Station
- Light Rail Stop
- Bus Stop
- Ferry Wharf

Embedding the Precinct within the CIty
The Powerhouse Precinct will deliver an integrated outcome that embeds the urban aspirations for the site shared by the Museum and City of Parramatta. The overlaying of internal and external Powerhouse spaces, Parramatta Civic Link and the Parramatta River Strategy will be provide opportunities for vibrancy, activation and increased engagement from the public.

The diagram above highlights the opportunity for the Powerhouse Precinct to be an integral and embedded part of the city, stitched visually and physically into its fabric. Highly permeable, the public will be drawn to the precinct from multiple directions through the surrounding network of public domain. Proposed uses within the Precinct will both complement and be supported by the future use of Civic Link, the Parramatta River Corridor, Eat Street and Charles Street Square.



- Train Station
- Light Rail Stop
- Bus Stop
- Ferry Wharf

1.4 POWERHOUSE PRECINCT

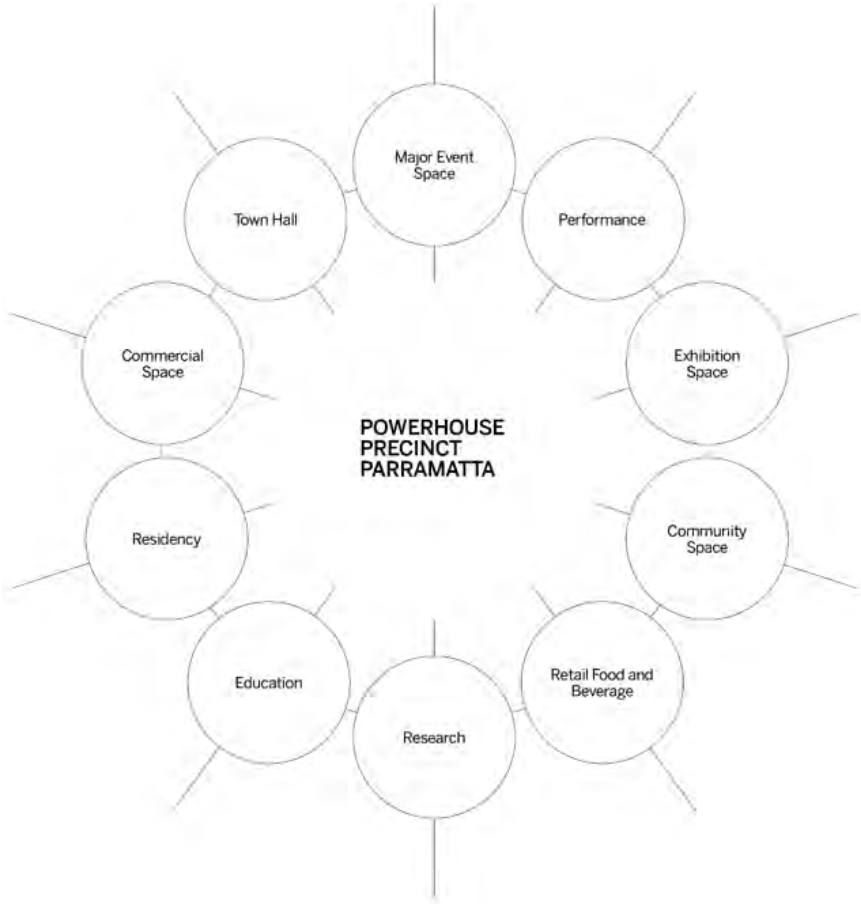
The Powerhouse Precinct is proposed as a vibrant and highly-flexible precinct embedded within the fabric of the city and a catalyst for its activation. The precinct will support the Powerhouse's dynamic, changing program that will constantly shift in scale to accommodate multiple daily activities and large-scale events across the whole precinct. It will able to accommodate multiple events simultaneously and be robust and porous enough to operate across 24-hours.

The Powerhouse Precinct will be a living working precinct that will be about collaboration and sharing knowledge and highly valuing the perspectives of First Nations and non-western thinking. It will support internal and external presentation spaces, digital studios and learning labs, co-working spaces and residential apartments for short and long-term residencies.

The Powerhouse Precinct will also be a unique and significant opportunity make the river an active participant in the life of the precinct. The Precinct will become a responsible caretaker of the river and in turn the river will connect the precinct with its communities, its environment and cultural histories. The active relationship will inform Precinct programs, research and education and include development of infrastructure that contributes to river health.

Shared Urban Aspirations

— Integrate the Powerhouse Precinct into the city and river corridor by providing physical and visual connectivity and fine-grain porosity.
— Provide flexible, comfortable, multi-layered and programmable public domain spaces to encourage visitation and dwelling.
— Provide active edges around buildings to activate the city and river foreshore at ground level and support the entrepreneurial approach to commercial activity within the precinct.
— Support water activation and quality improvements allowing Parramatta River to be accessed and utilised through passive recreation as well as events and Powerhouse programming.
— Connected through to public and private transport routes and hubs across the city.



1.5 PARRAMATTA CIVIC LINK

Parramatta Civic Link is a proposed "green, pedestrianised public space and cultural spine" extending across four city blocks from the heart of Parramatta CBD to the Parramatta River. Its delivery is supported by City of Parramatta through the Civic Link Framework Plan (2017) and the Draft Civic Link DCP placed on exhibition in 2019.

The site is located at the northern end of the Civic Link study area and indicated to deliver the River Link, a critical connection between the Civic Link and the River Precinct.

The framework also describes the future character of the River Link within the subject site. The plan notes:

> 'The River Link block represents a critical connection between the Link and the proposed major event space at River Square, through the proposed Museum of Applied Arts and Sciences. ... Views to the river are to be enhanced and celebrated by a generous public space that can accommodate major events and celebrations'.

The Civic Link Framework Plan drives a specific spatial response for the site, which has been translated into a set of controls in the Draft Civic Link DCP. Although the sites response to the controls will need to take into consideration the functional requirements of the Museum, the Powerhouse Precinct will seek to embed the shared urban aspirations and objectives for the link within the site.

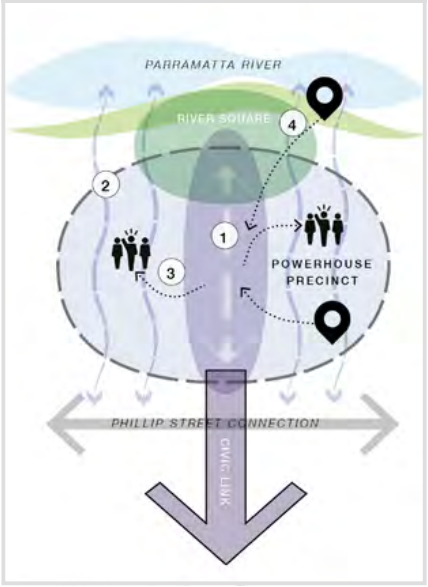
This Civic Link will support the aspirations of the Powerhouse Precinct through:

— Increased connectivity to public transport hubs, public domain and precincts within Parramatta CBD.
— The framing of the precinct as the northern CBD anchor alongside the River.

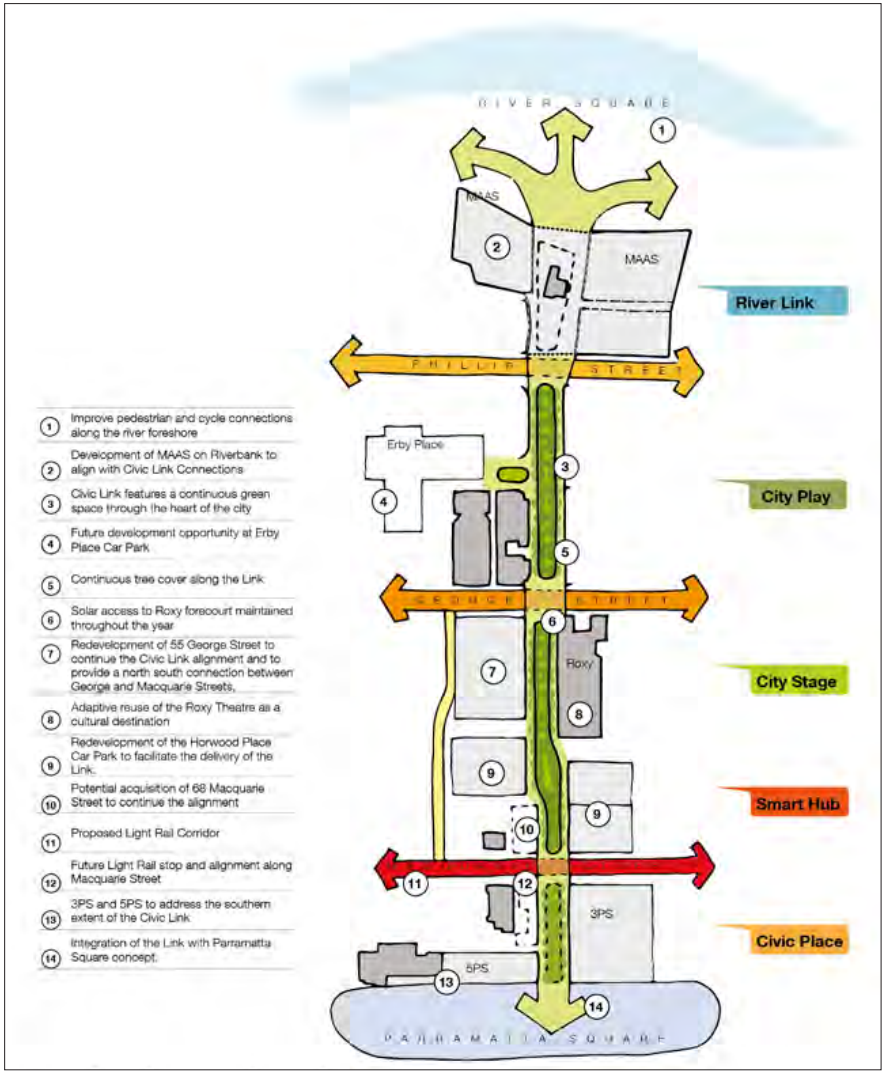
The delivery of the Civic Link is subject to a number of interrelated factors that may affect the timing and extent of the project. These include a reliance on property dealings south of the site, currently managed by Council and the potential impact of the future Metro West project. The implementation of the project is also contingent upon Council realising its Parramatta CBD Public Parking Strategy (Draft), released in April 2017.

Shared Urban Aspirations

— Extend the Civic Link through the Powerhouse Precinct as a legible and generous 24/7 pedestrian link from the intersection of Horwood Place and Phillip Street to the river foreshore to draw the public through the precinct. **(1)**
— Integrate of visual permeability into and through the site to support pedestrian movement between Phillip Street and the Parramatta River. **(2)**
— Integrate event spaces to foster opportunities for public engagement and activation. **(3)**
— Integrate opportunities to engage with the history of place. **(4)**



Shared Urban Aspirations Concept Plan



Civic Link Concept Plan – *Civic Link Framework Plan*, City of Parramatta, p 50

1.6 PARRAMATTA CITY RIVER STRATEGY

The Parramatta City River Strategy was completed in 2015 by McGregor Coxall on behalf of the City of Parramatta Council (CoP). It provides a strategic framework intended to improve connections between Parramatta and the CBD of the Central River City:

> 'The plan proposes a world class public domain and high quality collection of new buildings that are seamlessly knitted together by a dense network of accessible and active spaces'. (Parramatta City River Strategy, p6).

The plan breaks down the corridor into 4 distinctive river quarters; the site is located within City Quarter West:

> 'This precinct is consideraby larger than the others, framed on the west by the strong vertical presence of Lennox Bridge and its massive sandstone wall and, to the east, by the distinct vista of the sandstone escarpment beyond Charles Street weir. The northern foreshore is framed largely by strata residential buildings, while the southern foreshore poses the highest level of current and future change potential of the site; including Riverbank development and River Square. This stretch is the most distinctive City foreshore portion of the River. It encompasses the main tract of passed by ferry commuters entering and exiting the City, and it is the portion of the river most highly utilised both in the City's daily life and for minor and major city events'. (Parramatta City River Strategy, p19)

Although the Parramatta City River Strategy drives a specific spatial response, the Powerhouse Precinct will seek to embed the shared urban aspirations of the strategy within the site, alongside the functional requirements of the Powerhouse. Aspirationally, the precinct will seek to ensure that it is capable of hosting up to 10,000 person events through the use of all public domain and built form spaces within the site on the ground plane, rather than within a single focus space within the precinct.

The River Strategy was completed prior to the NSW Government announcing the establishment of a new Museum on the subject site.

Parramatta City River Strategy – Vol. 1 Excerpt (p 6–7)

Shared Urban Aspirations

- Integrate the Powerhouse Precinct into the river corridor by providing physical and visual connectivity.
- Integrate the built form and public domain to create a gathering space at the junction of the Civic Link and Parramatta River Foreshore.
- Provide active edges around buildings to activate the city and river foreshore at ground level.
- Support water activation and quality. improvements allowing Parramatta River to be accessed and utilised.
- Provide lower lever pedestrian and cycle routes along the riverside corridor.
- Incorporate pedestrian routes across the site providing connections between Phillip Street, Church Street, sites to the east and the river foreshore.
- High quality spaces along the river corridor ensuring adequate public space for the local community, visitors and workers.
- Sensitive lighting scheme resilient to flooding and fit for purpose.

1. Kings School
2. Justice Precinct
3. Riverside Theatre – new Riverside Theatres providing a variety of active retail and cafe uses. A Water Terrace would also support a range of outdoor cultural events
4. Marsden Street Weir
5. Altitude Meriton
6. Meriton Serviced Apartments
7. GE Building
8. Riverside Terrace – would be an accessible and usable public space catering for the day user and event goer. An upper level and lower level terrace would accommodate markets and other temporary initiatives
9. River Square
10. Willow Grove
11. Barry Wilde Bridge – an upper and lower level bridge crossing would be designed to allow for pedestrian and cycle movement across the River alongside boat movement under the bridges
12. City Beach
13. North Bank Terrace
14. Charles Street Weir
15. Escarpment Boardwalk
16. Parramatta Quay

1.7 SITE CONTEXT

The subject site currently comprises a number of different buildings, spaces and land uses. These include:

— Three storey Council car park
— Public open space along the river
— Two storey commercial buildings along Phillip Street
— Willow Grove (item of local heritage significance)
— St George's Terraces (item of local heritage significance)

Existing laneways currently provide vehicular access to these buildings and adjacent properties.

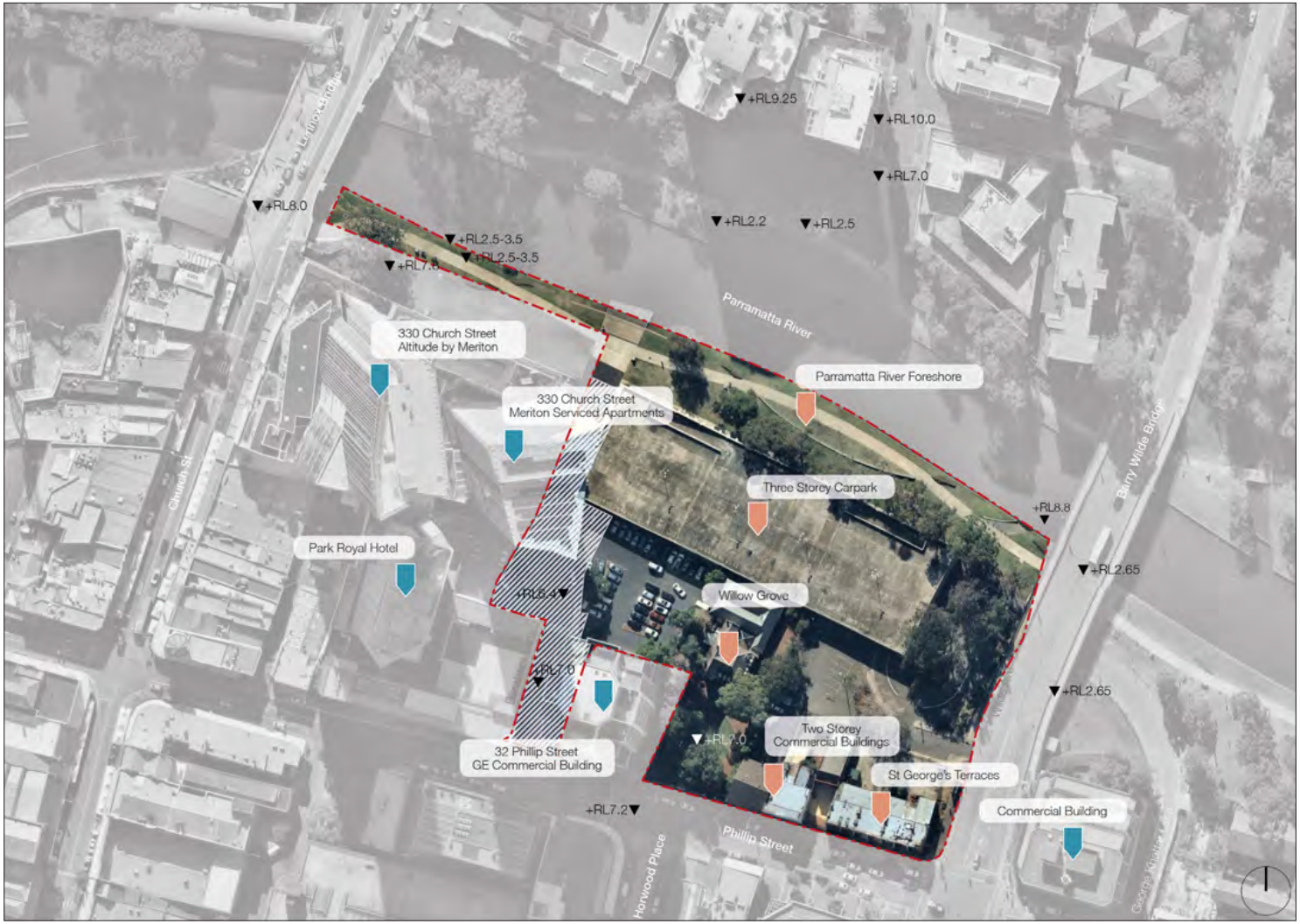
To the west of the site is a mixed use precinct which includes a 53 storey residential tower, 36 storey tower with serviced apartments and a food and beverage entertainment quarter. The Park Royal Hotel is also located adjacent to the site to the south-west. An access easement is located between these two properties and the subject site. This area cannot be built upon or above but must be integrated into the access plan for the Powerhouse and its precinct to develop a coherent arrangement that minimises user conflict.

The northern boundary runs adjacent to the Parramatta River, with a portion of the Parramatta River Foreshore green link and open space traversing the subject site. Phillip Street runs along the site's southern frontage.

The site is flanked by major roads to the east and south. To the west, Church Street, a bustling retail and dining strip, leads to the state heritage-listed Lennox Bridge while to the east, Wilde Avenue continues to Barry Wilde Bridge.

Topography and Flooding

The site falls steeply from Phillip Street to the river's edge, which is an important consideration for future site planning in relation to flooding, access and movement across the site. The existing multi-storey car park is built into the topography and has been designed to allow for water ingress in the case of flooding, holding part of the site's flood volume. The site is affected by regional flooding from the Parramatta River as well as overland flows from the stormwater drainage network. This results in a Probable Maximum Flood (PMF) and Probable Maximum Overland Flow Levels which should be considered in designs for the site.



Site Context

2. ANALYSIS

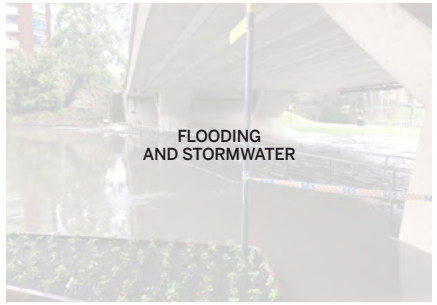
This section examines the city and site context that creates a foundation for the design of the project. Analysis has been completed across a range of categories including:

— Access and Movement
— Public Domain and Open Space
— Land Use, Destinations and Activation
— Built Form and Height
— Flooding and Stormwater
— Heritage and Cultural Significance
— Opportunities and Constraints

2.1 OVERVIEW
This section includes a rigorous exploration of the project context at the scale of the city and the site, in order to create a strong foundation for future planning for the site.

Analysis has been completed across the following categories:
— Access and Movement
— Public Domain and Open Space
— Land Use, Destinations and Activation
— Built Form and Height
— Flooding and Stormwater
— Heritage and Cultural Significance

The key findings from this analysis have been represented as a set of opportunities and constraints for the site.



2.2 ACCESS AND MOVEMENT: PARRAMATTA CBD

Parramatta CBD is well connected by public transport and private vehicle to its surrounds. Parramatta Train Station is located at the southern end of the CBD alongside the bus interchange which forms a key node for regional travel. Parramatta Wharf to the east, provides access to Sydney CBD and is the terminus point for the Sydney's third most trafficked ferry route (Transport for NSW, 2018).

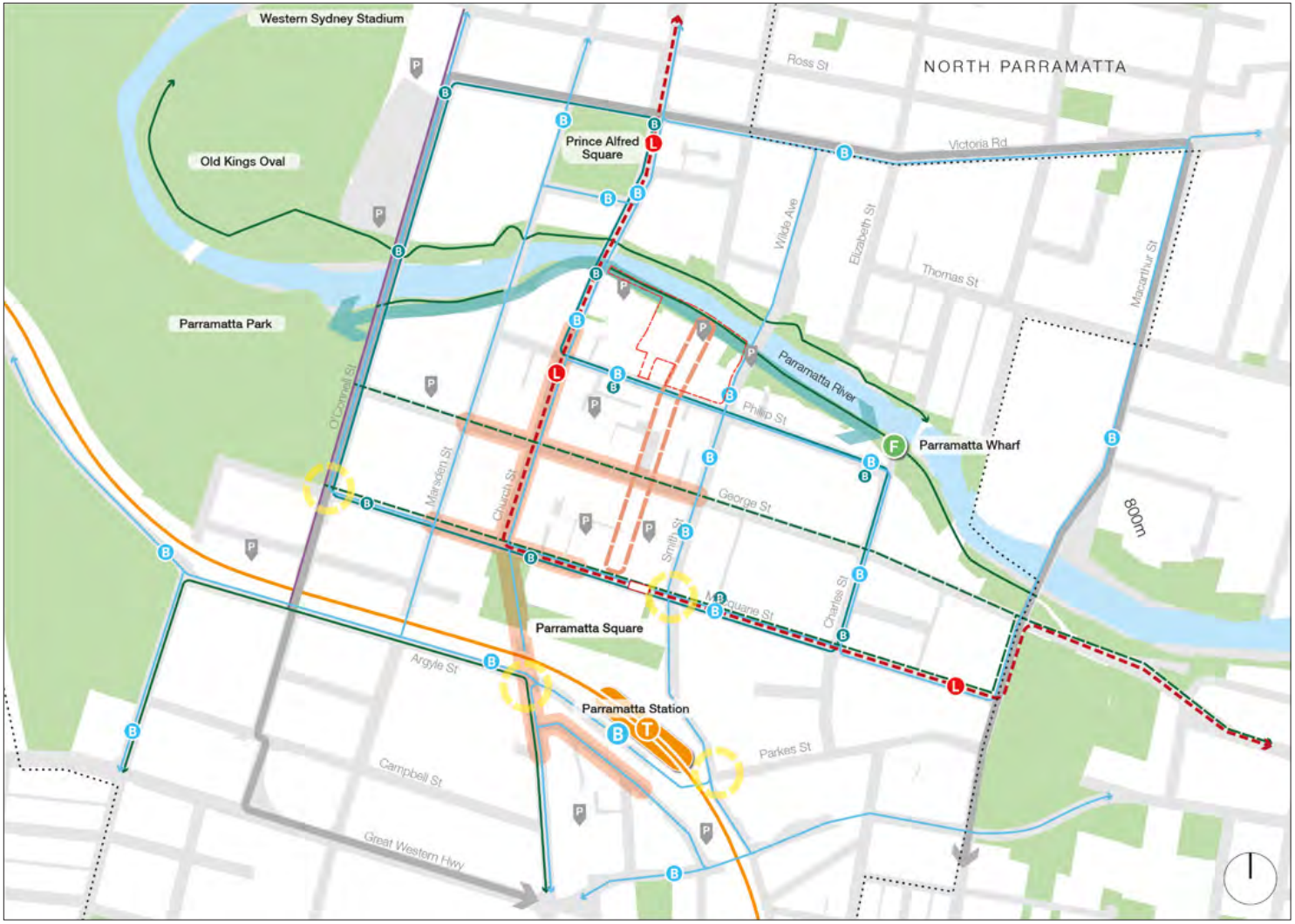
Two pieces of major public transport infrastructure will be delivered in Parramatta. Parramatta Light Rail Stage 1 will extend through the CBD down Macquarie and Church Streets connecting the CBD through to Westmead, North Parramatta, Camelia, Rydalmere, Dundas, Telopea and Carlingford. This will also connect through to Stage 2 which will extend to Sydney Olympic Park and the Carter Street Precinct. The Museum site will be closest to the proposed Eat Street stop on Church Street.

In 2018, the NSW Government announced the intention to deliver a new Metro West line. This project is currently in the preliminary planning phase.

Parramatta CBD has a ring road formed by Victoria Road to the north, Macarthur Street to the east, the Great Western Highway to the south and O'Connell Street to the west. This diverts major traffic flows around the finer grain city centre. The continuing reliance on private vehicles coupled with the significant provision of car parking within the CBD creates congestion in the city centre despite its connectivity to public transport.

The City of Parramatta Council's frameworks and strategies outline a number of future connections to be delivered to enhance the liveability, permeability and activation of the city, as well as to reduce private car reliance.

The Parramatta Civic Link Framework and the Parramatta CBD River Strategy highlight future north/south and east/west movement axes, connecting Parramatta Train Station and the proposed Parramatta Square through to the Parramatta River Corridor. This will assist in integrating a range of public facilities and infrastructure, including Riverside Theatres, Western Sydney Stadium (WSS) the Powerhouse Precinct and Parramatta Wharf through a network of public open space.



Access and Movement – Parramatta CBD

- Site Boundary
- Open Space
- Existing CBD Boundary (PDCP 2011)
- Proposed CBD Boundary (Parramatta CBD Strategy)
- Train Line
- Train Station
- Proposed Light Rail
- Public Bus Routes
- Shuttle Bus Route
- Ferry Wharf
- Off Road Bike Path
- On Road Bike Path
- Key Intersections
- Future Parramatta River Foreshore Link
- Car Park
- High Traffic Pedestrian Area
- Future Civic Link

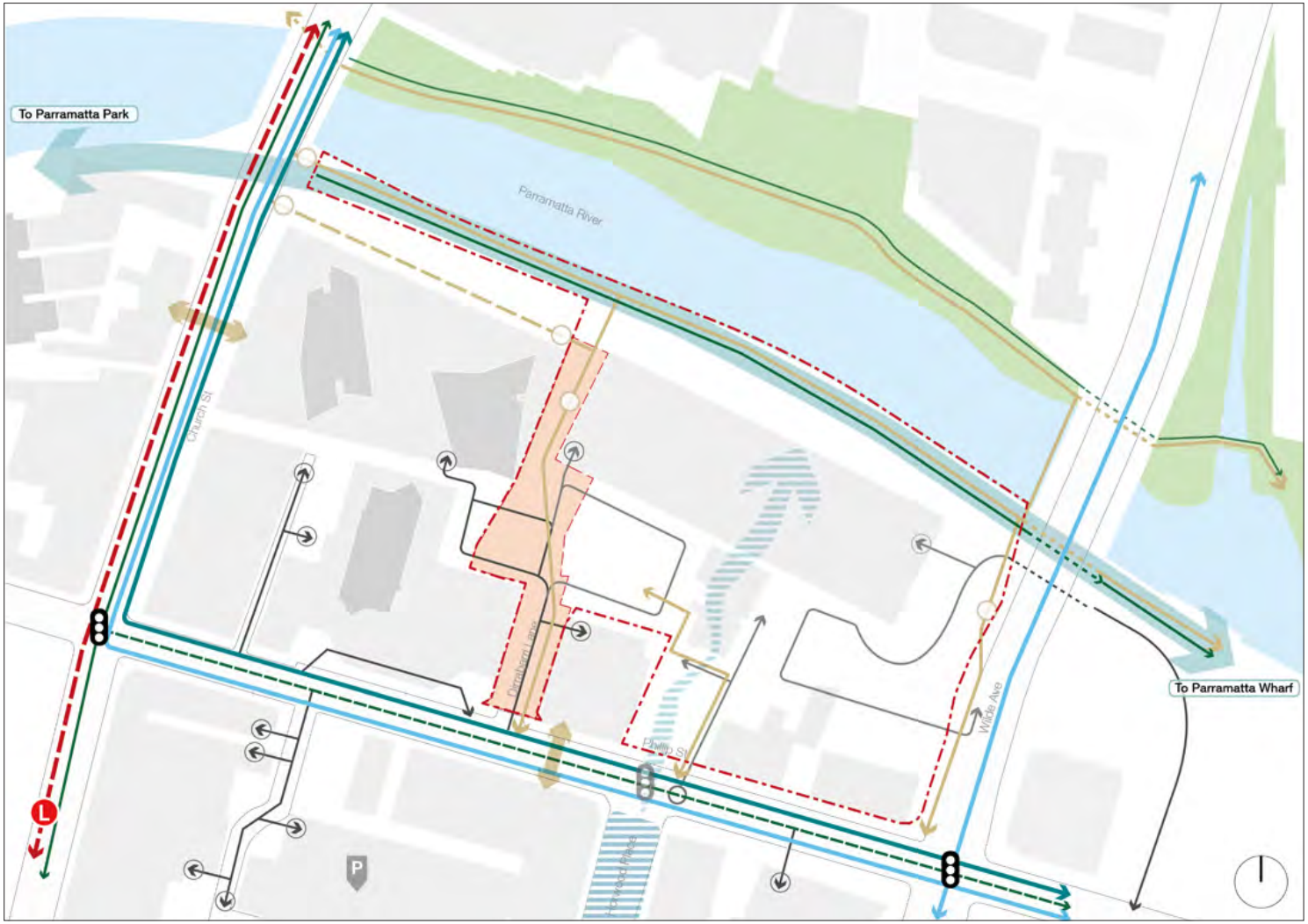
2.3 ACCESS AND MOVEMENT: THE SITE

The site is bordered by Church Street to the west, Phillip Street to the south and Wilde Avenue to the east. An access easement is located to the west, serving as a through-site link and facilitating vehicular access to Altitude, Meriton Serviced Apartments and the river foreshore (for event and servicing only). The site is accessible from Phillip Street (Dirrabarri Lane) and George Khattar Lane under the Wilde Street bridge with 3.5m clearance. These feed access points to the multi-storey car park on the south and east of the structure. An additional site egress point is provided on the east of the site, with a left turn only onto Wilde Avenue. A number of laneways extend off Phillip Street servicing street-facing tenancies.

Pedestrian routes through the site which connect through to Phillip Street and Wilde Avenue are poorly signposted and create routes which conflict with vehicle movement on the site. Additionally, level changes through the site and surrounds compromise the accessibility of the foreshore.

Shared paths are available on the north and south river foreshore. The northern path is well connected to the east and west. The southern path which runs through the site terminates in a set of stairs up to Church Street to the west and Queen's Wharf Reserve to the east. It currently connects Parramatta Wharf to the Museum site. Improvements to these routes along with a new cross-river bicycle/pedestrian bridge, new recreational and activation spaces are outlined in the future Parramatta CBD River Strategy.

- Site Boundary
- Pedestrian Route
- Upper Level Pedestrian Route
- Underpass
- Level Change
- Light Rail
- Bus Routes
- Shuttle Bus Route
- Off Road Bike Path
- On Road Bike Path
- Access Easement
- Traffic Signal
- Future Traffic Signal
- Future Parramatta River Foreshore Link
- Open Space
- Pedestrian Crossing
- Future Civic Link
- Existing Vehicular Access - Retain
- Existing Vehicular Access - Potential to be removed/ reconfigured
- Car Park



Access and Movement: Vehicular, Public and Active Transport – The Site

2.4 PUBLIC DOMAIN AND OPEN SPACE: PARRAMATTA CBD

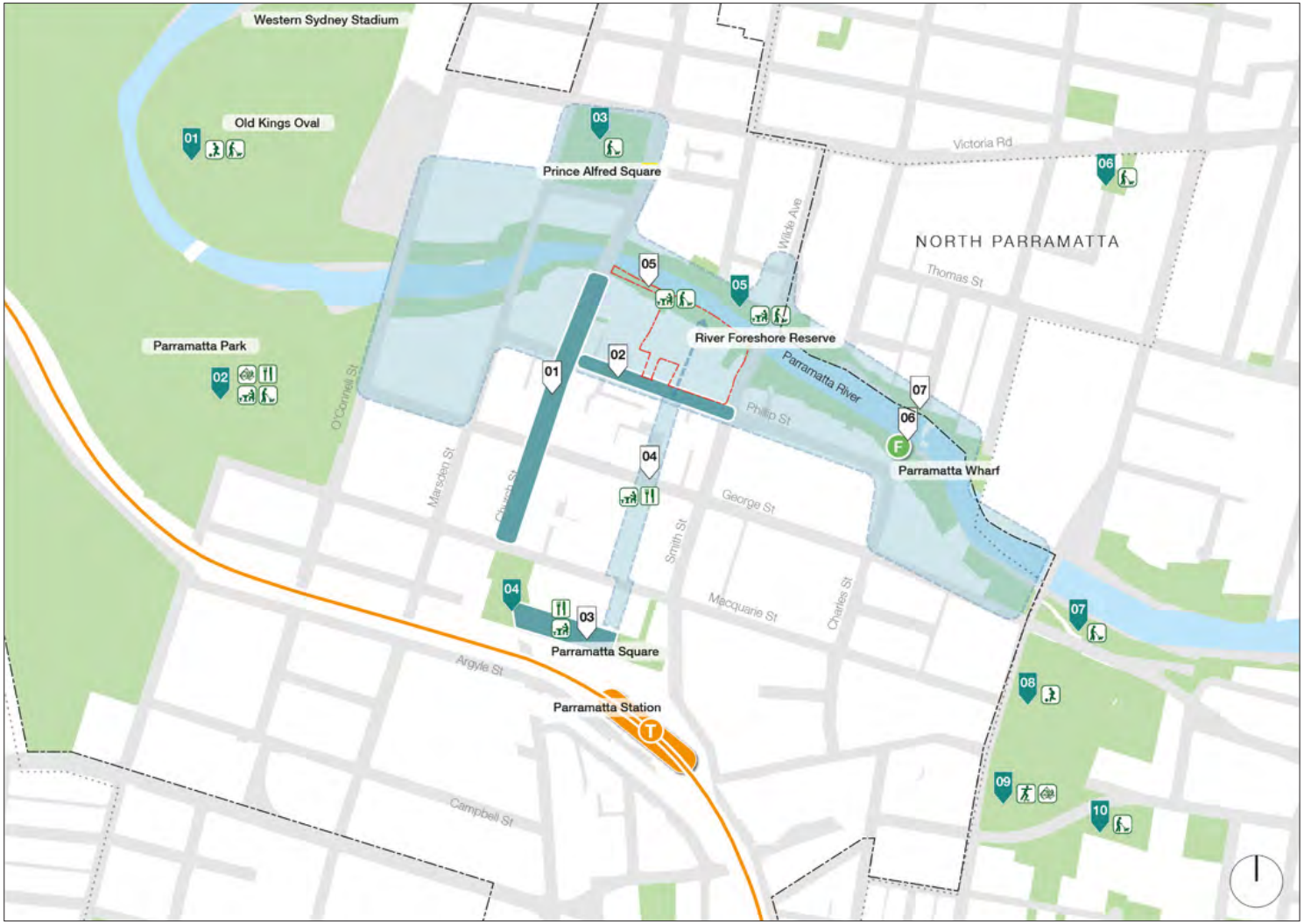
Parramatta has an established network of open spaces including Parramatta Park, Prince Alfred Park and the river foreshore. Key improvements along with new spaces are proposed to enhance the liveability of Parramatta and integrate with moves to promote active transport in the region.

The following key existing open spaces are identified opposite:

1. Old Kings Oval
2. Parramatta Park
3. Prince Alfred Square
4. Centenary Square
5. River Foreshore Reserve (RE1 Zoned Land)
6. Bill Thomson Reserve
7. Queen's Wharf Reserve
8. Robin Thomas Reserve
9. Parramatta Skate Park
10. James Ruse Reserve

The following projects involving the upgrade and expansion of the public realm are identified:

1. Light Rail Public Domain -Church Street Pedestrianisation (proposed)
2. 'Smart Street'- Stage 1 Technology upgrades to Phillip Street including coloured lighting installations, wider footpaths, expanded outdoor dining areas, CCTV and Wi-Fi capabilities (proposed)
3. Parramatta Square (in design)
4. Civic Link (future)
5. Parramatta CBD River Strategy (future)
6. Charles Street Square (in design)
7. Escarpment Boardwalk (in design)



Public Domain and Open Space – The Site

2.5 PUBLIC DOMAIN AND OPEN SPACE: THE SITE

Located adjacent to the Parramatta River, the site sits within an established network of open space and public sites.

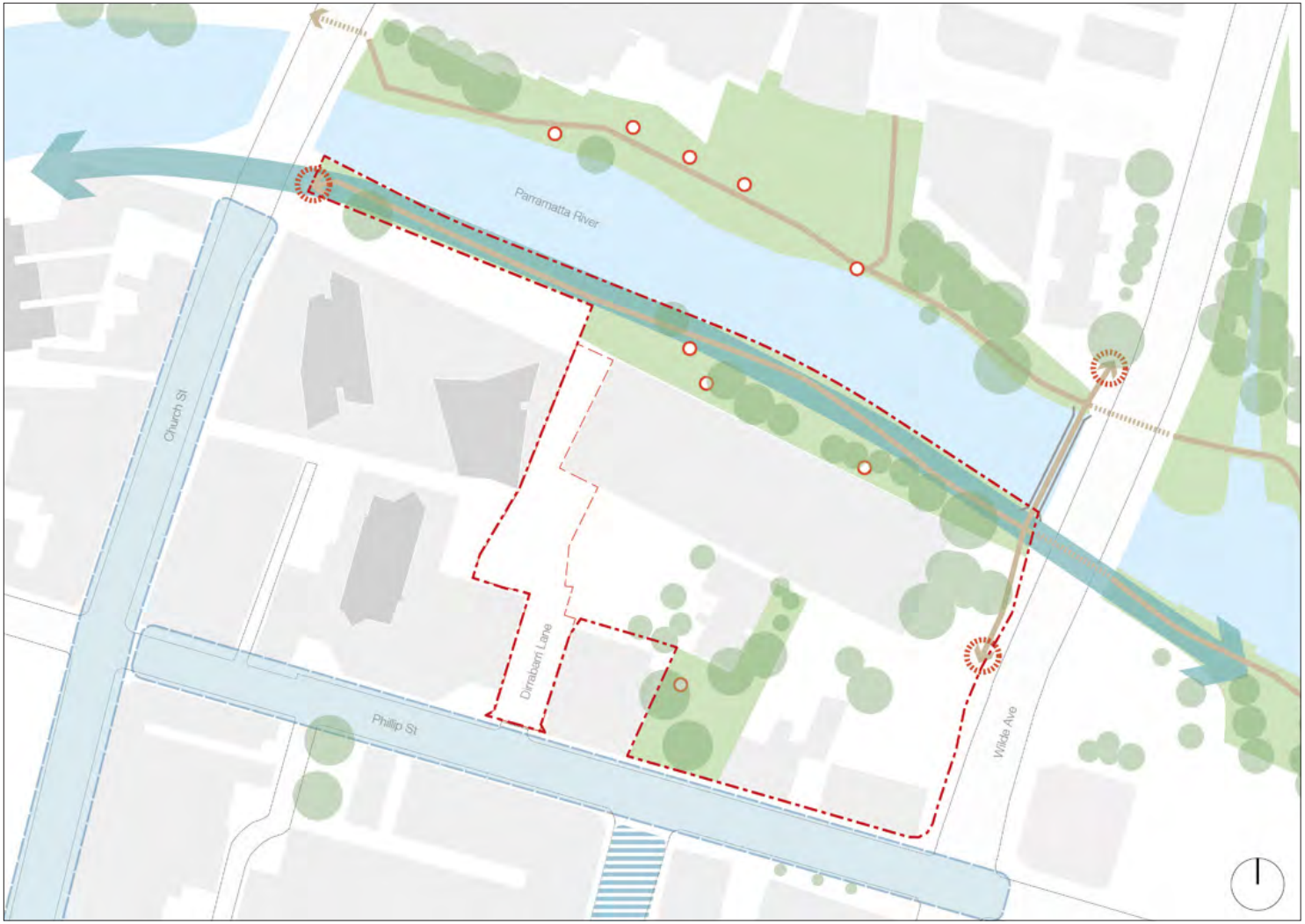
A central portion of the river foreshore stretches across the northern edge of the site. Existing pedestrian and cycle pathways provide shared access along the river foreshore and north-south across the water. Public amenity such as seating, large trees and lighting are provided along the foreshore.

Established trees are located on the site and along the river foreshore, including a number of jacarandas and eucalypts.

Outside the site and river foreshore area, existing street trees are minimal, resulting in a poor canopy coverage along the streetscape.

There are street upgrades proposed for Church Street, to enhance its role as an 'Eat Street' and provide streetscape improvements alongside the proposed light rail, and along Phillip Street which is envisioned as a 'smart street'.

A number of future frameworks are expected to enhance the area as an active cultural precinct, with an emphasis on a high-quality public domain. These include Civic Link and the Parramatta River Strategy.



Public Domain and Open Space – The Site
(including existing buildings and site condition)

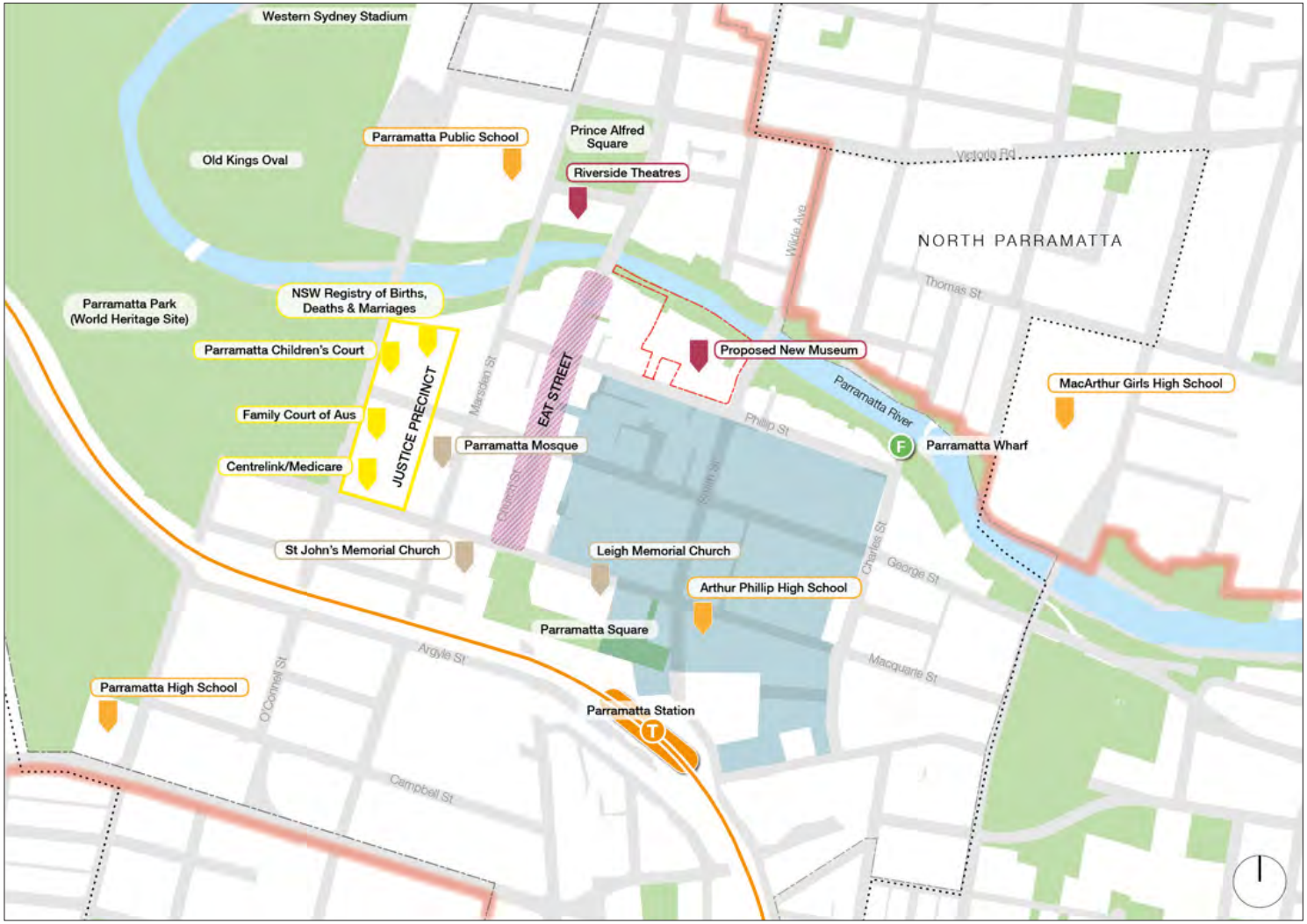
2.6 LAND USE AND DESTINATIONS: PARRAMATTA CBD

A mix of activities and uses are located within the Parramatta CBD. Different zones are characterised by a predominant land use that is clustered in an area. The key zones identified in site's vicinity shown opposite are:

— Justice Precinct - Defined by a series of buildings occupied by government agencies located to the west along O'Connell Street
— Eat Street
— Commercial Core

Other significant sites including schools, sites of religious significance, public transport nodes and open spaces, are scattered across the Parramatta CBD and surrounds.

The Powerhouse Precinct and renewed Riverside Theatres will both be major contributors to arts and culture across the region.



Land Use and Destinations – Parramatta CBD

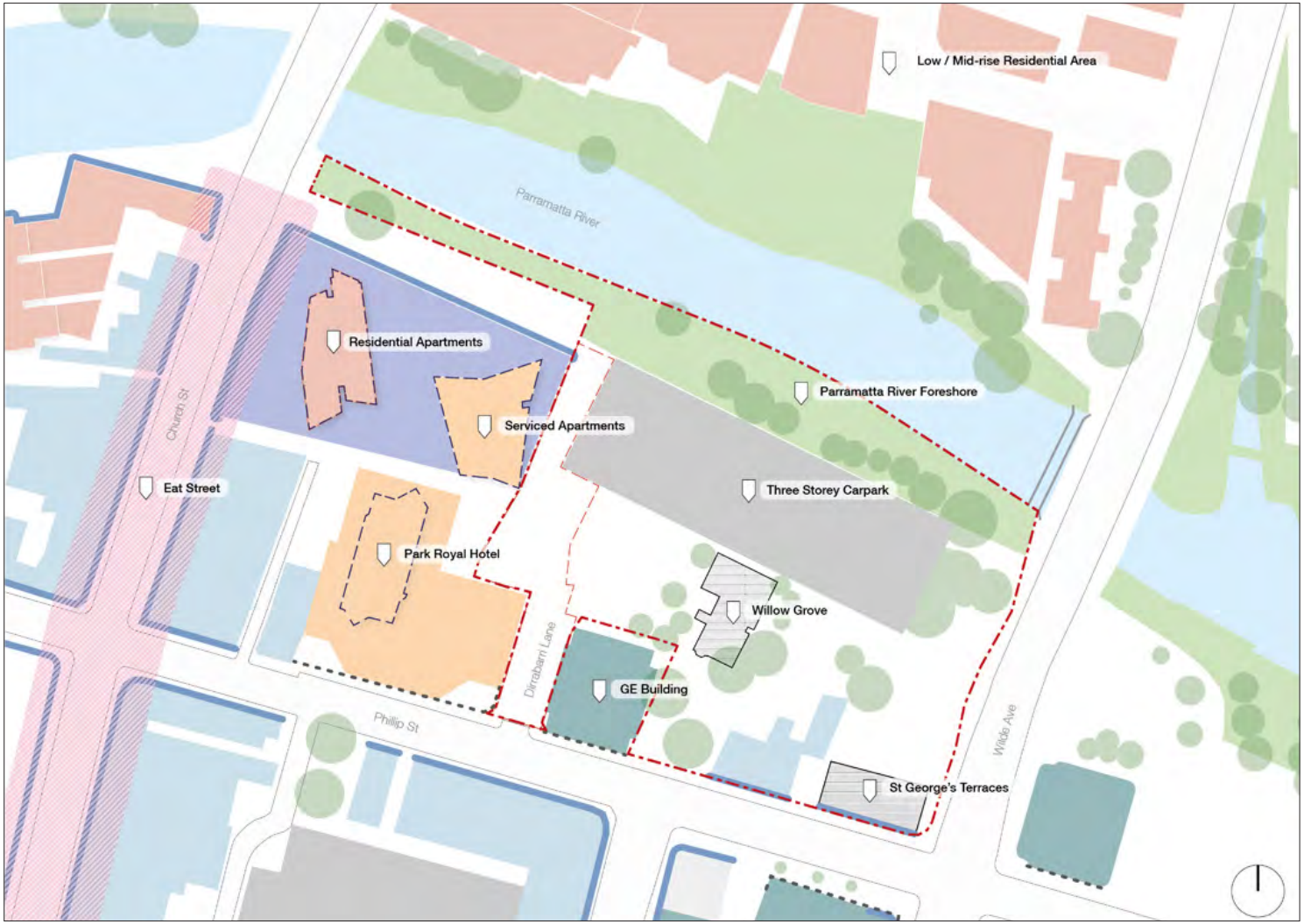
2.7 LAND USE AND ACTIVATION: THE SITE

Located within an area zoned B4 Mixed Use, the site and surrounds feature a diverse mix of land uses. The site itself is zoned a combination of B4 Mixed Use and RE1 Public Recreation. The site is currently occupied by a parking structure located in the north, retail uses to the south along Phillip Street and two vacant buildings.

Retail and food/beverage activity is focused predominantly along Church Street, which is characterised as an 'Eat Street'.due to a large number of on-street dining areas. Phillip Street features a mix of retail, hotel and commercial tenancies, resulting in a less distinct street character. Within the site's immediate context, residential apartment buildings are located on more recent development sites such as the Meriton towers directly to the west. The area directly opposite to the north of Parramatta River consists predominantly of low to mid-rise residential buildings.

At ground, Church Street is highly active, generated by a predominance of fine-grain retail and dining tenancies.

Along Phillip Street, the ground plane is slightly less active as it features a mix of retail, hotel and commercial interfaces.



Land Use and Activation – The Site

2.8 BUILT FORM AND HEIGHT: THE SITE

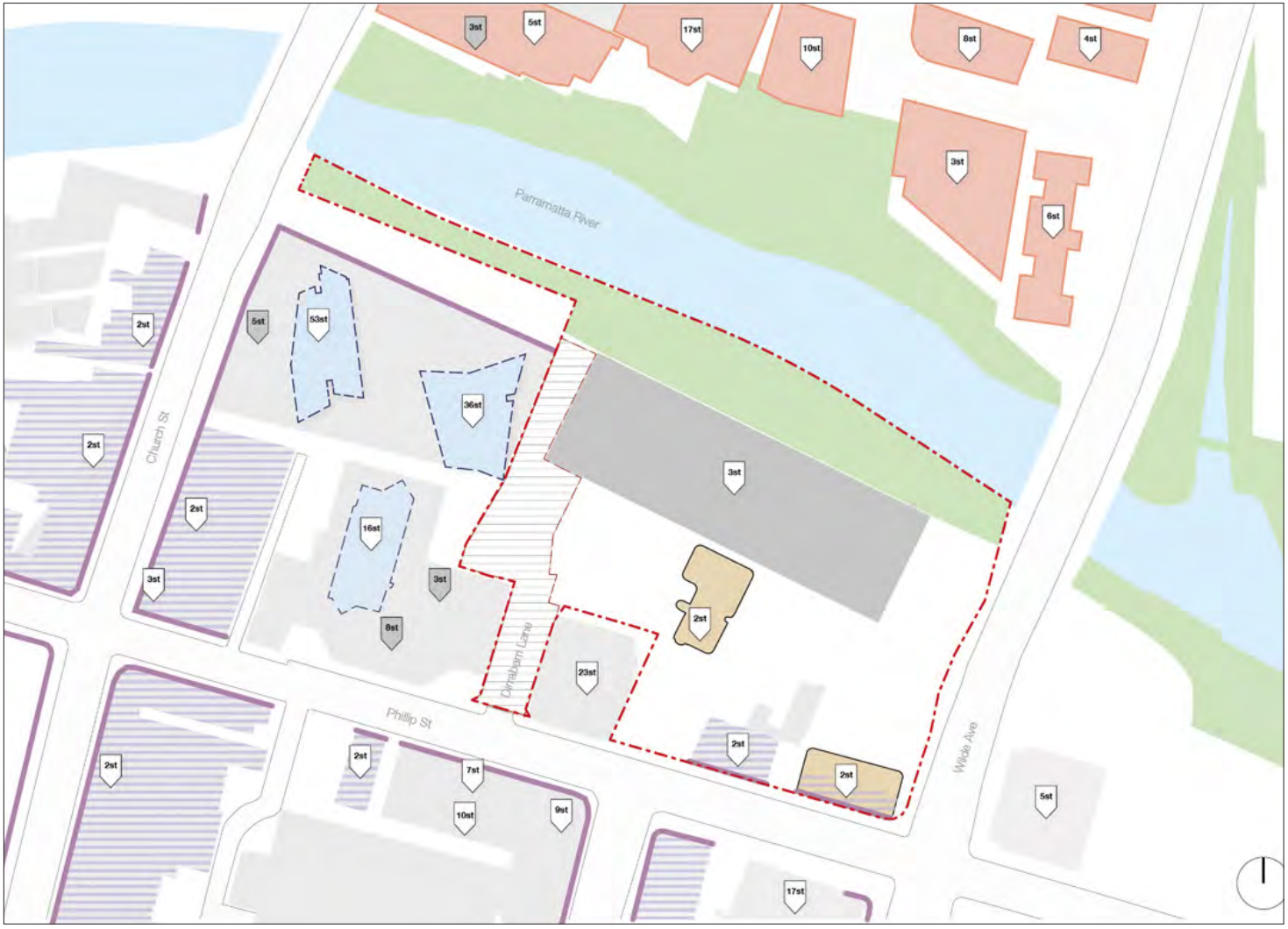
Within the site's immediate context, the built form consists of a range of typologies and heights. The site is, however, within an area of the CBD experiencing significant growth and redevelopment.

A number of buildings of relatively small footprints are located across the site, with a predominant height of 2–3 storeys. This includes two heritage buildings, a car park structure and another low scale retail building.

The tallest buildings located in proximity to the site are the Park Royal Hotel at 16 storeys, the Meriton Serviced Apartments at 36 storeys and the Altitude residential tower at 53 storeys.

Church Street has a predominant street wall height of 2 storeys across the fine grain retail/dining strip, stepping up to a 5 storey podium below the Altitude residential tower. Along Phillip Street, there is no predominant street wall datum, with heights ranging from 2 storeys to 23 storeys.

Located directly opposite to the north of the river, the built form consists typically of medium-scale residential apartment blocks.



Built Form and Height – The Site

2.9 FLOODING AND STORMWATER: THE SITE

The site is affected by regional flooding from the Parramatta River and is located within the extents of the Probable Maximum Flood (PMF) and parts of the site are within the extents of the 100 and 20 year ARI flood.

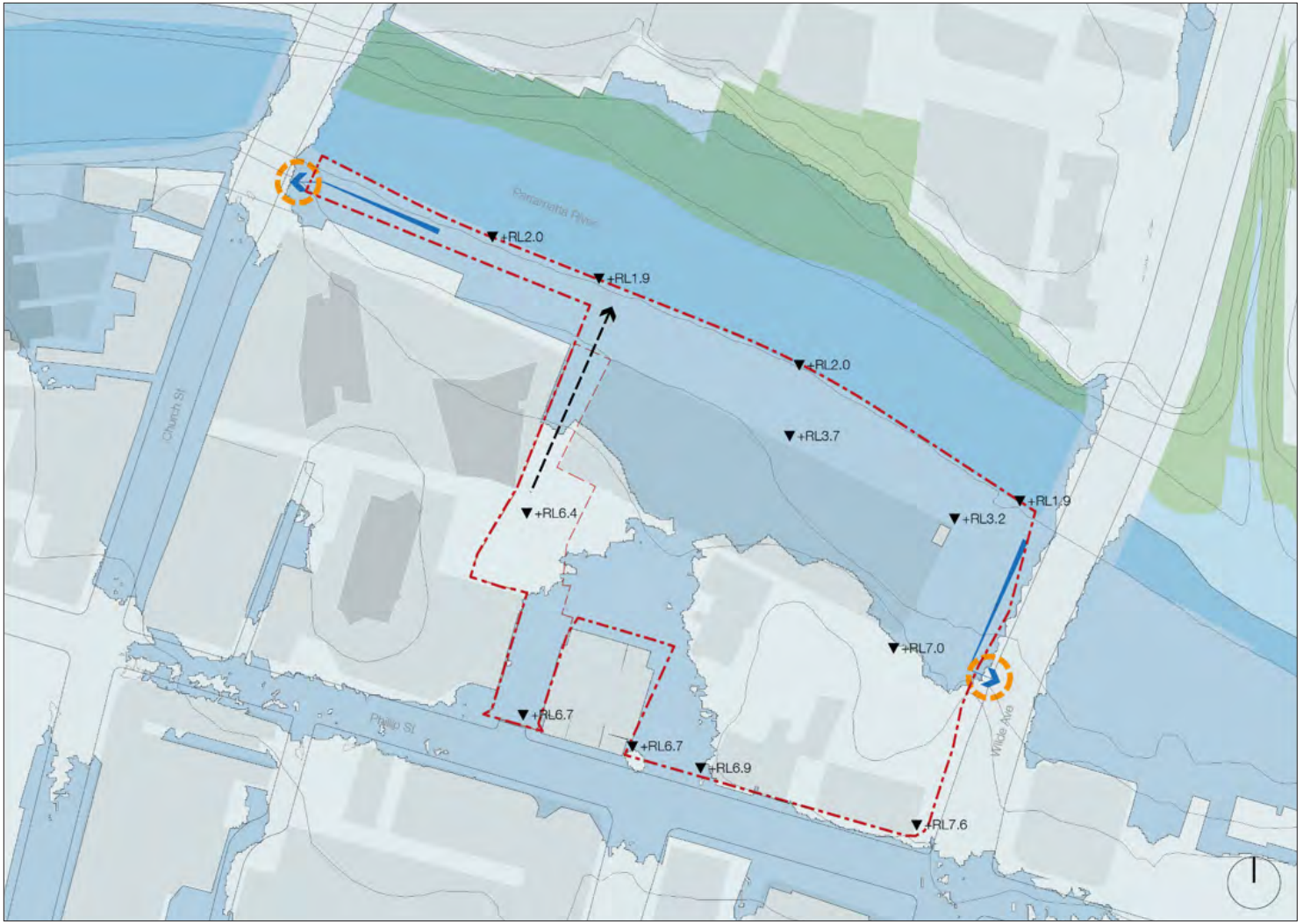
The site is also affected by localised flooding as a result of overland flows from the stormwater drainage network, affecting Phillip Street, the access road onto the site, and the central area of the site.

The flood levels at the site are as follows:
1:100 year ARI: RL+7.00
Probable Maximum Flood (PMF): RL+10.4
Probable Maximum Overland Flow (PMOF): RL+11.32

The river foreshore, existing multi-storey carpark, access from George Khattar Lane, and access from Phillip Street are located within the extents of the 100 year ARI flood. The existing car park has been designed with an open structure to allow water ingress during a flood and provides flood storage volume up to a depth of approximately 2.5m for the 100 year ARI flood.

An overland flow path existing through the site that allows localised flood water to flow from Phillip Street to the Parramatta River. This flow path is currently blocked by the existing car park and flows to the west of the site between the existing car park and adjacent 330 Church Street.

An existing 600mm stormwater pipe runs through the centre of the site connecting Phillip Street to the River. An existing 900mm stormwater pipe runs along the eastern boundary connecting Phillip/Smith Street to the river. These stormwater pipes will require diverting to suit the future Powerhouse and public domain layout.



Flooding and Stormwater – The Site

2.10 HERITAGE AND CULTURAL SIGNIFICANCE: THE SITE

The site features items of heritage significance including two items and three Archaeological Management Units (AMU). Lennox Bridge to the north-west of the site is also an item of heritage significance.

Located centrally within the site at 34 Phillip Street, Willow Grove a heritage item with a local listing. The heritage item includes a two storey Victorian building with surrounding gardens and a mature tree.

St George's Terraces is located at the corner of Phillip Street and Wilde Avenue. This locally listed heritage item is an example of early Victorian period terraces.

The three Archaeological Management Units (AMU) located across the site hold historic significance to the development of Parramatta, dating back to convict and colonial periods.

Furthermore, the site and surrounding Parramatta region was originally inhabited by the Burramattagal clan of the Darug people, who are the traditional land owners. The Parramatta River corridor was an important gathering area, food source and mode of transportation and continues to hold cultural significance for the local Indigenous community.

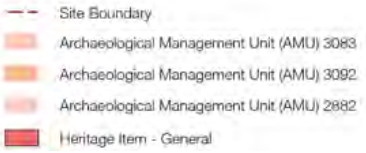
To enable the best Museum outcome and support the Civic Link we are requesting that all submissions consider the removal of Willow Grove, should it be required.

Willow Grove

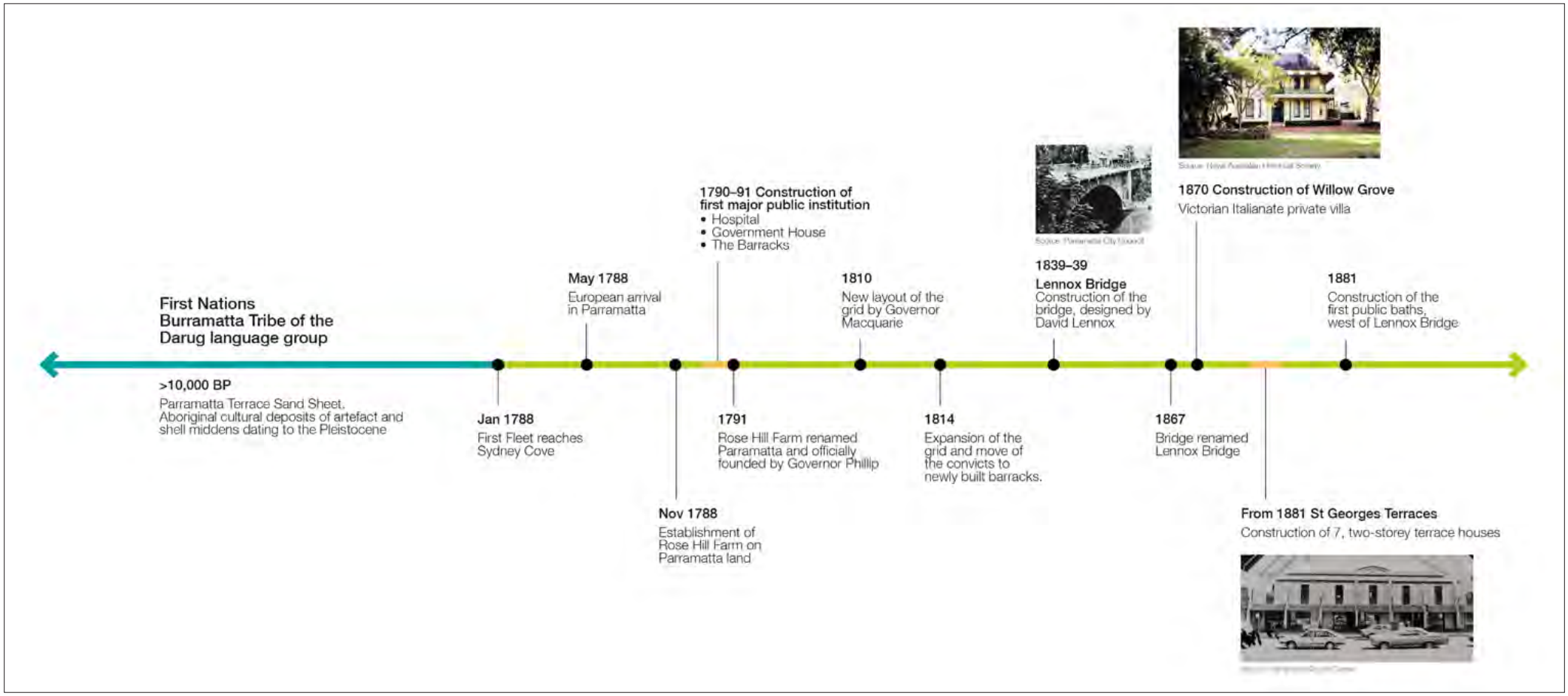
St George's Terraces

Lennox Bridge

Heritage and Cultural Significance – The Site



2.11 HERITAGE TIMELINE



Heritage Timeline

2.12 OPPORTUNITIES

The following opportunities are identified for the site under three key themes:

Movement and Access

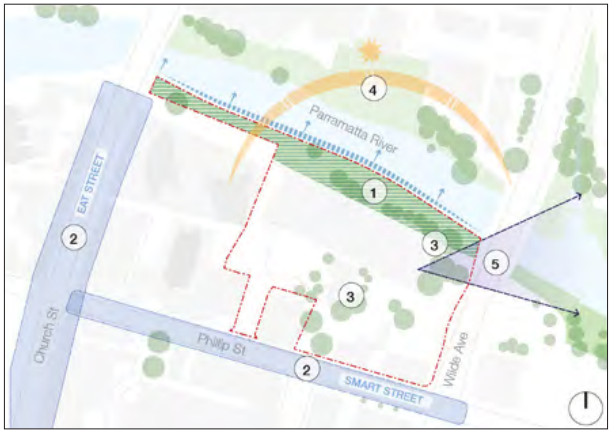
1. The site's location is well-connected, offering the opportunity to facilitate public and activate transport use within the Parramatta CBD.
2. Potential to facilitate a pedestrian connection across Parramatta River.
3. Opportunity to relate to future Civic Link, through a considered street interface and/or connection across Phillip Street.
4. Utilise established vehicular access points.
5. Retain and enhance existing river foreshore pedestrian and cycle path.

Built Form and Activation

1. Consider relationship to the Riverside Theatre, located across the river to the north-west, in order to establish the area as a cultural/arts precinct.
2. Opportunity to relate to the local character and cultural significance of the site.
3. Prioritise the public contribution of a museum, which offers civic, cultural and educational benefits to the community both locally and internationally.
4. Activate frontages along Phillip Street and Wilde Avenue through building use and articulation.
5. Ensure the Powerhouse Precinct engages with the river foreshore at its interface.

Public Domain and Environmental Conditions

1. Opportunity to provide an enhanced public space along the river foreshore, which actively engages with the river. This should be integrated with the Precinct activity, as well as the wider river foreshore upgrades and public domain network across the CBD.
2. Coordinate proposal with planned public domain upgrades to Church Street ('Eat Street') and Phillip Street ('Smart Street').
3. Consider possible retention of existing established trees.
4. Maximise solar amenity to public open space.
5. Opportunity to capture views of Parramatta River and green foreshore, particularly to the east of the site.



2.13 CONSTRAINTS

The following constraints are identified for the site under three key themes:

Movement and Access

1. Maintain existing access easement on site.
2. Consider existing vehicular routes and access points to site and adjacent properties.
3. Manage the access and movement requirements of various visitors to the site, including service vehicles, large school groups arriving by bus, private vehicle drop-offs, as well as pedestrians and cyclists.
4. Minimise impact on the effective traffic flow along key movement corridors within the site's vicinity.
5. Consider the existing limited north-south access across Parramatta River.

Built Form and Land Use

1. Manage interfaces with adjacent properties through adequate separation, orientation and treatment of built form.
2. Consider relationship to existing heritage items on site. This may be through reference and interpretation in new built form and public domain works.
3. Provide 25m minimum setback from Parramatta River.
4. Provide adequate separation from existing neighbouring built form.

Environmental Conditions

1. Manage flood risk to site and surrounds.
2. Consider significance of existing trees on the site.
3. Respond to the falling topography across the site.

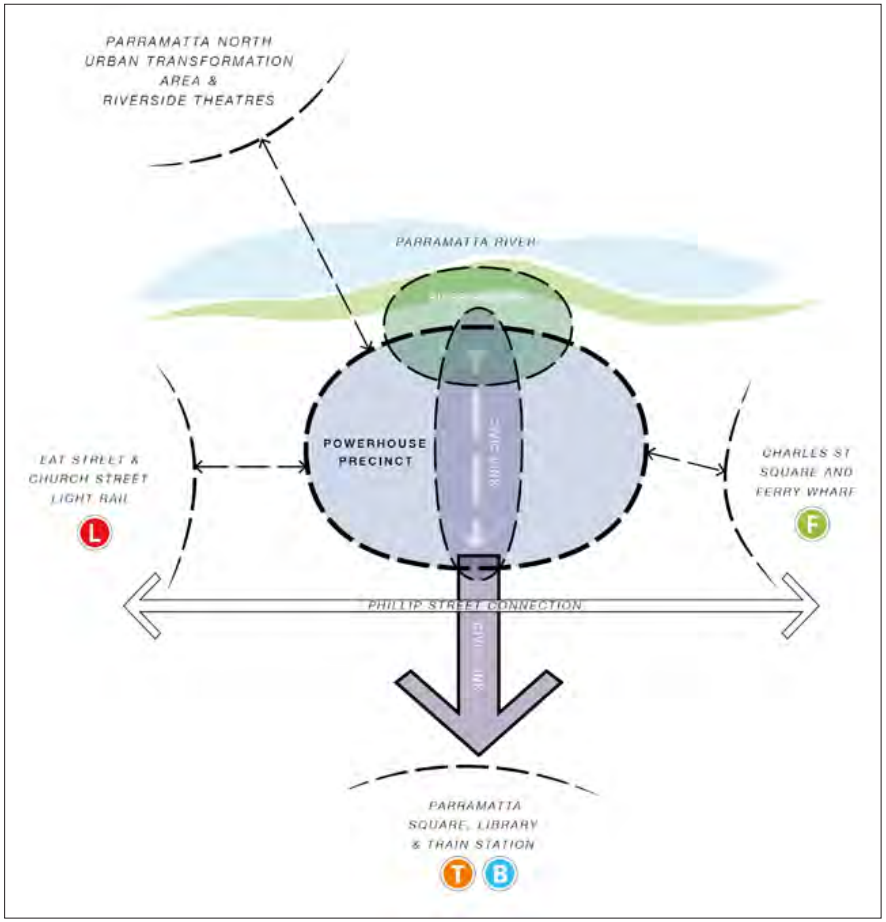
3. GUIDELINES

The Guidelines are a set of qualitative and quantitative criteria that outline the urban design assumptions, principles and opportunities of the Powerhouse Precinct

3.1 URBAN MOVES

There are a number of key moves which underpin the Powerhouse Precinct and should be embedded within any design response for the site.

1. Extend the Civic Link through the Powerhouse Precinct as a legible and generous pedestrian zone from the intersection of Horwood Place and Phillip Street to the river foreshore to draw the public through the site.
2. Create a permeable site with multiple entry points connected to adjacent public domain and community spaces to support increased patronage to the Precinct.
3. Allow all public domain spaces to be flexible for passive and active recreation and utilised to host a combined 10,000 person event within the precinct (inclusive of built form).
4. Where possible, incorporate an upper level public domain connection (approx. RL+7.5) between Lennox Street and Wilde Avenue through the precinct. This will connect through to the existing upper level connection to the site's west.
5. Support activation of the river foreshore through increased accessibility to low level spaces and the provision of pedestrian and cycle connections through to adjacent sites.



Urban Moves

T Train Station
L Light Rail Stop
B Bus Stop
F Ferry Wharf

Engaging and Vibrant

Establish the Powerhouse Precinct as a unique and dynamic attractor.

The Powerhouse Precinct will be an active and vibrant place, anchoring the Civic Link and providing a new and inviting interface to the Parramatta River. This vibrancy will complement and be supported by a range of new public domain spaces, public transport upgrades, community and cultural infrastructure planned for the city including Riverside Theatres, Charles Street Square, Parramatta Light Rail, Library and Square.

Flexible spaces for internal and external events and day-to-day active and passive recreation will be woven into the precinct supporting a safe and inclusive 24/7 precinct inviting for a range of users.

Parramasala (Source: Parramasala / Facebook)

Permeable and Embedded

Integrate the Powerhouse Precinct as part of a rich network of public domain and community spaces.

The Powerhouse Precinct will be an integral and embedded part of the city, integrated visually and physically into its fabric. Highly permeable, the public will be drawn to the precinct from multiple directions through the surrounding network of public domain and community spaces. Proposed public and private uses within the precinct will both complement and be supported by the future use of Civic Link, the Parramatta River Corridor, Eat Street and Charles Street Square.

New public domain spaces will also provide opportunities for new spaces supporting city-wide events.

Church Street (Source: MRC / Diana Snape)

Safe and Inclusive

Embed opportunities for diverse occupation of and engagement with the Precinct.

The success of the Powerhouse Precinct as a public project hinges on its ability to create safe and inclusive spaces both internal and external, which will attract a diverse range of people to the precinct.

Traditional barriers to use including limited physical accessibility will be reconsidered as part of the Precinct design. The Precinct will be universally accessible, visually permeable and supported by activation at ground. Retail and commercial spaces will be strategically engaged to provide opportunities for passive surveillance while the bulk of the public domain will be non-transactional, welcoming and inclusive.

Parramatta Park (Source: MRC / Diana Snape)

Inside and Out

Enhance opportunities to extend the activity, knowledge and Collection into the public domain.

The Powerhouse Precinct will be an integrated whole, with the public domain providing opportunities for engagement and learning throughout the site, in both ticketed and general use spaces. This will be curated through the design of the built form, public domain and programming to enhance the accessibility and inclusiveness of the Powerhouse.

This relationship between internal and external spaces will also reinforce the institution's relationship to place and a celebration of the site's unique setting and characteristics.

Whitney Museum, New York USA (Source: Renzo Piano / ArchDaily)

Connected to Place

Engaging with the unique characteristics of the site and its history.

> 'Given the site's rich and significant history from its pre-European environment, Aboriginal occupation through to being a central location in the development of Australia's second oldest city, built on the back of convicts, through to current buildings on site, the opportunities for meaningful interpretation throughout are endless'.
> (Curio Projects, Heritage Technical Appendix)

Prince Alfred Square (Source: MRC / Diana Snape)

Resilient

Ensure the precinct can survive, adapt and thrive well into the future.

Resilience principles will be embedded into every component of the Powerhouse Precinct to support its future and ongoing viability. This will support the project's capacity to deal with shocks and stresses – including unique environmental challenges, climate change, flooding and the changing nature of Parramatta CBD. A holistic approach to addressing the potential shocks and stresses the precinct may experence will support the delivery of a fully integrated design response, limiting potential operational costs and allowing the Precinct to evolve and adapt throughout its life.

The Powerhouse Precinct site from Wilde Avenue (Source: MRC / Diana Snape)

3.4 PUBLIC DOMAIN AND OPEN SPACE

Public domain and open space will be key components of the Powerhouse Precinct and support the capacity of the Museum to engage with the public, facilitate a range of events and exhibitions, and embed itself within the city. The Precinct should be physically and visually integrated into adjacent public domain spaces including Civic Link, Eat Street (Church Street) and the Parramatta River Corridor, including Charles Street Square. Generous, accessible and welcoming, public domain within the precinct will underscore the ambition of the NSW Government, the Museum and City of Parramatta to transform Parramatta into a world-class city and deliver their shared urban aspirations for the site. The city-wide vision will expand its capacity for the precinct to facilitate new experiences that will support the liveability of Parramatta CBD.

Public domain spaces will facilitate new connectivity across the site, supporting not only patronage of the Precinct but a new relationship with the Parramatta River. Accessible routes will connect upper level spaces along the site's edges, across the falling topography towards the foreshore. The use of the foreshore will be supported by a significant building setback, lower level active transport routes, spaces for gathering, shade, seating and infrastructure to promote the health of the river.

Connectivity will be supported by flexible public domain spaces to cater for day-to-day use and for events. In-built, it will allow spaces to transform to satisfy a range of different functional requirements. At the smaller scale day-to-day, external spaces should be able to support small Museum events, educational programs, passive/active recreation, gathering and retail spaces. At a large scale during special events, the precinct should be capable of hosting 10,000 person events through the use of all public domain spaces (including ground level built form) within the site on the ground plane.

The public domain will need to consider the flood-prone nature of the site and fully integrate flood resilience principles into its design. Flood mitigation and egress infrastructure should not be single-use but part of the use of the site day-to-day.

Principles

- Embed physical and visual permeability in the design of the precinct and frame the public domain as an extension of the Powerhouse.
- Design connections through the precinct that allow for intuitive wayfinding without the need for signage overlays.
- Create a public domain lighting strategy that is contextually specific to both the Powerhouse and the city, that is scalable for events.
- Provide a diversity of spaces and landscape character across the precinct to attract a range of people.
- Utilise the project as an opportunity to reorient the city towards the river through the provision of quality spaces for active and passive recreation, events and infrastructure to promote the health of the river.
- Design the public domain to celebrate the unique features of the site and fully integrate solutions that respond to site specific conditions related to flooding, heritage and topography.
- **Civic Link**: Extend the Civic Link through the precinct as a pedestrian connection from the intersection of Horwood Place and Phillip Street to the river foreshore to draw the public through the site – **this link can be interpreted across the site and may not be open-air or a direct north-south connection.**
- **Outdoor Presentation Space**: Ensure the precinct is capable of hosting 10,000 person events through the use of all public domain spaces and built form within the site on the ground plane.
- **Powerline**: Provide a new pedestrian zone running east/west across the site extending existing upper level connections from Church Street and Lennox Bridge to Wilde Avenue.

Ankenparken, Malmo Sweden
(Source: SLA/Stig L. Andersson)

Southbank, Brisbane
(Source: Designboom/John Gollings)

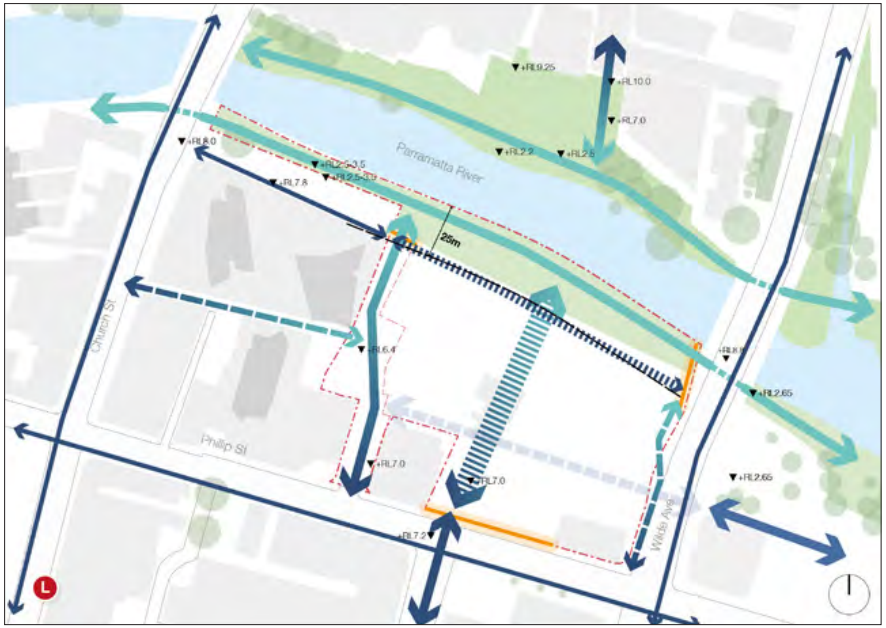
The Spice Garden, Parramatta Lanes Festival
(Source: City of Parramatta)

Dee and Charles Wyly Theatre, Dallas USA
(Source: Dallas Arts District)

3.4 PUBLIC DOMAIN AND OPEN SPACE (continued)

Guidelines

— Design the site to contribute to a legible network of public spaces across the city, especially along the river and the Civic Link.
— Provide active edges to public domain spaces to encourage patronage, diversity public space typologies and passive surveillance opportunities.
— Develop landscapes to feature native species, low-water planting and significant shading to mitigate the heat island effect.
— Design the public domain to support the functionality of the Museum including the provision of spaces for programmed and un-programmed experiences and breakout spaces.
— Create visual links into and across the site to support wayfinding, activation and provide opportunities for passive surveillance.
— Preference landscape, planting, furniture, and/or dynamic topography to fulfil requirements for hostile vehicle mitigation at entry points to the site.
— Provide significant non-transactional spaces to support the accessibility and inclusiveness of the Precinct.
— Provide opportunities for interpretation and public art to be curated as part of the Powerhouse's ongoing program rather than built and static elements.
— Manage the topography of the site to ensure a legible connection between any upper level public domain and the river foreshore.



Public Domain and Open Space

Site Boundary
River Foreshore Setback
Light Rail Stop
High Level Connection
Low Level Connection
Low Level Connection underneath bridges
Connection to be provided, alignment subject to detailed design
Potential Connection
Hostile Vehicle Mitigation

3.5 ACCESS AND MOVEMENT

The extension of key city-scale movement routes through the site will be a significant opportunity to underpin the activation and vibrancy of the Powerhouse Precinct. This connectivity supported by public domain spaces will integrate the precinct into the city and aid in establishing the Powerhouse as a key cultural destination for national and international visitors. Without public parking provision, the Powerhouse Precinct will need to ensure simple and legible connections to public transport, supported through wayfinding.

Topographic level changes across the site will be a significant challenge to delivering universal accessibility (compliant to AS1428), routes for vehicular servicing, emergency vehicle access and flood/emergency egress.

The Civic Link will be extended through the precinct as a as some form of pedestrian connection from the intersection of Horwood Place and Phillip Street to the river foreshore, bringing the public into the heart of the precinct from Parramatta Train Station and Square. This connection may be interpreted in a variety of ways and may not be open-air or a direct link across the site.

Low-level active transport routes along the river foreshore will connect the precinct to Eat Street (Church Street) and Parramatta Park to the west, and Charles Street Square and Parramatta Wharf to the east. This is a key opportunity to support the objectives of the Parramatta City River Strategy by delivering active spaces along the river and supporting the future use of the river for swimming and small watercraft.

Existing site access points are located off Phillip Street down Dirrabarri Lane and under the Wilde Street Bridge through George Khattar Lane. A single existing vehicular egress point is located on the east of the site onto Wilde Street with a left turn out, heading northbound.

The Museum has a series of specific vehicular movements that should be considered as part of the design of the site. These include exhibition loading and removal, waste removal, special event loading and bus drop-off.

Principles

- Support the use of the Powerhouse Precinct through the strategic incorporation of pedestrian and active transport flows to, from and within the site.
- Embed physical and visual permeability into the design of the precinct.
- **Civic Link**: Extend the Civic Link through the precinct as a legible and generous pedestrian zone from the intersection of Horwood Place and Phillip Street to the river foreshore to draw the public through the site.
- **Powerline**: Provide a new pedestrian zone running east/west across the site extending existing upper level connections from Church Street and Lennox Bridge to Wilde Avenue.

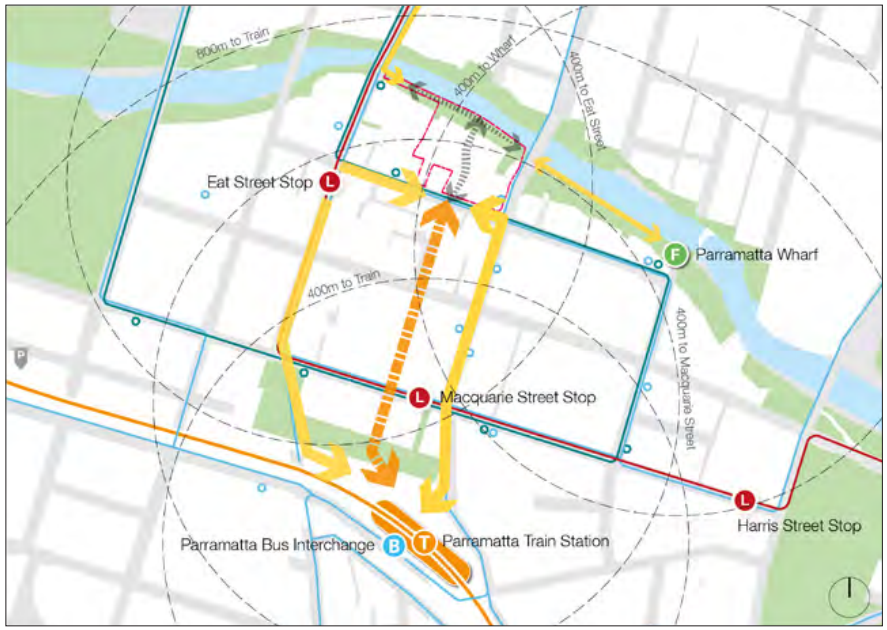
Guidelines

- Assume George Khattar Lane and the car parking located under the Wilde St Bridge remains, providing service vehicle parking and emergency vehicle access to the river foreshore.
- Deliver lower level foreshore cycling and pedestrian routes which connect through to existing paths in the east and to Church Street in the west. This should consider the future delivery of a western link through the Parramatta Park.
- Engage with views and ensure legibility through clear, permeable connections that encourage movement through the site.
- Avoid creating conflict in major movement routes in order to support safety and functionality requirements within the site. Consideration should be given to the movement of individual and group Museum visitors, front and back of house uses and the general public.
- Ensure any flood egress routes are fully integrated into the daily use of the site and serve a purpose day-to-day.
- Ensure that universal accessibility is embedded in the design of all public domain spaces and connections, as per AS1428: Design for access and mobility.
- Explore innovative servicing solutions for the Museum that consider the proposed frequency of usage or replacement of items.
- Key site entry points are accessed from Phillip Street.
- Explore opportunities to deliver an east/west connection between Dirrabarri Lane and Wilde Avenue in order to support the long-term delivery of an upper level pedestrian connection between Church Street and Parramatta Wharf/Charles Street Square.
- Basement servicing solutions will not be considered due to the flood-prone nature of the site. George Khattar Lane is not appropriate as the key servicing route to the Museum due to the 3.5m clearance under the Wilde Street Bridge.
- Seek opportunities to integrate wayfinding into the area surrounding the site, centred on decision-making points from transport hubs surrounding the Museum.

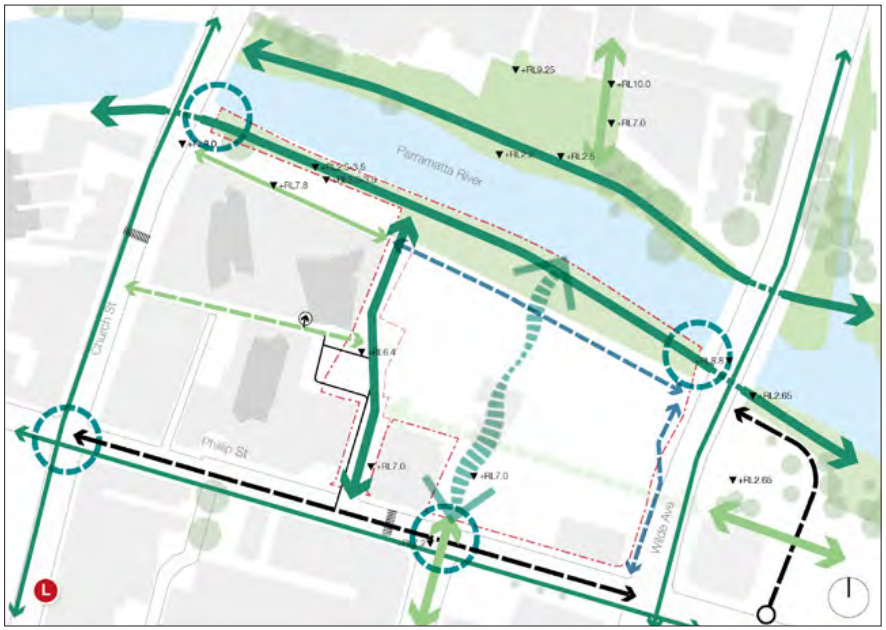
LightPathAKL, Auckland, New Zealand
(Source: Russ Flatt/Landlab)

Las Ramblas, Barcelona, Spain

Pitt Street Mall, Sydney
(Source:Brett Boardman/Tony Caro Architecture)



Access and Movement – Parramatta CBD



Access and Movement – The Site

- Site Boundary
- Train Line
- Train Station
- Light Rail
- Light Rail Stop
- Bus Routes
- Bus Interchange
- Bus Stops
- Ferry Wharf
- Shuttle Bus Route
- Shuttle Bus Stops
- Existing Connections to the Site
- Future Connections to the Museum (Pedestrian)
- Internal Site Connections

- Site Boundary
- Light Rail Stop
- Vehicular Connection
- Vehicular Access to 330 Church Street
- Pedestrian Crossing
- Existing Pedestrian/Cycle Connection
- Existing Pedestrian Connection
- Low Level Connection underneath bridges
- Connection to be provided, alignment subject to design concepts
- Potential Connection - Within Site Boundary
- Potential Connection - Outside Site Boundary
- Decision Point

3.6 BUILT FORM AND ARCHITECTURAL EXPRESSION

Built form within the Powerhouse Precinct will support physical and visual permeability through the site and the embedding of the Museum within the fine-grain of the city. It should be designed to be read from multiple distances and in the round, highlighting the precinct as a destination from surrounding views. The precinct's built form should act as an integrated piece of wayfinding that capitalises upon its prominent location on the river and as the northern anchor of the Civic Link. It should be a demonstration of design excellence in the whole and in each component part.

The precinct will become part of a network of civic and cultural buildings including Parramatta Library, Western Sydney Stadium and the Riverside Theatres which will punctuate the city fabric and catalyse activity across the city. Like those buildings, the Powerhouse Precinct will be complemented by a public domain setting.

At ground, the precinct built form should provide an engaging human-scaled interface that integrates opportunities for a relationships between the public domain and internal Museum spaces . Flexibility built into the design of the public domain and building facade will allow for this relationship to be shaped based on the program of the precinct.

The wind and overshadowing impact of any proposed built form upon surrounding development and public domain should be considered, especially Civic Link. Considering the uninhibited solar access to the river foreshore, built form could be utilised to provide shaded spaces to dwell within the precinct.

The choice of materiality should consider the site's north facing orientation. The potential reflection and glare from the building's facade on residential uses to the north and the surrounding public domain should be considered.

Principles

— Design a landmark precinct that is both an extension of the city's fine grain as well as visually distinct and iconic.
— Utilise built form to draw the public into the precinct and catalyse activation.

Requirements

— Provide a minimum 25m foreshore building setback. This zone will be dedicated to landscaped open space.
— No built form should be located within or above the easement in the western portion of the sit.
— Designs must prioritise the required heights and floor areas of the presentation spaces to deliver column-free spaces with an architectural resolution that reduces the impact of their bulk.

SFMOMA, San Francisco USA
(Source: Henrik Kam)

Whitney Museum, New York USA
(Source: Karin Jobst / ArchDaily)

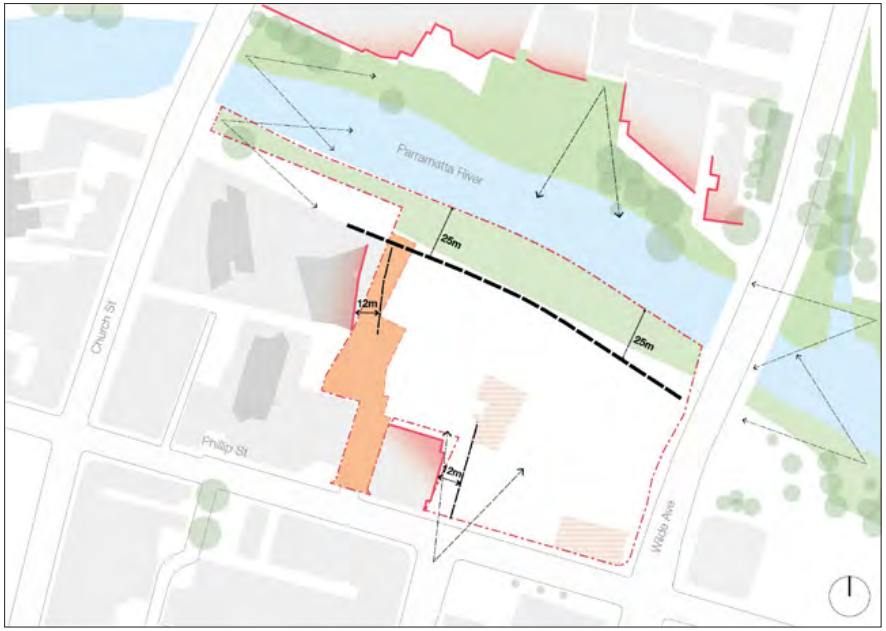
Centre Pompidou, Paris France
(Source: Jean-Pierre Dalbera / ArchPaper)

The Shed Arts Center, New York USA
(Source: Scott Lynch / Gothamist)

3.6 BUILT FORM AND ARCHITECTURAL EXPRESSION
(continued)

Guidelines

— Take advantage of key views towards and across the site through the location and orientation of built form especially from key access routes into the city along Lennox and Wilde Street bridges, as well as from public domain linkages along the foreshore and down the future Civic Link.
— Explore the potential of the building to act as a piece of integrated wayfinding, considering views towards the site down Civic Link, the river foreshore and existing bridges over Parramatta River.
— Provide active edges to public domain spaces to encourage patronage, diverse public space typologies and passive surveillance opportunities.
— Consider all faces of the Museum in its design including the roof and underside (if required).
— Minimise the visual impact of materials, including reflectivity, high gloss materials or light spill on surrounding residential areas.
— Engage with the opportunity to use innovative materials that contribute to the distinctive design of the Museum and reinforce its unique characteristics.
— Explore opportunities for material choices and facade design to draw from the cultural and heritage significance of the site and surrounds.
— Design the building facade to be understood and interpreted from a distance and up close, considering both the visual and tactile qualities of the material.
— Explore opportunities for the Museum to take advantage of local and regional views down the Parramatta River corridor and towards North Parramatta.
— Consider the use of recycled, light or reflective materials and materials of low embodied energy to support city and Museum sustainability goals.
— Seek opportunities for the built form and materiality to enhance the functionality of the Museum and aid in the maintenance of the Museum's internal environment. This may include the selection of material to contribute to the building's thermal mass and communication of Museum uses externally.
— Engage with the unique challenges and opportunities presented by the flood-affected nature and topography of the site.



Built Form and Architectural Expression

3.7 FLOODING

Flooding
The site is affected by the 5 to 100 year Average Recurrence Interval (ARI) flood events and the Probable Maximum Flood (PMF) level. It is crucial that a flood resilience approach is embedded throughout the project to ensure that there is no adverse impact of flooding to the site and to adjacent properties.

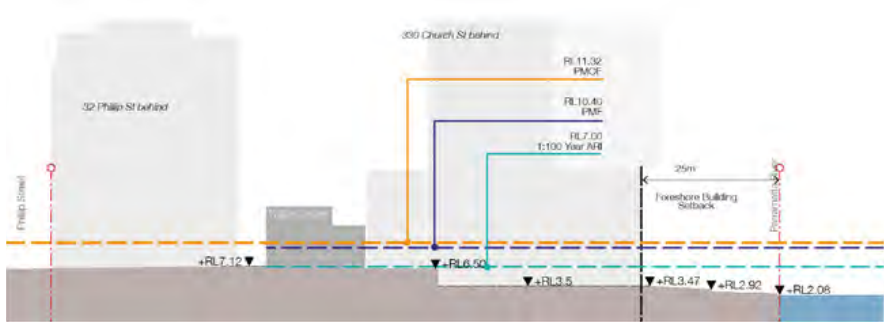
The development will provide accessible routes to points of refuge and seek innovative design solutions which increase the site's capacity to recover after a flood event. Key to success will be the selection of appropriate materials and landscaping alongside passive and non-mechanical flood mitigation solutions. Flood mitigation and egress infrastructure should not be single-use, but part of the site's day-to-day use. The site will be responsible for facilitating egress routes from the river foreshore and other flood prone areas of the site to internal refuge areas of the new building above the PMOF level. Mechanical flood mitigation solutions including flood gates should be utilised in a targeted manner to address specific scenarios with the project. The avoidance of mechanical flood mitigation solutions within the site will reduce the site's operation and maintenance requirements as well as potential points of failure should the site experience a flood event.

The existing multi-storey car park has been designed to allow for water ingress in the case of flood. A key constraint for the project will be to ensure that there is no adverse flood affectation associated with reducing this hydraulic flood capacity, as a result of the development.

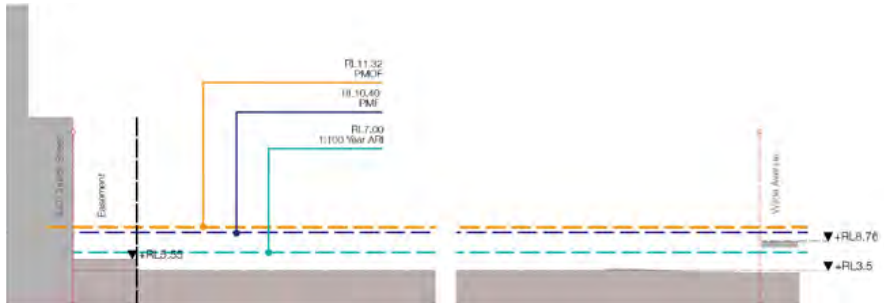
The development must ensure that the existing overland flow to the west of the site is maintained, with a minimum 12m width. This sits predominantly within the existing easement on the west of the site.

Principles
- Integrate flood resilience principles throughout the project.
- Locate building and design topography in order to not increase flood affectation elsewhere having regard to:
  - loss of storage.
  - changes in flood levels, flows and velocities caused by alterations to flood flows.
  - the cumulate impact of multiple potential development in the vicinity.

Guidelines
- Design all habitable spaces to 1:100 year ARI flood plus freeboard - at RL+7.5 and above.
- Consider the impact of northern extent of the precinct to ensure hydraulic storage capacity is maintained on the site.
- Any development within the storage capacity zone would be required to withstand forces of floodwater, debris and buoyancy up to the 1:100 year ARI, whilst not impeding hydraulic storage capacity.
- Design the public domain to fully integrate flood mitigation, egress routes to points of refuge. Elements should be designed to be multi-functional and part of the site's day-to-day use.
- Seek innovative design solutions and appropriate material and landscaping selection which increase the site's capacity to recover after a flood event.
- Consider innovative solutions to create activation at levels below the 1:100 year ARI flood plus freeboard where habitable spaces cannot be located at RL+7.5 and below.
- Consider water sensitive urban design (WSUD) principles public domain design to assist in managing water flows and treatment of stormwater.

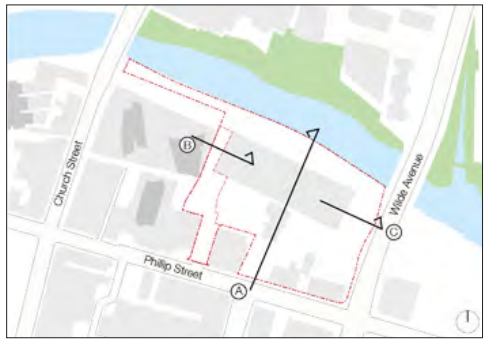


Section A



Section B

Section C



Section Plan

Site Boundary
1:100 Year ARI Flood
Probable Maximum Flood (PMF)
Probable Maximum Overland Flow (PMOF)
Building Setback/Separation

3.8 HERITAGE AND CULTURE

The Powerhouse Precinct will need to consider the complex layering of the site's Indigenous and non-Indigenous heritage, the history of the Museum, the cultural significance of its Collection and the evolving nature of Parramatta as a community. The Precinct development presents a significant opportunity to acknowledge and engage with the past while also encouraging the diverse groups to invest in the city's cultural future. Heritage interpretation and storytelling will be delivered through the Powerhouse's ongoing dynamic exhibition program.

Potential interpretative themes to explore include:

— The natural environment prior to European occupation, including flora and fauna.
— Custodianship of Parramatta by the Traditional Land Owners, the Burramattagal clan of the Darug people and the history of displacement and loss as a result of European Settlement.
— Ongoing Aboriginal cultural practices in Parramatta today.
— Story of Sydney's second city and the significance of the Parramatta River, surrounding land in creating the second city.
— History of the site's development over time.

Principles

— Respect the cultural and heritage significance of the site, surrounds and the Museum by embedding interpretations of the site's rich history into the design of the Museum and public domain.

Guidelines

— Consider how visual and physical linkages and public domain spaces between the Powerhouse Precinct and Riverside Theatres can be utilised to support the vitality of the precinct as a whole.

Heritage and Culture

Site Boundary
Easement
Foreshore Building Setback
100 year ARI Flood
Heritage Item
Willow Grove Heritage Setting
Archaeological Management Unit (AMU) 3082
Archaeological Management Unit (AMU) 3092
Archaeological Management Unit (AMU) 2882
Landscaped Open Space
Existing Trees

3.9 SUMMARY

The establishment of the Powerhouse Precinct at Parramatta is the most important transformation in history of the institution and its city. It signifies a major shift in how Sydney thinks about itself, its culture and its communities.

The Powerhouse Precinct will deliver an integrated outcome that embeds the urban aspirations for the site shared by the Museum and City of Parramatta. The overlaying of internal and external Powerhouse spaces, Parramatta Civic Link and the Parramatta River Strategy will provide opportunities for vibrancy, activation and increased engagement from the public.

The Powerhouse Precinct will be an integral and embedded part of the city, integrated visually and physically into its fabric. Highly permeable, the public will be drawn to the precinct from multiple directions through the surrounding network of public domain and community spaces. Proposed uses within the Precinct will both complement and be supported by the future use of Civic Link, the Parramatta River Corridor, Eat Street and Charles Street Square.

A successful design for the Powerhouse Precinct will fulfil the programmatic and functional requirements of the Powerhouse in an environmentally sensitive way, addressing the site-specific challenges and celebrating opportunities of the site.

Parramatta CBD (Source: Mark Merton Photography)

4. APPENDIX: STRATEGIC REVIEW

The Appendix features a strategic review of state and local level strategies, frameworks and policies which relate to the project site. Although many of these strategies were completed prior to the announcement of the Powerhouse Precinct in Parramatta, these documents provide an understanding of future infrastructure, linkages and projects within proximity of the site. This review provides an understanding of where the Powerhouse Precinct could assist in and shape the delivery of high level aspirations for the city.

4.1 STRATEGIC REVIEW OVERVIEW

In developing the urban design guidelines for the subject site, the strategic context should be a key consideration. This is to ensure that the proposed urban design framework is consistent with the aspirations of other pipeline projects and strategies and aligns with the overall vision for the area.

A number of external documents have been reviewed and their key strategic moves and principles distilled to inform the visioning and guidelines components of this report. While not all of these documents were created with consideration of the Museum, aspects of the content are still considered to be relevant to the future development of the site.

The following documents have been included in the strategic review:

1. **Greater Sydney Region Plan: A Metropolis of Three Cities, Greater Sydney Commission**
   https://gsc-public-1.s3-ap-southeast-2.amazonaws.com/s3fs-public/greater-sydney-region-plan-0618_0.pdf
2. **Central City District Plan, Greater Sydney Commission**
   Accessed: https://gsc-public-1.s3-ap-southeast-2.amazonaws.com/s3fs-public/central-district-plan-0318_0.pdf
3. **Greater Parramatta and the Olympic Peninsula, Greater Sydney Commission**
   https://gsc-public-1.s3.amazonaws.com/s3fs-public/2016_10_31_gpop_vision.pdf
4. **Parramatta City River Strategy: Design and Activation Plan, McGregor Coxall**
   https://www.cityofparramatta.nsw.gov.au/sites/council/files/2016-11/River%20City%20Strategy%20Volume%2001%20Report%20Part1.pdf
5. **Civic Link Framework Plan, ASPECT Studios and SJB**
   https://www.cityofparramatta.nsw.gov.au/sites/council/files/2017-09/Civic%20Link%20Framework%20Plan%202017%20Full%20Report.pdf
6. **Parramatta Strategic Framework, PCC, DPE, GANSW and Terroir**
   https://www.dropbox.com/s/0b3nbsp4c9zlisr/PSF%20v1.0.pdf?dl=0
7. **Culture and Our City, City of Parramatta**
   https://www.cityofparramatta.nsw.gov.au/sites/council/files/2017-07/Culture%20and%20Our%20City%20-%20A%20Cultural%20Plan%20for%20Parramatta%27s%20CBD%202017%20-%202022%20.pdf
8. **Parramatta Bike Plan 2017–2037, Change Collective, CrowdSpot and Institute**
   https://www.cityofparramatta.nsw.gov.au/sites/council/files/inline-files/Draft%20Bike%20Plan.pdf
9. **Parramatta CBD Pedestrian Strategy, Cardno**
   https://www.cityofparramatta.nsw.gov.au/sites/council/files/inline-files/CBD%20Pedestrian%20Strategy.pdf
10. **Public Domain Guidelines, City of Parramatta**
    https://www.cityofparramatta.nsw.gov.au/sites/council/files/2017-08/PDG%202017_Full%20Document%20%28low%20res%29_3.pdf
11. **Charles Street Square Strategy and Urban Design Study, Hassell**
    https://www.cityofparramatta.nsw.gov.au/sites/council/files/2018-11/Charles%20Street%20Square%20Strategy_2017.pdf

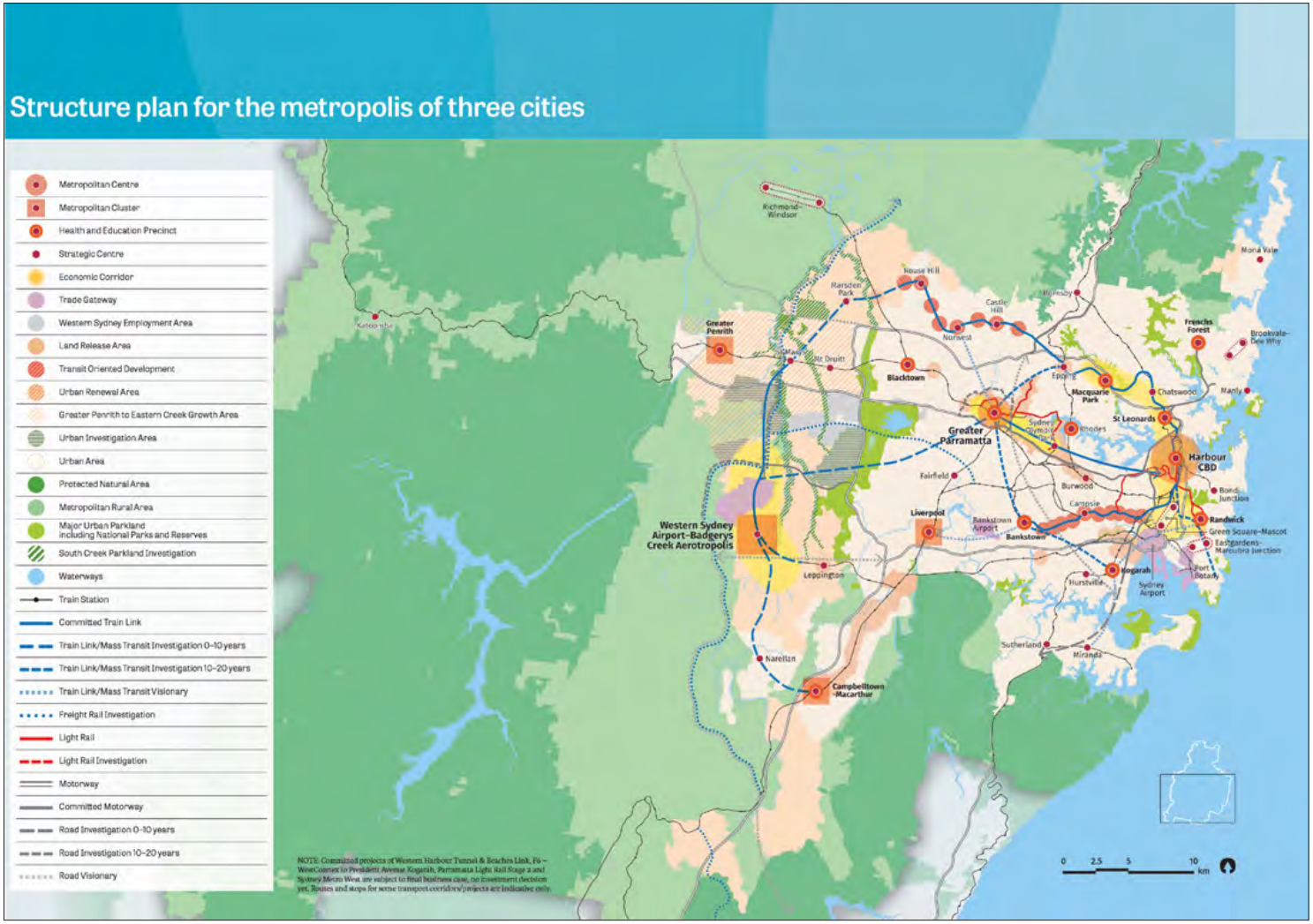
4.2 THE GREATER SYDNEY REGION PLAN: A METROPOLIS OF THREE CITIES

Relationship of Document to the Powerhouse Precinct
This document was prepared at a broader strategic level and does not explicitly reference the subject site. However, it is important to recognise the significance of the site's strategic position within the Parramatta CBD, as it continues to evolve into Sydney's second CBD.

The Greater Sydney Region Plan – A Metropolis of Three Cities was released by the Greater Sydney Commission (GSC) in 2018. The Plan provides high level strategic guidance for the development of Greater Sydney to 2056. It is based on a vision of three cities – the 'Eastern Harbour City', 'Central River City' and 'Western Parkland City' – whereby people can access jobs and services in their nearest metropolitan city within 30 minutes, by public transport.

The subject site is located within the 'Central River City', the population of which is projected to increase from 1.3 million people to 1.7 million over the next 20 years. This region is focused on the Greater Parramatta Growth Area (GPGA), which encompasses the Parramatta CBD, Parramatta North renewal areas, Westmead and Parramatta Park.

Greater Parramatta's role as a metropolitan centre is entering a period of transformation, driven by an unprecedented level of government and institutional investments into health, education, recreation, culture, entertainment and amenity improvements. Any development within this region should respond to a future context and align with the Plan's wider vision for Parramatta and Greater Sydney.



'Structure Plan for the Metropolis of Three Cities'
Greater Sydney Region Plan, GSC, p 7

4.3 CENTRAL CITY DISTRICT PLAN

Relationship of Document to the Powerhouse Precinct
Although this document does not make explicit reference to the subject site, the aspirations for the wider district, particularly in relation to cultural and public domain overlays, should be taken into consideration when addressing the site. The relocation of the Powerhouse to Parramatta supports the Plan's objectives for population growth and the provision of key public infrastructure within the Central City District.

In conjunction with the Greater Sydney Region Plan, the GSC released five District Plans, as a guide for implementing the Region Plan at a district level. The purpose of the District Plans is to manage development growth alongside economic, social and environmental matters over a 20 year period (2018-2038), in order to achieve the 40-year vision put forward in the Greater Sydney Region Plan. The District Plans are a bridge between regional and local planning, and will inform local environmental plans, community strategic plans and the assessment of planning proposals.

The subject site is located within the Central City District Plan, which extends across the Greater Parramatta area. Anticipated as the fastest growing District, the Plan identifies demand for an additional 207,500 dwellings and a target of 55,000 jobs to be provided across the area by 2036. The Powerhouse Precinct supports these growth targets through the provision of key public infrastructure, which contributes to an enhanced network of cultural destinations.

'Central City District Structure Plan' – Central City District Plan, GSC, p 8

4.4 PARRAMATTA STRATEGIC FRAMEWORK

Relationship of Document to the Powerhouse Precinct
This analysis and strategic vision presented within this document, particularly in relation to the cultural and civic framework of the Parramatta CBD, has played a key role in determining the final location of the Powerhouse Precinct site. The site's location is identified as an opportunity for cultural activity and activation of the public realm.

The Parramatta Strategic Framework was prepared in 2016 by Infrastructure NSW, The Office of the Government Architect (GANSW), architectural firm Terroir, City of Parramtta (CoP) and the Department of Planning and Environment (DPE). The purpose of the document was to develop a framework, focusing primarily on strategic considerations, to inform decisions regarding the delivery and location of major projects within the Parramatta CBD.

The relocation of the Powerhouse to the Parramatta CBD is identified as a major project for enhancing the provision of cultural and recreational sites in the area. The project is intended to support the area's planned growth and serve as an anchor for the Parramatta Cultural Precinct. The analysis, principles and criteria of values that form the Framework confirm the suitability of the chosen site. This Framework is also helpful in understanding the future role and objectives for the site, envisioned within its broader strategic context.

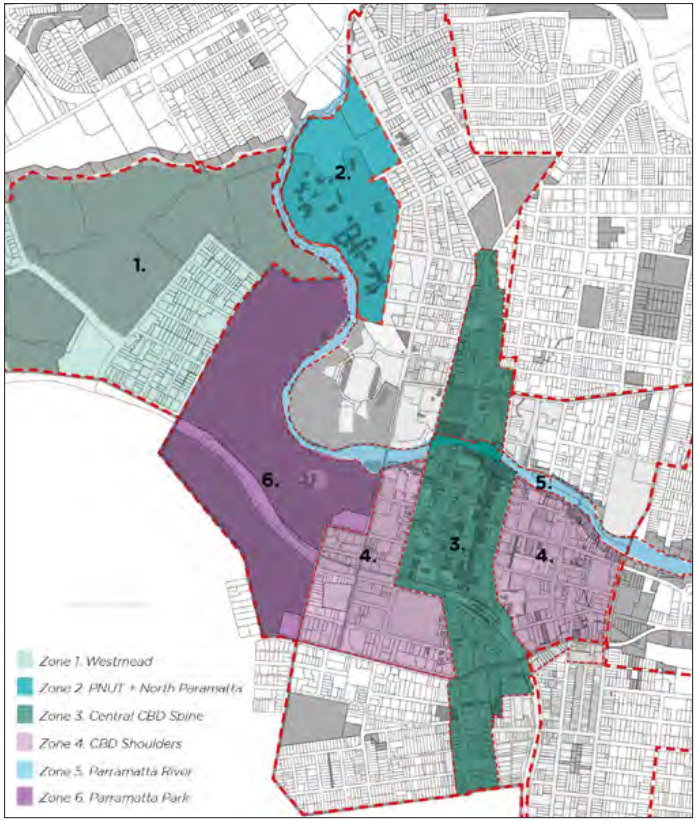
The prominence of the subject site is highlighted in the 'Zone Character' diagram (right), in which it is identified within the 'Central CBD Spine'. This zone is described as:

> '... the focus of activation and agglomeration of key public facilities that can work to reinforce the activation of the city centre and provide amenity where the densest population lives and works'.

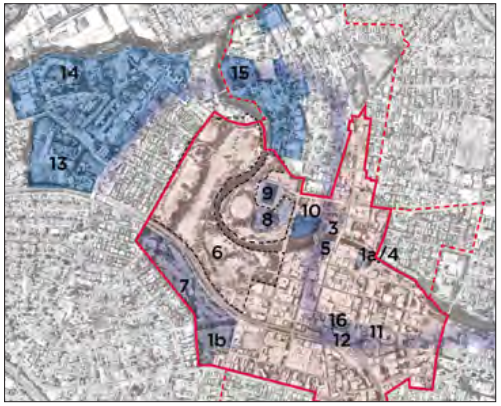
Within this zone, improved north-south connectivity across Parramatta River is also identified as a key objective, enhancing the CBD's character as an active, walkable centre. It is also recommended to locate future major cultural attractors within the established network of heritage, cultural, retail and dining attractors, which are largely focused within the zone identified as the Central CBD Spine.

In addition, the Framework presents a number of principles in relation to open space and the riverbank foreshore area. These principles aim to preserve and enhance the network of open space, with an emphasis on providing active recreation and destination spaces along the central spine running north to south through the CBD.

Parramatta CBD Cultural Attractors– Parramatta Strategic Framework, p 51



Zone Character – Parramatta Strategic Framework, p 67



4.5 GREATER PARRAMATTA AND THE OLYMPIC PENINSULA (GPOP)

Relationship of Document to the Powerhouse Precinct
This document does not make explicit reference the subject site. The site's strategic location within the GPOP corridor is highlighted as an opportunity to provide a well-connected, active cultural and civic anchor. The Strategy promotes future development that contributes to the revitalisation of the Parramatta River Foreshore and outlines cultural and economic aspirations for the Parramatta CBD.

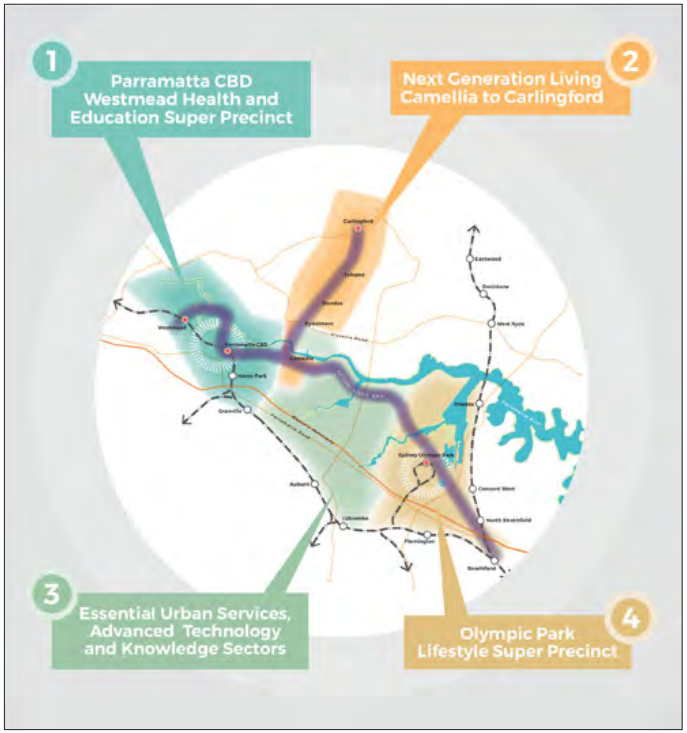
In October 2016, the GSC released its vision for the Greater Parramatta and Olympic Peninsula (GPOP) corridor, extending from Westmead to Olympic Park.

GPOP comprises four distinct quarters linked by the Parramatta River and the Parramatta Light Rail. The future Sydney Metro West line will also enhance accessibility within the GPOP, with more efficient public transport connectivity between Greater Parramatta, the Harbour CBD, The Bays Precinct and Sydney Olympic Park.

The site is located within the 'Parramatta CBD, Westmead Health and Education Super Precinct' (1). This 'Super Precinct' is envisioned as a 'dynamic combination of commercial core, civic heart, health, education and research hub' (p 30) and will serve as GPOP's westernmost economic anchor.

One of the primary goals identified for this precinct is the revitalisation of the Parramatta River foreshore area and the promotion of future development, which enhances civic activity within the precinct.

GPOP Location Plan – Greater Parramatta and Olympic Peninsula Vision, GSC, p 5



Four Precincts within GPOP – Greater Parramatta and Olympic Peninsula Vision, GSC, p 7

4.6 PARRAMATTA CITY RIVER STRATEGY – DESIGN AND ACTIVATION PLAN

Relationship of Document to the Powerhouse Precinct
This document was developed prior to the selection of the Powerhouse Precinct site. The Strategy highlights a significant public domain offering on the Powerhouse site, including a passage connecting Phillip Street to the foreshore.

The Parramatta City River Strategy was completed in 2015 by McGregor Coxall on behalf of the City of Parramatta Council (CoP), outlines the intent behind public domain and development along the Parramatta at the northern end of the CBD:

> 'The plan proposes a world class public domain and high quality collection of new building that are seamlessly knitted together be a dense network of accessible and active spaces'. (Parramatta City River Strategy, p 6)

The plan breaks down the corridor into 4 distinctive river quarters; the site is located within City Quarter West.

The plan highlights for the subject site:

Activation
- Active edges around buildings located on the site to activate the city and river at ground level.
- Water activation and quality improvements allowing Parramatta River to be access and utilised by paddle boats, kayaks, outdoor cinemas and a multi-functional water square.

Built Form and Structures
- Towers are indicatively shown along the River Square with existing commercial development retained along Phillip Street.

Access and Egress
- A lower level riverside corridor which facilitates pedestrian and cycle movement.
- Pedestrian routes across the site providing connections between Phillip St, Church Street, sites to the east and the River foreshore.
- Major level access nodes through the site allowing pedestrians to equitably traverse level changes through to the foreshore.
- Vehicular access points off Philip Street.

Landscape
- Hardscape at upper levels.
- Pedestrian Plaza, which would include high quality plaza spaces located along the river corridor ensuring adequate public space for the local community, visitors and workers.
- A combination of river terraces, hardscape, soft landscaping and pedestrian plazas at a lower level, adjacent to the river.

Environmental Initiatives
- Potential to supply Water Square with treated flows from the river.

Lighting
- Establish lighting hierarchy to differentiate major night time destinations including the River Square
- Consider a lighting scheme resilient to flooding and fit for purpose.
- Use lighting to differentiate major night time corridors and connection zones including the extension of a movement corridor through the site connecting Phillip Street and the river foreshore.

This plan was completed prior to the NSW Government announcing the establishment of a new Museum on the subject site.

Parramatta City River Strategy – Vol 1 Excerpt (p 6–7)

1. Kings School
2. Justice Precinct
3. Riverside Theatre – new Riverside Theatres providing a variety of active retail and cafe uses. A Water Terrace would also support a range of outdoor cultural events
4. Marsden Street Weir
5. Altitude Meriton
6. Meriton Serviced Apartments
7. GE Building
8. Riverside Terrace – would be an accessible and usable public space catering for the day user and event goer. An upper level and lower level terrace would accommodate markets and other temporary initiatives
9. River Square
10. Willow Grove
11. Barry Wilde Bridge – an upper and lower level bridge crossing would be designed to allow for pedestrian and cycle movement across the River alongside boat movement under the bridges
12. City Beach
13. North Bank Terrace
14. Charles Street Weir
15. Escarpment Boardwalk
16. Parramatta Quay

4.7 CIVIC LINK FRAMEWORK PLAN

Relationship of Document to the Powerhouse Precinct
This framework located the Museum as the northern anchor of the future Civic Link, however its functional, and spatial requirements have not been considered. An indicative footprint is shown.

The Civic Link Framework Plan completed in 2017 by ASPECT Studios and SJB on behalf of CoP outlines the intent behind a public space connecting Parramatta Square, Station and River through the heart of the CBD. As outlined within the plan, 'the aspirations for the Link is needed to pro-actively manage and respond to the high change profile stimulated by increased development, new public transport infrastructure, city growth and demand for attractive public spaces'.

The site is located at the northern end of the Civic Link study area and indicated to deliver the River Link, a critical connection between the Civic Link and the River Precinct.

Strategically, the site is highlighted to deliver:
- Improved pedestrian and cycle connections along the river foreshore.
- Development of the Museum on Riverbank to align with Civic Link Connections.
- Visual continuity/integration of Civic Link across major streets and termination at key public spaces.
- Pedestrianised zone with paths and a shared cycle path from Philip Street through to the River foreshore.
- A shared zone east/west across the site from Dirabarri Lane to Wilde Ave to provide servicing and emergency vehicle access to development on-site.
- Mechanical bollards along the Phillip Street entry.
- Retention and revitalisation of heritage garden alongside a program of temporary overlays.

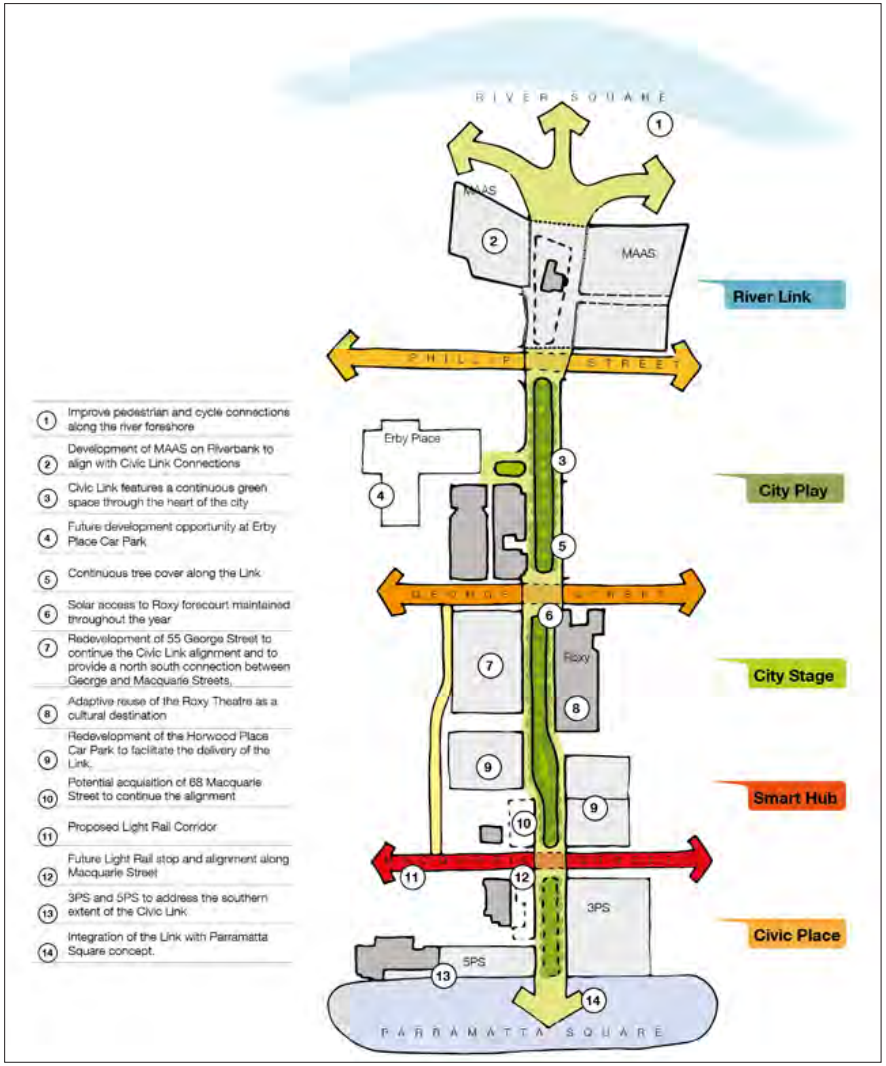
Adjacent to the site a signalised crossing is earmarked to be delivered at the intersection of the link and Phillip Street, facilitating a continuous pedestrian linkage from Parramatta Square and station through to the River.

The framework also describes the future character of the River Link within the subject site. The plan notes:

> 'The River Link block represents a critical connection between the Link and the proposed major event space at River Square, through the proposed Museum of Applied Arts and Sciences. ... Views to the river are to be framed and celebrated by a generous public space that can accommodate major events and celebrations. As with "Square On", the role of River Link as a gateway and transition zone should be reflected in materiality and palette choices'.

Potential design ideas proposed for the site include:
- Create a seamless transition between the Civic Link and River Precinct, reinforced by expanded vistas and connections.
- Celebrate the cultural significance of the Museum with an integrated landscape setting and visibility from key vantage points within and entering the CBD.
- The Museum to address the primary pedestrian movements between the River Precinct and Civic Link.
- Retain existing landmark trees, reinforced by a new grove of trees providing summer shade and protection from the western sun.
- Integration of the green spine and surface treatment between the Civic Link and threshold of the River Square.

The delivery of the Civic Link is subject to a number of interrelated factors that may affect the timing and extent of the project. These include a reliance on property dealings south of the site, currently managed by Council and the potential impact of the future Metro West project. The implementation of the project is also contingent upon Council realising its Parramatta CBD Public Parking Strategy (Draft), released in April 2017.



Civic Link Concept Plan – Civic Link Framework Plan, p 50

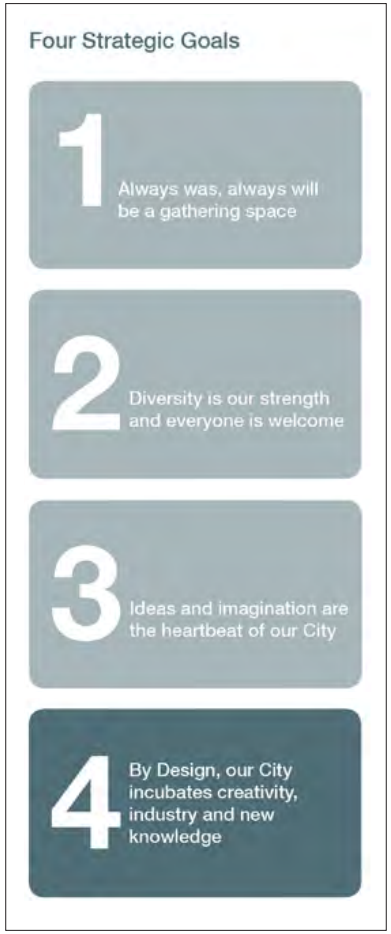
4.8 CULTURE AND OUR CITY

Relationship of Document to the Powerhouse Precinct
This document identifies the chosen location of the future Museum and outlines key cultural aspirations for the site, focusing on the opportunity for the Powerhouse Precinct to be integrated within the existing and future cultural fabric.

Culture and Our City (Draft), released on exhibition in 2017 is a Cultural Plan for Parramatta's CBD 2017–2022. Created by the City of Parramatta Council (CoP) in response to immense change, population growth and infrastructure investment in the region; the plan aims to the enhance the liveability of the LGA and underpin its transformation. The Cultural Plan is understood within a wider network of strategies, operating at a regional, state and local level. It is intended to be integrated within this broader strategic vision, to enhance an established cultural framework as well as support the ambitions of pipeline projects and strategies.

The plan outlines four strategic goals, which are based on overarching objectives for the CBD Cultural Plan. These goals are underpinned by key directives that are required to realise the cultural vision for the CBD. Within Goal 4 (By design, our city incubates creativity, industry and new knowledge), the future Museum is identified as a key element within Parramatta's cultural infrastructure. The plan highlights the subject site as the location of the Museum and the River Square (as outlined within the Parramatta City River Strategy) and Parramasala, the annual cultural festival held in Parramatta.

Key cultural aspirations identified for the site include:
— Ensure the Precinct is well-connected to the redeveloped Riverside Theatres, so that the sites operate as one integrated 'world-class arts centre'.
— Provide opportunities for the Museum to support Reconciliation and engage in local indigenous histories and the living culture of the Darug people.
— Represent the Museum body by providing a destination site and advancing education on the topic of science and innovation.
— Design the Museum in consultation with Western Sydney communities, capturing the diversity of character and needs within the local area.



Adapted from Culture and Our City, COP, p 18–19

10+ Year Community Strategic Plan – Culture and Our City, COP, p 26

4.9 PARRAMATTA BIKE PLAN 2017–2037

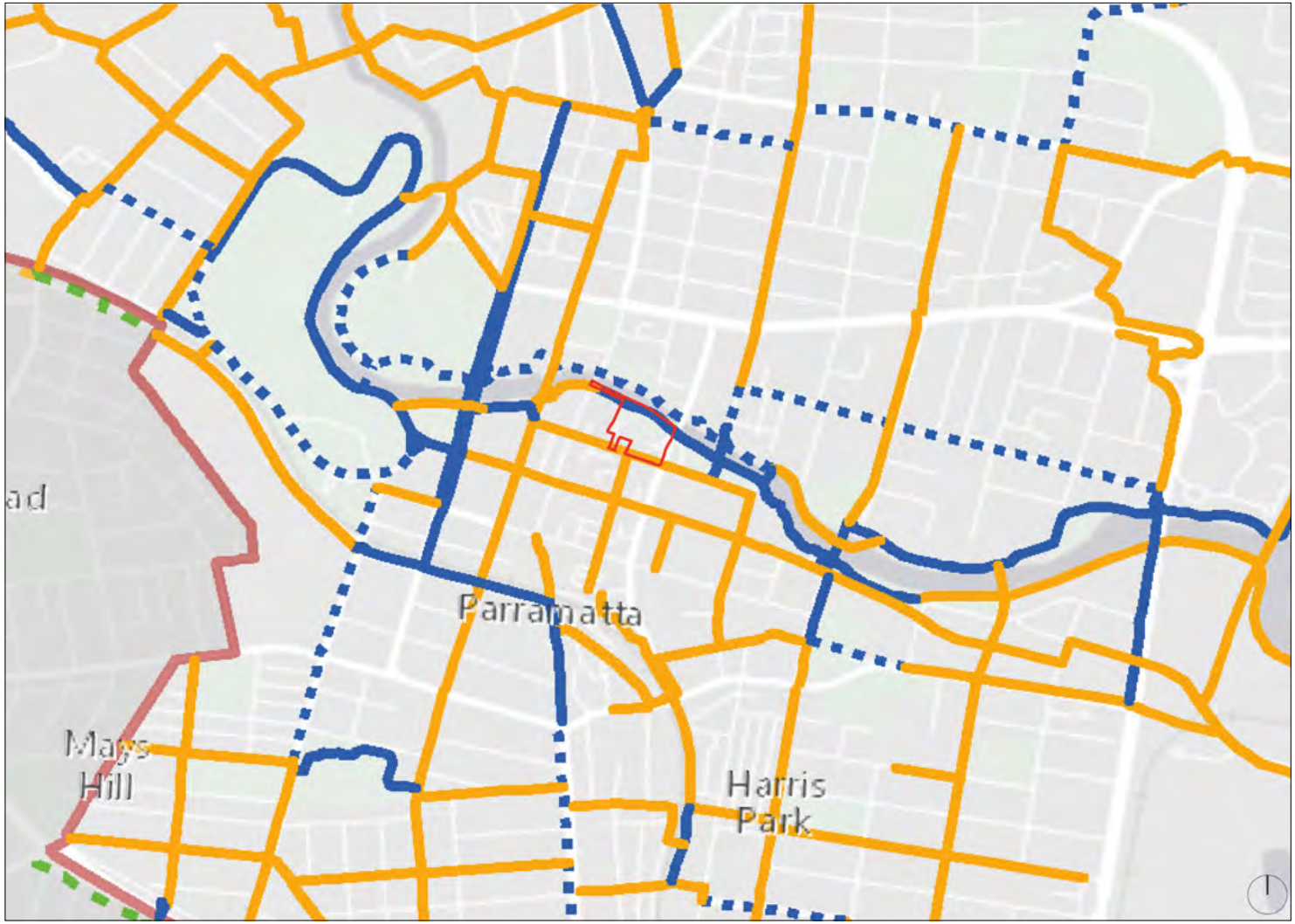
Relationship of Document to the Powerhouse Precinct
This document does not make explicit reference the subject site, however the Plan proposes to retain and upgrade existing cycle paths along the northern and southern site boundaries.

The Parramatta Bike Plan 2017–2037 was prepared by Change Collective, CrowdSpot, Insitute for Sensible Transport and Safe Systems Solutions on behalf of CoP and released in 2017. The plan acknowledges Parramatta's role as Sydney's Central City (Greater Sydney Commission) and as such, should support the liveability of Parramatta into the future "enabling residents, workers and visitors to have more transport choices as the city densifies."

The plan outlines 3 key aspirations:
— To enhance the productivity and liveability of Parramatta through an increase in cycling, helping foster healthy an connected residents, workers and visitors.
— For cycling to be safe, an perceived as a safe and attractive option for all members of the community for those aged 8 through to 80.
— To increase the proportion of people cycling in Parramatta to 5% of all trips to work and 10% for those ending in the CBD.

Population growth is forecast to bring 26,545 more people into Parramatta CBD from 2016–2036:

> 'Investing in connected, dedicated and direct cycling infrastructure to ensure Parramatta's liveability and productivity is protected and enhanced will help increase Parramatta's attractiveness as a place to live, work and invest ... [The] Bike Plan recognises the need to help shift car trips towards sustainability transport and does this by making it easier to ride'.



Existing and Proposed Cycling Network
Adapted from Parramatta Bike Plan 2017–2037

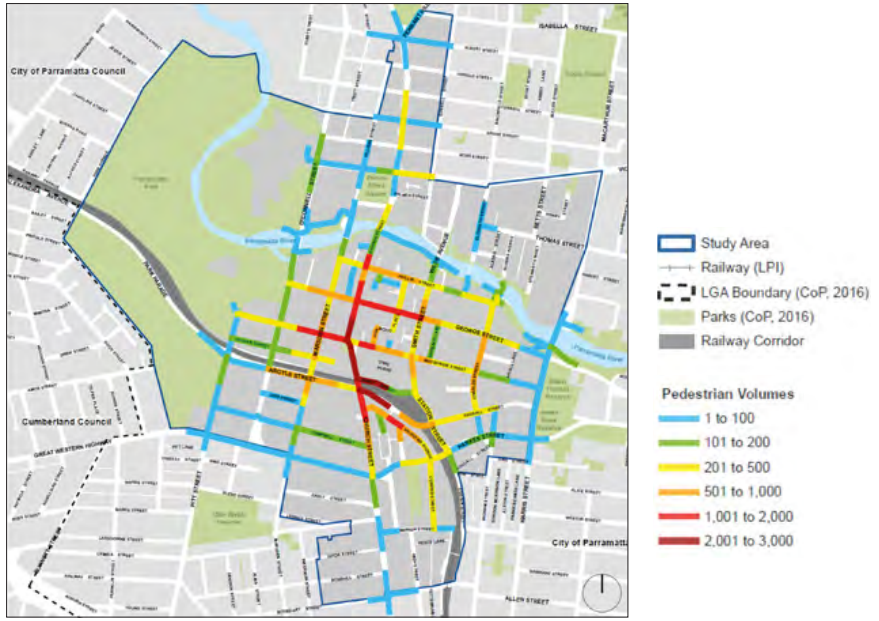
4.10 PARRAMATTA CBD PEDESTRIAN STRATEGY (DRAFT)

Relationship of Document to the Powerhouse Precinct
This document recognises the relocation of the Powerhouse to the subject site in Parramatta as a key consideration for the CBD Pedestrian Strategy. Walkability and accessibility is prioritised for the CBD, particularly for major cultural and civic destinations such as the future Museum.

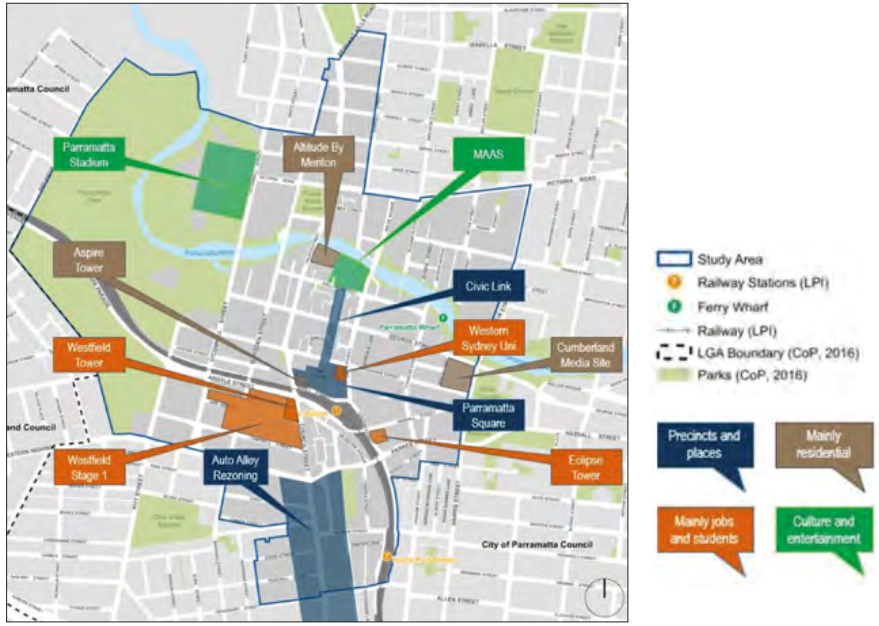
The Parramatta CBD Pedestrian Strategy prepared by Cardno for City of Parramatta in 2017, aids in the planning and delivery of a walkable, accessible and safe CBD.

The strategy outlines strategic walking objectives which the Museum site should integrate. They include:

— **Prioritise the time, safety and amenity of pedestrians**: Prioritising people over vehicles and making it more convenient to walk than drive between destinations
— **Enhance and activate spaces and streets, supporting the CBD's economy**: attracting people to the CBD through quality design and activation which will increase pedestrians, contribute to a sense of community, support the economy and revitalise streets and lanes
— **Capitalise on the transformation of the CBD to benefit pedestrians**: public and private investment into the city will be focussed to ensure best-practice outcomes for pedestrians and the walking network, creating a permeable and connected network for the public
— **Understand and improve the current and future pedestrian network**: Current and future pedestrian demand is monitored and catered for in a way that builds on the existing street character and lanes network
— **Grow walking mode share and support public transport**: embed walking as part of their day through the creation of safe spaces connected to existing and proposed public transport in a comfortable, legible and direct manner.
— **Promote walking**: encourage and support walking as the preferred mode of transit through accurate identification and effective communication to ensure walking is a default/straightforward/easy choice.



Existing Pedestrian Network – Parramatta CBD Pedestrian Strategy, Cardno, p 7



Key Development Sites within the CBD – Parramatta CBD Pedestrian Strategy, Cardno, p 18

4.11 PUBLIC DOMAIN GUIDELINES

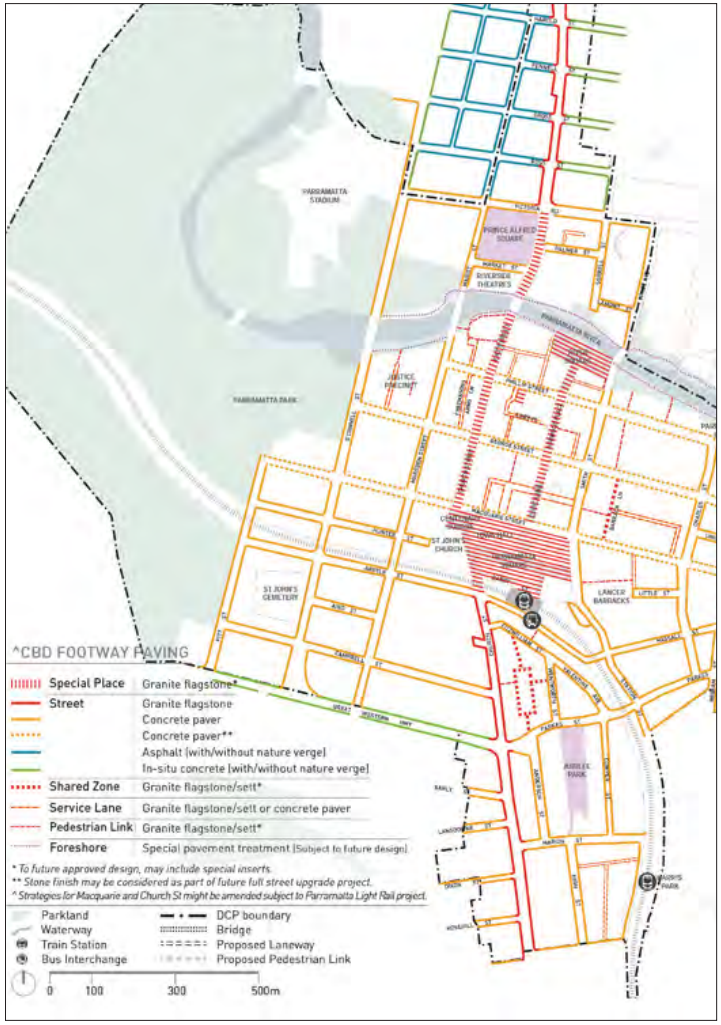
Relationship of Document to the Powerhouse Precinct
This document identifies the site as the River Square. There is opportunity for the Powerhouse to integrate the design guidelines where it interfaces with the public realm.

The Public Domain Guidelines were released by City of Parramatta in July 2017. The purpose of the document is to provide detailed design guidance for public domain projects, at both a strategic and technical level, to ensure efficiency and consistency across the LGA.

The document presents a set of design principles, as key considerations for the public domain and streetscape design. Streets and the public realm must be:
- Lively and functional – high quality, durable and active setting
- Attractive and distinctive – consistent and coherent palette, with reference to distinctive elements of local character
- Universally accessible – provide a safe, accessible and convenient pedestrian and cycle network that caters for all abilities and ages
- Safety for everyone – ensure high quality lighting and pavement, with streets designed to balance the needs of all users
- Protected and Comfortable – Provide shade and weather protection through awnings and trees as well as public amenity such as street furniture and landscaping
- Sustainability – design sustainable streets through tree canopy coverage, integrated WSUD solutions and durable, low maintenance street materials

Detailed design considerations and specifications are also provided for the various street typologies located across the LGA.

Additionally, the document provides a design strategy for various components of the streetscape and public realm:
- Paving Strategy
- Street Tree Strategy
- Tree Surround Finishes Strategy
- Underground Overhead Wire Strategy
- Furniture Strategy
- Pedestrian Lighting Level Strategy
- Vehicular Lighting Level Strategy
- Street Light Pole Strategy
- Park, Plaza and Lane Light Pole Strategy
- Banner Strategy



Paving Strategy – Public Domain Guidelines, p 90

Street Tree Strategy – Public Domain Guidelines, p 94

4.12 CHARLES STREET SQUARE STRATEGY AND URBAN DESIGN REPORT

Relationship of Document to the Powerhouse Precinct
This document recognises the site of the Museum. The design of the future Museum has no direct relationship with Charles Street Square. However, the Museum development should consider how upper and lower level connections might tie into routes extending out from Charles Street Square.

Completed in 2017 by Hassell on behalf of City of Parramatta, the Charles Street Square Strategy builds on the Parramatta City River Strategy and sets out a preferred approach to the public domain adjacent to Parramatta Ferry Wharf. Stage 1 of the strategy is currently in the design phase with a construction budget allocated.

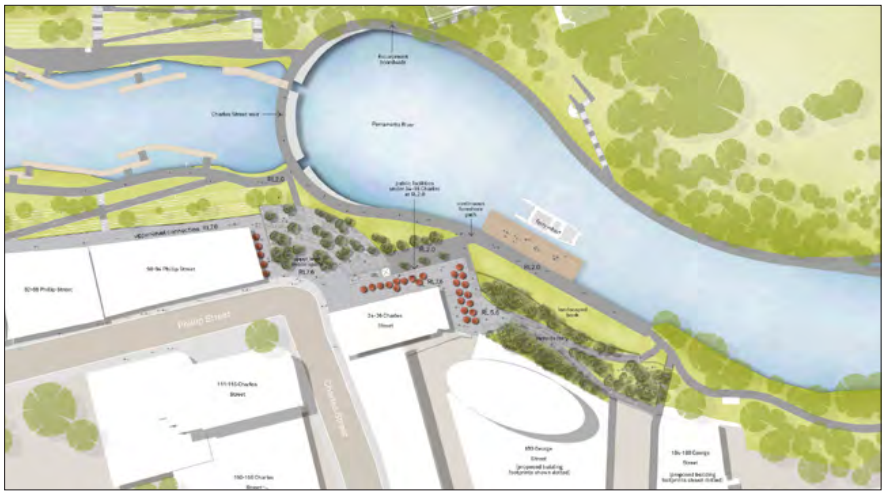
Key moves outlined for this space are the inclusion of a stepped event space, outdoor dining and active frontages along the river-front and accessible routes to the foreshore. It sets out proposed levels within the square and preferred outcomes from the surrounding buildings in regards to activation and built form.

This strategy integrates with the proposed escarpment boardwalk which will deliver a walking and cycling path on the northern bank of the river and connect existing paths in Parramatta CBD through to Western Sydney University in Rydalmere and Sydney Olympic Park.

The key design principles outlined for the space include:
— Creating a distinct place
— Direct paths and connections
— Opening views to the River
— Providing the potential for events and gathering
— Accessibility Compliance

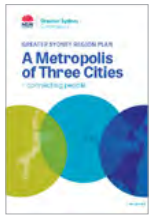
Important moves to be integrated into the design of the project site include providing connections to the lower and upper level connections extending from Charles Street Square in the west. Ensuring universally accessible routes across the site will also be integral.

Strategic Context – Charles Street Square Strategy and Urban Design Report, p 19


Charles Street Square Master Plan – Charles Street Square Strategy and Urban Design Report, p 35

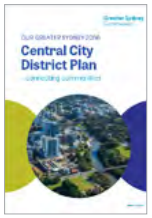
4.13 IMPLICATIONS FOR POWERHOUSE PRECINCT

The following is a summary of the key takeaways from each document, in relation to the delivery of the Museum:



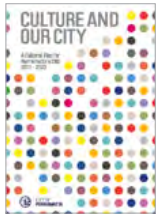
The Greater Sydney Region Plan – A Metropolis of Three Cities
This document was prepared at a broader strategic level and does not explicitly reference the subject site.

It is important to recognise the site's strategic position within the Parramatta CBD, as it evolves into Sydney's second CBD.



Central District Plan
Although this document does not make explicit reference to the subject site, the aspirations for the wider district, particularly in relation to growth targets and cultural and public domain overlays, should be taken into consideration.

Parramatta Strategic Framework
This framework has played a key role in determining the final location of the Museum. The site's location is identified as an opportunity for cultural activity and activation of the public realm.



Culture and Our City
This document identifies the chosen location of the future Powerhouse Precinct and outlines key aspirations for the site, focusing on the opportunity for the Museum to be integrated within the existing and future cultural fabric.

Parramatta Bike Plan 2017–2037
This document does not make explicit reference the subject site, however the Plan proposes to retain and upgrade existing cycle paths along the northern and southern site boundaries.

Parramatta CBD Pedestrian Strategy
This document recognises the relocation of the Powerhouse to the subject site in Parramatta as a key consideration for the CBD Pedestrian Strategy. Walkability and accessibility is prioritised, particularly for cultural sites such as the future Museum.

Greater Parramatta and the Olympic Peninsula
The site's strategic location within the GPOP corridor is highlighted as an opportunity to provide a well-connected, active cultural and civic anchor, contributing to the revitalisation of the Parramatta River Foreshore.

Parramatta City River Strategy
Although developed prior to the selection of the Powerhouse site, the Strategy highlights a significant public domain offering on the Museum site, including a link from Phillip Street to the foreshore.

Civic Link Framework Plan
This framework located the Museum at the terminus point of the future Civic Link, however its functional, and spatial requirements have not been considered.

Public Domain Guidelines
This document identifies the site as the River Square. There is opportunity for the development project to integrate the design guidelines where it interfaces with the public realm.

Charles Street Square Strategy and Urban Design Report
This document recognises the site of the Museum. The design of the future Museum has no direct relationship with Charles Street Square, besides ensuring cohesive connections along the River Foreshore between the two sites.

APPENDICES

TECHNICAL APPENDICES

APPENDIX 1: SERVICES AND ESD
APPENDIX 2: HERITAGE
APPENDIX 3: STORMWATER AND FLOODING
APPENDIX 4: STRUCTURAL
APPENDIX 5: TRANSPORT, ACCESS AND TRAFFIC
APPENDIX 6: VERTICAL TRANSPORTATION
APPENDIX 7: SECURITY
APPENDIX 8: ACOUSTIC REQUIREMENTS
APPENDIX 9: COLLECTION LOGISTICS

APPENDIX 1: SERVICES AND ESD

Building services performance requirements addressed in this Appendix include:

— Air Conditioning and Ventilation
— Building Management System
— Security & CCTV systems
— Electrical & Data Services
— Fire Services
— Hydraulics
— Sustainability
— Vertical Transportation

GENERAL
Design of plant to service the buildings should be located above the flood planning levels (refer to Stormwater and Flooding Appendix).

The extent of redundancy in the building services designs must consider the risks and consequences of the systems failure in terms of asset protection, security and the safety of the occupants as well as Collection and loan materials. Sustainable design of facilities will minimise need for reliance on mechanical controls in the event of failure. Provide adequate spare capacity to for all building services to industry and benchmark standards.

Careful design and considerations should be made when designing building services in respect of both impacts to internal Powerhouse occupants, operations and neighbours of the Precinct.

SITE SERVICES
Any services diversions of existing services and augmentation of new site infrastructure must consider the wider Parramatta city such that the planned works complements the required work of other projects and possible future works nearby.

An analysis of the capacity of the surrounding services is summarised below:

Electrical – a new substation and high voltage connection from the area zone substation will be required to service the Project and to replace the existing active site substation that is servicing the local area.

Water – the site has access to authority water mains in both Phillip Street and Wilde Avenue. It should be noted that there will be a requirement for a 1,400,000L water tank for the sprinkler system due to the building use and size dictating high hazard sprinkler protection.

Sewer – connect to local sewer system.

Telecommunications – New high-speed lead-in / NBN.

SAFETY IN DESIGN AND MAINTENANCE
Safety in design considerations must be addressed in the design of services in relation to height and accessibility for maintenance and replacement.

Equipment selections should be non-proprietary where possible to enable long term open market maintenance of the systems. Ensure the supply of equipment (including for proprietary equipment when used) are complete with all associated systems access devices, including unique keys, tools and passwords required for maintenance, modification, editing or removing equipment.

DESIGN LIFE
The design life of the building is 100 years.

The building services design life should meet world's best practice with a minimum period as noted below.

— Mechanical Air Conditioning, environmental control systems and plant must achieve 20 years design life.
— Hydraulic pipes must achieve 50 years design life.
— Electrical infrastructure must achieve 25 years design life.
— Controls and electronic systems must achieve 15 years design life.
— Fire System must achieve 15 years design life.

SUSTAINABILITY OBJECTIVES
The Museum will promote sustainable principles and be in accordance with government objectives for the NSW Government. The site should be developed as an exemplar project for public building sustainability.

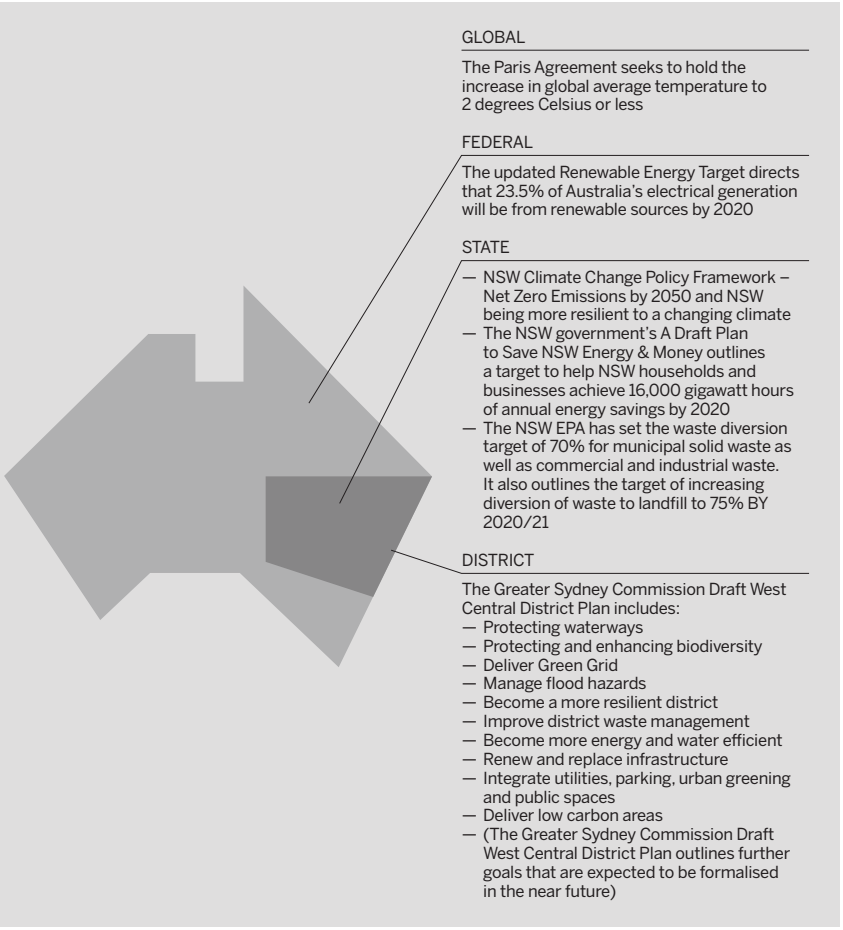
The interpretation of sustainability objectives will be placed in the context of the challenges of providing the effective display of the Collection, a comfortable and safe environment for visitors and staff, and conditions conducive with Collection preservation and conservation including the Museum programs.

The project will aim to maximise environmental opportunities through energy conservation, reduction of waste, water usage reduction and materials sourced from sustainable sources. The design should: maximise energy efficiency; prevent noise and light pollution and promote passive solutions where possible.

The building design should be centred on an energy efficient, thermally responsive building. The design shall also respond to potential climate change impacts whilst incorporating low and zero carbon technologies where applicable. The City of Parramatta has a well-developed Environmental Sustainability Strategy, which clearly articulates the vision and strategies for the city. The document is also aligned with International, National and Regional ESD targets, as shown in Figure 1.

The Powerhouse Precinct Project is seeking to lead the way in implementing and showcasing strategies which support these wider goals. The Competition entrants shall demonstrate their response to the high level ESD objectives described above.

Figure 1 – International, National and Regional ESD targets



CLASSIFICATION REQUIREMENTS
Table 1 and subsequent conditioning descriptions provide a summary of the presentation spaces and their respective functionality.

Table 1 – Building Services Classification Requirements

Class	Description	Examples (see Table 3 for allocation)	Workcover/Sickness/Accident
AA	International Museum Standard Environmental Conditions. Humidity and Temperature controlled, with very minimal variability. Able to operate at variable control points within set range. High Security overlay, with full low-light PTZ CCTV, movement sensor, alarm coverage. BCA compliant fire systems and VESDA fire detection.	Presentation Spaces as nominated	Precision control, no seasonal changes. Short fluctuations ± 5% RH, ± 2°C. Seasonal adjustment to set points: RH, no change. Up 5°C; down 5°C. No risk of mechanical damage to most artefacts and paintings. Some metals and minerals may degrade if 50% RH exceeds a critical RH. Chemically unstable objects unusable within decades. (ASHRAE 2003, 21.13, table 3)
A	Midlevel controls for transition spaces and selected presentation spaces. Humidity and Temperature controlled, within a broader variability range. Able to operate at variable control points within set range. High Security overlay, with full low-light PTZ CCTV, movement sensor, alarm coverage. BCA compliant fire systems and VESDA fire detection.	Concierge & Circulation Spaces Presentation Spaces as nominated Powerlab, Education Spaces and Studios	Precision control, some gradients or seasonal changes, not both. Short fluctuations ± 5% RH ± 2°C. Seasonal adjustment: up 10% RH, down 10% RH, up 5°C, down 10°C OR ± 10% RH ± 2°C. Seasonal adjustment: RH no change, up 5°C; down 10°C Small risk of mechanical damage to high vulnerability artefacts, no mechanical risk to most artefacts, paintings, photographs, and books. Chemically unstable objects unusable within decades. (ASHRAE 2003, 21.13, table 3)
H	Spaces designed for human habitation, but not for Collection display or storage. Access card controls. CCTV on primary access points only, with additional CCTV coverage in Retail and Hospitality spaces. BCA compliant fire systems.	Offices Workshop and Preparation Spaces Retail and Hospitality Spaces	

** Michalski, Stefan https://www.canada.ca/en/conservation-institute/services/preventive-conservation/environmental-guidelines-museums/general-care-preventive-conservation.html.

PRESENTATION SPACE USAGE AND DESIGN CRITERIA

Table 2 and subsequent conditions descriptions provides a summary of the presentation spaces and their respective functionality.

ENVIRONMENTAL CONDITIONS AND VENTILATION

Environmental Conditions
The occupied internal spaces within the Museum and associated spaces are to be conditioned to provide an appropriate environment for the varying use of the space. Presentation Spaces shall have the appropriate environmental (Temperature and Humidity) controls for the preservation of both exhibits and architecture for all modes of operation. All other occupied spaces shall provide a comfortable and healthy environment for visitors and staff and associated conditioning descriptions). The Powerhouse is keen to explore the opportunities of implementing passive measures, where feasible and appropriate.

The Powerhouse Precinct will not operate as per the existing Powerhouse Museum with fixed exhibitions and a touring gallery, with the focus on providing a series of robust functional spaces. Individual display spaces shall be designed to allow airflow isolation from all other spaces for energy conservation and curation flexibility.

The air conditioning systems for the performance spaces must be able to be operated in accordance with the size of the audience, use, level of lighting and other heat producing effects. It must also be able to be readily turned off and operated in ventilation mode only.

It is proposed that spaces within the Museum shall have the capacity to perform multiple functions and as such the mechanical system must provide the ease of flexibility for all functions outlined with minimal disruption at change over.

Table 2 – Presentation Space Usage

Presentation Space	Potential Use	Minimum People	Air Conditioned	Logistics – Maximum Object sizing
P #1	Unlimited Large scale exhibitions and events	5000	Usage conditioning requirements provided	Unlimited
P #2	Large scale exhibition	1000	Usage conditioning requirements provided	Unlimited
P #3	Large scale exhibition	800	Usage conditioning requirements provided	Goods lift
P #4	Large scale exhibition	1000	Usage conditioning requirements provided	Access hoist or equivalent
P #5	Large scale exhibition	800	Usage conditioning requirements provided	Goods lift
P #6	Immersive screen program	800	Usage conditioning requirements provided	Goods lift
P #7	Performance and large scale exhibitions	800	Usage conditioning requirements provided	Goods lift

Smoke Management Strategy
It is anticipated that with the large volume spaces proposed there is likely an engineered smoke management system, incorporating the latest methods in venting and management of smoke in large open spaces will be required, however the overall design of the building and fire control systems shall endeavour reduce smoke management systems where possible. C02 monitoring in the presentation spaces and loading dock will be required.

Conditions for Collection display, including international and temporary loans
The Collection spaces at the Museum, along with the associated circulation delivery and workshop spaces adhere to the following for the appropriate conditions for preservation of collection and storage as endorsed by the ICOM – ICC Declaration Sept 2014AICCM Environmental Guidelines 2018 and the Bizot Green Protocol **http://www.icom-cc.org/332/-icom-cc-documents/declaration-on-environmental-guidelines/#.XO9qbYgzaUk**.

Presentation Space designated 'AA' must be designed for international temporary loans and shall meet all necessary condition and redundancy requirements applicable.

Presentation Space usage and design criteria
Exhibitions and Collection spaces require higher than usual environmental control. A series of classes has been devised to allow different spaces appropriate levels of control.

Conditions for use
The mechanical design shall respond to the usage requirements of the presentation spaces noted in Table 3, noting that the presentation spaces are multifunctional in their usage. The mechanical system shall allow ease of changeover between functions and provide maximum flexibility in addition to being able to modulate fresh air and supply based on occupancy of the spaces.

Table 3 – Presentation Space Functional Details

Presentation Space	Minimum People	Conditioning Standard	Primary Function	Secondary Function
P #1	5000	A*	Large scale exhibitions	Performance, major events
P #2	1000	A	Large scale exhibitions	Performance, events
P #3	800	AA	Large scale exhibitions	Performance, events
P #4	1000	AA	Large scale exhibitions	Performance, events
P #5	800	AA	Large scale exhibitions	Performance, events
P #6	800	A**	Immersive screen program	Performance, events
P #7	800	A	Performance, events	Large scale exhibitions

* Humidity in P1 is not to be controlled but will generally fall between 40–65% as a result of cooling.
** Space to have capacity for upgrade to AA Conditioning Standard.

Presentation Space #P1
Environmental control systems serving spaces requiring comfort conditions are to have the ability to achieve stable temperature and humidity conditions.

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Relative humidity internal	(%) = 55
Relative humidity control	(%) = N/A

The controlled conditioned zone is required on a gradient scale with a conditioned zone at the lower 4m zone of the occupied space. It is accepted that the temperature and humidity above this point can be uncontrolled.

Consideration should be made as to thermal separation of Presentation Space 1 from the close control presentation spaces and the impact of possible large levels of infiltration given the volume and function of P1 as a space.

P1 secondary function
As a secondary function P1 shall act as a concert venue and be able to function to the following performance criteria:

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Relative humidity internal	(%) = 50
Relative humidity control	(%) = N/A

The mechanical design shall allow for multiple seating configurations.

Consideration shall be made for the management of stage smoke in the mechanical design.

Presentation Space #P2
Air handling systems serving spaces requiring comfort conditions are to have the ability to achieve stable temperature and humidity conditions.

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Relative humidity internal	(%) = 55
Relative humidity control	(%) = +/-5

The controlled conditioned zone is required on a gradient scale with a conditioned zone at the lower 4m zone of the occupied space. It is accepted that the temperature and humidity above this point can be uncontrolled.

P2 secondary function
As a secondary function P2 shall act as a concert venue and be able to function to the following performance criteria:

The mechanical design shall respond to the low noise requirements within a performance space with maximum flexibility of seating arrangements allowed for, note humidity control is not a requirement but should fall between 40-65%RH.

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Bizot principle band	(oc) = 20-25
Relative humidity internal	(%) = 50
Relative humidity control	(%) = n/a

The mechanical design shall respond to maximum flexibility of seating arrangements allowed for.

Consideration shall be made for the management of stage smoke in the mechanical design.

Presentation Spaces #P3, P4 and P5
Provision of close temperature and humidity control to international museum standards requires specialist mechanical services systems and appropriate zoning in terms of the physical connection of the gallery space with other, non-close control spaces.

Air handling systems serving storage spaces are to have the ability to achieve stable temperature and humidity conditions.

Temperature –between 15-25°C with allowable fluctuations of +/-4°C per 24 hours;

Relative humidity – typically between 45-55% with an allowable fluctuation of +/-5% per 24 hours;

Spaces with the requirement for a closely controlled environment are to be by independent air handling systems thus allowing the gallery curatorial flexibility without impacting adjacent spaces conditioning.

Dry bulb internal	(oc) = 21.0
Wet bulb internal	(oc) = 15.31
Bizot principle band	(oc) = +/-3
Relative humidity internal	(%) = 55
Relative humidity control	(%) = +/-5

#P3, P4 and P5 secondary function
The spaces shall also have the flexibility to revert to a lesser condition for performances and events and be able to function to the following performance criteria:

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Relative humidity internal	(%) = 55
Relative humidity control	(%) = +/-5

Presentation Spaces #P6
Air handling systems serving spaces requiring comfort conditions are to have the ability to achieve stable temperature conditions. Humidity is to be controlled.

The mechanical design shall respond to the low noise requirements within a theatre space with maximum flexibility of seating arrangements allowed for.

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Bizot principle band	(oc) = 20-25
Relative humidity internal	(%) = 55
Relative humidity control	(%) = +/-5

#P6 secondary function
As a secondary function P6 shall act as a performance and event venue and be able to function to the following performance criteria:

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Bizot principle band	(oc) = 20-25
Relative humidity internal	(%) = 50
Relative humidity control	(%) = N/A

This space may incorporate capacity for upgrade to AA Conditioning Standard.

Presentation Space #P7
Air handling systems serving spaces requiring comfort conditions are to have the ability to achieve stable temperature and humidity conditions. The mechanical design shall respond to the low noise requirements within a theatre space with maximum flexibility of seating arrangements allowed for.

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Bizot principle band	(oc) = 20-25
Relative humidity internal	(%) = 50
Relative humidity control	(%) = N/A

The mechanical design shall allow for multiple seating configurations.

Consideration shall be made for the management of stage smoke in the mechanical design.

#P7 secondary function
As a secondary function P7 shall act as a large scale exhibition space and function to the following performance criteria:

Dry bulb internal	(oc) = 22.5
Wet bulb internal	(oc) = 15.83
Bizot principle band	(oc) = 20-25
Relative humidity internal	(%) = 50
Relative humidity control	(%) = N/A

BUILDING MANAGEMENT SYSTEM
The design must include a robust and easily adaptable building management system that allows for monitoring, adjustment and reporting of all building services throughout the site. The building management system must be operable from a dedicated BOH space.

POWER SUPPLY
Substations, main switchboards, backup power UPS and generator systems shall be designed to withstand floods and ensure operation of the facility on the upper levels during 1:100-year flood level at RL7.5. and where possible the Probable Maximum Flood (PMF).

The substation must be designed in accordance with local Supply Authority, Endeavour Energy noting 1:100-year level. It should be noted that best practice is to have the critical plant at the RL for a 1:100yr flood event (plus +300mm) as a minimum. The final substation layout and location must be to the approval of Endeavour Energy.

The design of the electrical services must be completed in accordance with the latest industry benchmarks and performance requirements and guidelines. Endeavour Energy, the local power supply authority has strict requirements in terms of access, position and arrangement of substations that must be considered in the design solution.

All works must comply with the requirements of the local codes such as the NCC and standards such as the SAA wiring rules AS/NZS3000.

Functional Requirements
The electrical services shall include solutions in an integrated manner with all the other building services complete with adequate capacity, redundancy, flexibility and safety in the topology of the electrical systems with consideration to internal dual supplies and back-up power systems to satisfy the functional requirements. The systems shall be arranged to ensure the environment, health and safety of the occupants and the protection of the building assets and Collections.

All spaces require various amounts of power and fixed data points of connection and full wireless capability. The final quantity of supplies and points for each space must meet the functional requirements.

The services shall include:
— Dedicated stable 'clean' power supply for sensitive sound and audio/visual systems.
— Use of innovative new flexible lighting and audio-visual solutions
— Sufficient capacity in the base building to meet the demands of major theatrical production, including stage lighting and power systems.
— Power and data connections for all other building services such as security, fixed Audio-Visual Systems, plant, HVAC and standard requirements for Museum staff and residential facilities.
— Reticulation of services that addresses the overall building life enabling systems to be renewed, expanded, changed and modified without impacting the structure.
— Flexible in the layout and topology such that each space is not affected by another.
— Surge and lightning protection.

The large Presentation Spaces shall include the following:
— Power and Telecommunications Services base building provisions to adequately suit the functional requirements for each space at Gantry and Floor level.
— Base Building Infrastructure to cater for bump in, specialist lighting, Museum lighting, performance lighting, video and sound systems including their fixtures and associated cabling.
— Power and Communications cable trays for 'bump in' services at Gantry level.
— High capacity 'Powerlocks' at Gantry Level and at Floor level throughout.
— Power for lifting winches and theatre machinery systems.
— Accessible services trenches at floor level spaced at 10m intervals with flush services nodes floor traps at regular 10m intervals consisting 3ph/1ph, fibre and copper outlets.

TELECOMMUNICATIONS
Technology in a modern facility of the future must cater for the unknown and the unexpected in terms of the visitor's expectations and artist's exhibitions. As growth and innovation in technology increases within and beyond the digital age, the ability to sustain human interest, interaction and participation in the Museum's activities via high speed reliable telecommunications is essential.

The facility shall consist of high-speed ICT fibre connections to the end user and blanket WiFi connectivity for portable and wireless devices. Any ICT fibre connections and service nodes must be backed up, connected to and managed by a data centre that has the server capacity to meet the connectivity needs of all staff, visitors and systems and services that will operate throughout the site. Services nodes must be planned at regular intervals to cater for copper and fibre connections throughout.

LIGHTING

General
The building will be composed of various spaces and areas with diverse needs for illumination.

Lighting must be designed to address the various functional and aesthetic requirements of the building in accordance with international best-practice. Depending on the nature of the spaces, the lighting will use adequate methods and typologies of light and achieve different levels of illumination to suit the various functional requirements.

Architectural atmosphere and visual quality of front of house and feature spaces shall be considered as a high priority for the design of lighting. Rather than a blanket lighting condition of illumination, lighting must be in dialogue with the building fabric and enhance its structural and material qualities as a state-of-the-art cultural centre. Sustainability is a key consideration for lighting. All lighting equipment must be selected with due consideration to energy efficiency, durability, access, maintenance and responsible disposal or recycling.

The lighting shall consist of:
— General internal lighting throughout.
— Architectural lighting to common circulation areas.
— External lighting to minimise glare and light spill.
— Façade lighting and signage.
— Exit and emergency lighting throughout.
— Base building house lighting for all presentation spaces.
— Light control solutions that are part of a linked data, electrical and telecommunications system

(Specialist Lighting exhibition and performance lighting is excluded and separate).

Performance Technological Requirements
All lights shall warrant a minimum design life of 50,000 hrs of use. All lights shall have colour rendering that is adequate for their use. As a guide all general lighting should have a CRI of 80 or higher, for presentation/exhibition spaces lights with CRI over 90 should be considered.

All lights shall have adequate colour temperature for their use. Unless required for a specialist application all lighting must be of a CCT of 3000K or 4000K. All lights must have a SDCM of no more than 3 steps. For presentation spaces a SDCM of no more than 2 steps is required. Front of house spaces will require a high level of flexibility, using infrastructure that can accommodate new technologies without major effort.

Front of house spaces require high quality dimming capability, that can operate down to very low levels of light without flicker, buzz or interference. Auxiliary front of house spaces such as public toilets should also be considered as an extension of front of house for the purposes of lighting design.

Back of house spaces must be illuminated to provide clarity, visual comfort and visual performance for the fulfilling the relevant visual tasks of the space. Collections storage spaces should have motion detection to enable lights to turn off after extended period of inactivity in space to minimise risk of light damage. It is proven that daylight inclusion in the interior spaces enhance the health and wellbeing of the building occupants. Lighting extends beyond electric sources of light. Daylight should be minimised, and UV excluded in areas displaying or housing light-sensitive Collection material.

Control Methods such as passive infrared sensors, ultrasound sensors or photoelectric cells must be used to suit the nature of the spaces to control lighting effectively. New (wireless) control technologies that provide the required level of flexibility and do not require lighting control componentry or cabling must be considered. Selection of lighting equipment must be done in a manner that aligns with the aesthetic requirements of the architecture, blending in where possible. All lighting must be located, in locations that are safely accessible, serviceable and replaceable.

Lighting must be designed with due consideration to AS/NZS1680 AS1158, AS/NZS60598.1 2003, IEC/TPAS62717 and other relevant standards as required. However, lighting must be designed with the understanding and thorough design consideration that in certain instances a best-practice approach might require a deviation from a blanket-approach to lighting.

It is anticipated that the building will be a key landmark within its context. Outdoor facade lighting must be provided to suit the nature of the building. Immediate building surrounds must also be illuminated. Outdoor illumination must be designed minimising light pollution and light trespass. Fire Services

FIRE SERVICES

The Fire Services shall include and coordinate the following in an integrated manner with all building services:

- Compliance with all BCA/NCC requirements
- Water tank 1,400,000 L capacity
- Fire and Rescue fire-fighting operations in and around the building
- Liaison with fire engineer and certifier during the detailed design process in regard to alternate solutions is considered to be required
- Passive protection by means of ensuring that non-combustible materials and furnishings are used.
- Standby and essential power supply is available to monitor and control the fire and communicate and implement the necessary actions to reduce the consequences of such events.
- Smoke detection systems including consideration of VESDA, beam type, video smoke detection in the high roof height spaces.
- Suppression systems, sprinklers, hydrants, hose reels
- PAVA / EWIS coordinated with Public Address Systems
- Arranged to suit the functional operation of the facility such as the use of theatre stage smoke and consideration on the effectiveness of the systems at great heights
- PTZ CCTV monitoring
- Smoke control including the removal of toxic smoke which is hazardous to occupants and damaging to assets via the fire fan control panel interface with mechanical systems.
- Planned emergency egress strategies for occupants including those with disabilities during peak visitor events.
- Leakage detection and monitoring on all wet services.

HYDRAULIC SERVICES

Provide water storage on site to safeguard operation of the building air conditioning for an anticipated time of 2–3 hours. Plant to be accessible and resilient. Consider the level of redundancy such as N+1 for potable water and any sub-soil pump arrangements. Sustainability aspects shall be applied to suit the requirements for the site.

VERTICAL TRANSPORTATION

Overview and Scope

The vertical transport performance requirements addressed in this Appendix include:

- Front of House (FOH) lifts
- Front of House (FOH) stairs and escalators
- Back of House BOH lifts

The FOH Vertical Transportation (VT) design and the extent of lifts, escalators and stairs must consider the various populations, traffic patterns, peak visitor events, including the school and large group arrivals.

The BOH VT design must consider the distribution of general goods, food and waste. The movement of artefacts and display equipment must also be carefully considered in the design of the VT for the building.

Separation of goods/ waste and Collection transport is required.

Forklifts and scissor lifts must be able to be transported to each relevant level of the building.

Where the segregation between the FOH and BOH functions is required, the lifts must not impede the security between these areas. This is a particular consideration in any areas accessible 24/7.

The Public / Front of House (FOH) solution shall include the following:

- **Escalators**: to address the high volumes of occupants.
- **Lifts**: to cater for prams and special needs persons and those that prefer not to travel via escalators. And to cater for levels not serviced by escalators.
- **Stairs**: to cater for the willing and able and the provision of redundancy in the event of failure to escalators. Also, to cater for levels not serviced by escalators.

The Back of House (BOH) solution shall include the following:

- **Lifts**: separation between general goods/waste and Collection/artefact lifts is required. Lifts are required to have capacity to transport Collection and related support material, moving equipment, as well as goods, waste and artefacts.
- **Hoists**: for oversized items, the solution may need to consider the use of large monorail hoists and industrial lifting equipment as necessary to meet the functional requirements of the Museum. External hoist capacity and building design to allow for move of extraordinary oversized objects that do not fit in lifts or corridor spaces should be explored.

Performance Requirements

Overview

The ingress and egress of the internal vertical circulation in general, are to be considered for both safety and convenience, and to meet code requirements providing an acceptable level of performance to prevent delays at times of maximum patronage.

The design of the vertical transportation must be completed in accordance with the latest industry benchmarks and performance requirements. All works must comply with relevant codes, standards and guides such as the NCC, DDA, including the CIBSE Guide D Transportation Systems in Buildings.

Traffic studies by a professional must be provided to ensure that the up peak, two-way studies provide the required handling capacity and waiting intervals to meet industry standards.

The VT systems must achieve 20 years Design Life.

Lift and Escalators where used must be low energy type, including lifts with regenerative drives and power to off when not in use. Escalators to move to low speed when not in demand.

The loading capacity of the lifts must by coordinated with the structural floor loadings and point loads of the gallery spaces.

Finishes to be:

- Robust;
- Corrosion resistance;
- Vandal resistance;
- Easy to clean;

Lifts must:

- Provide ease of access from the Arrivals area to all other levels and circulation spaces for the Presentation Spaces.
- Provide ease of access within the Powerlab
- Provide ease of access within the Staff Office and Amenities
- Provide all abilities access
- Provide secure and sufficiently robust access to all Presentation and back of house Collections spaces for Collection movement.

Guidance Note: lift access within the Creative Hub and Staff Office and Amenities may be shared if these spaces are designed to be co-located.

Back of house

The design must accommodate BOH vertical transport that:

- Provide flat floor access between the General Loading Dock and Decant and the BOH circulation spaces to FOH areas OR facility to lift shipping containers direct to presentation spaces
- Accommodates the nominated sizes and weights of the artefacts and equipment.

APPENDIX 2: HERITAGE

This appendix provides a precis of the history of Parramatta and the Powerhouse Precinct. It provides information on the history of the site that could be utilised to inform design concepts. It is not intended to inhibit designs, rather it is intended to inspire design responses.

HISTORY OF PARRAMATTA

The landscape of Parramatta is located on the Cumberland Plain, and is very much centred around the presence of the Parramatta River, associated wetlands and resource zones that reflect the presence of this river and the associated geology. Parramatta is also situated downstream from the volcanic outcropping of Prospect, and as a result has developed rich and fertile alluvial and clay soils, predominantly through the process of river deposition of weathered volcanic rock and shale.

This meant that prior to European arrival in 1788, the Parramatta area would have consisted of a low undulating shale environment, that supported extensive Cumberland Plain Woodland vegetation, along with saltwater and freshwater estuarine and swamp environments associated with the Parramatta River. The combination of these resource zones would have supported an abundant variety of flora and fauna native to the region.

The current study area would have originally been covered by this Cumberland Plain Eucalypt vegetation, likely on the edge of swamp land (as evidenced through the results of previous archaeological excavation in neighbouring areas, as well as historical accounts).

ABORIGINAL HISTORY

Prior to the arrival of Europeans in Parramatta in 1788, Aboriginal people of the Burramatta tribe, of the Darug language group, occupied the Parramatta area for over 30,000 years. The Darug language group are the traditional owners of Parramatta, and were part of a larger language group that originally extended from the eastern suburbs of Sydney as far south as La Perouse, west as far as Bathurst and north as far as the Hawkesbury River.

The location of Parramatta, effectively at the head of Sydney Harbour, provided the Barramattagal people with an abundant and uniquely varied food resource created by the convergence of fresh water and salt water within the river. They had access to rich freshwater and saltwater resources such as fish, shellfish, molluscs, eels, ducks, mullet, crayfish and turtles. Faunal resources would have included mammals such as possums, flying foxes, goannas, wallabies and kangaroos. The extensive Cumberland Plain woodlands across the Parramatta area would have also been heavily utilised by the Barramattagal people for native fruits and berries, as well as traditional medicine and remedies.

Unique to Parramatta is a geological feature known as the Parramatta Terrace Sand Sheet. This sand unit is known to contain Aboriginal cultural deposits dating to the Pleistocene period (>10,000 years BP). The site's proximity to the River, suggests a possibility of cultural deposits in the area, in the form of shell middens and artefact deposits.

EUROPEAN HISTORY

Soon after the First Fleet reached Sydney Cove in January 1788 it became apparent that the surrounding land was not at all suitable for agriculture. The Colonial Marines and convicts were largely untrained in farming, thus exacerbating the shortage of both necessary skills and supplies. As a result, explorations were made further inland, as a matter of urgency, to locate suitable agricultural land.

Lieutenant Bradley explored the waterways travelling from the first settlement at Sydney Cove along Parramatta River. By May 1788, approximately 12 miles from Sydney, he identified land with good quality soil adjacent to the river. By November 1788 an experimental Government Farm was established in this location and named Rose Hill. The farm work was undertaken by groups of convicts supervised by the Colonial Marines. It proved to be a success.

Rose Hill was renamed Parramatta in 1791, after the Aboriginal name for the area and was officially founded by Governor Phillip as the second city on the Australian mainland. The military administrative base upon which Parramatta was founded manifested itself in the precise, regularised configuration of the town plan. In 1790 Lt. William Dawes was sent to survey the Parramatta town grid and the line of streets, the arrangement of which largely survives today.

Parramatta's population expanded quickly, aided by the successful farming venture and increasing numbers of free settlers who received land grants in the area. The growing population in the town in turn necessitated improvements in public services, the result of which was establishment of many of Parramatta's major public institutions in the first 15 years after 1788. These included a hospital (1790), Government House (c. 1790), The Barracks (1790/91) and the Government Brewery (1804) as well as several churches, stores and pubs.

HISTORICAL ARCHAEOLOGY

As Parramatta was originally quite a marshy area, the initial settlement of the central area of Parramatta involved the filling and draining of much of the land in this area. As a result of this early intervention required to manage drainage and water flow in the area, an extensive network of early convict-built drains exists across the Parramatta CBD, some of which have been investigated through subsequent archaeological excavation, and some of which are still in use today.

Other historical archaeological resources of state significance, such as the remains of convict huts, cesspits, wells and ephemeral remains of farming activities (fence lines, post holes, evidences of outbuildings), as well as early wharf structures and river-related activities have the potential to be found along lands fronting Parramatta River. Convict-related archaeological resources attract international attention due to their rarity and are considered to be a highly significant resource, in NSW and Nationally. The opportunity for incorporating the insitu remains of such significant archaeological resources within interpretation and/or the design of new buildings on site is both exciting and unique, particularly as the resultant development on site is designed to attract high levels of visitation, both domestic and international.

WILLOW GROVE
Willow Grove, at 34 Phillip Street, was built in the 1870s as a private villa, and later became a maternity hospital called Estella. It is listed as item no. 440 in the Regional Environmental Plan No.28 – Parramatta (REP No. 28), 2013. Willow Grove is not listed on the NSW State Heritage Register.

The building's heritage listing notes that it is

> a good example of a Victorian Italianate two-storey villa, readily identifiable as part of historic building stock and strongly contributing to the streetscape in spite of its large setback, partly through its notable fence.

The listing states that Willow Grove is of significance at local level for historical, aesthetic and representative reasons. It is also considered rare at a local level, being one of four remaining buildings of its type in the Parramatta City Council area. Physically, Willow Grove is described in the State Heritage Inventory database as a 'two storey Victorian Italianate house constructed of stuccoed brick with cast iron balustrading to upper verandah, set back from Phillip Street and with a fine fence of cast iron spikes and elaborate stone gate posts. Mature trees enhance the site. Slate roof is on rendered brick walls. Roof construction is hip with projecting gable front with decorative timber gable screen and finial and decorative barge boards. A pyramid slate roof is above the faceted bay. Two tall rendered brick chimneys with cornice decoration are on east side. Two storey return verandah from projecting gable to east has bullnose roof with striped paint. Verandah floor is timber with dentils on first floor, on ground floor it is tiled. Cast iron columns with cast iron frieze to both floors and cast iron lace balustrade to upper floor verandah. Windows in faceted bay have rendered corniced sills with recessed niches below (plain moulded sills on other windows), and Victorian label mould arches. Front door has transom light above late Victorian panelled door with glazed sidelights. Exterior doors have transom lights and side lights in first floor verandah. Fence is spearhead palisade iron fence set in plinth and into large rendered posts with decorative tops, with iron scroll work on decorative iron gate. A large addition to back of house is kept below original roof level. Other features include a large semi-circular gravel drive.

ST GEORGES TERRACES
St George's Terrace, located at 44–56 Phillip Street, Parramatta, comprises a row of seven two-storey terrace houses built from 1881. The terrace group is recognized as significant at a local level for historical and aesthetic reasons and is considered to be rare (locally), as the terraces are the only remaining two-storey terrace group in Parramatta. They are identified in the REP No. 28 – Parramatta (2013) as Heritage Item no. 441 'St Georges Terraces.

The State Heritage Inventory datasheet states that:

> The group [of houses] presents as having a relatively high degree of integrity when viewed from the street and strongly contributes to the Phillip Street streetscape and the character of the Parramatta townscape.

The State Heritage Inventory datasheet also notes that:

> The two storey Victorian terrace of seven houses are built to the street alignment. Original verandahs with curved corrugated iron roofs cast iron balustrading, and plaster urns that surmounted the continuous parapet have all been removed. Roof construction is with continuous corniced parapet across front elevation which conceals skillion to rear. Verandahs now have an aluminium awning on each terrace. Verandah floors were brick paved. Verandah supports remain, as brick privacy walls extend with recessed arches between each terrace. Windows have brick sills. Each terrace is commercial business with shop front incorporating door.

The ornate front fence which frames Willow Grove.
Photo Source: Daily Telegraph.


St. George's Terrace on Phillip Street circa 1987.
Source: Parramatta Tourist Centre Negs:P.C.C.

LENNOX STREET BRIDGE
The State Heritage listed Lennox Bridge (SHR Item no. 00750) is located within close vicinity to the site and is still used to cross the river at Church Street, Parramatta. The bridge is one of the earliest bridges in NSW and Australia (and the Commonwealth). In 1867 it was named Lennox Bridge by (the young) Parramatta Municipal Council in honour of its designer as it was the last bridge built by Lennox in NSW.

In 1888 Parramatta's first public baths were located just west of Lennox Bridge. Any remnant fabric associated with these would be archaeological in nature only, as they are no longer in use.

Lennox Bridge is significant at State Level because:

> The site possesses the potential to contribute to an understanding early urban development in Parramatta. One of Parramatta's most important historic structures, and one of the earliest bridges in New South Wales and Australia. Professional, trade and manufacturing practice – example of the work of notable engineer. David Lennox. Site possesses potential to contribute to an understanding early urban development in Parramatta. One of Parramatta's most important historic structures, and one of the earliest bridges in New South Wales and Australia.

INTERPRETATION
Given the site's rich and significant history from its pre-European environment, Aboriginal occupation through to be a central location in the development of Australia's second oldest city, built on the back of convicts, through to the current historic buildings on site, the opportunities for meaningful interpretation throughout are endless.

The project also offers the unique opportunity to utilise the functions of the Powerhouse as a vehicle for interpretation. The range of exhibitions, events and programs that will be held within the Powerhouse afford the opportunity for ephemeral interpretation that can continually tell the story of the site, Parramatta and its people.

In particular, the redevelopment of the site for a Museum provides the perfect backdrop for innovative interpretation that incorporates the significant Aboriginal and non-Aboriginal cultural heritage stories and elements within the new development and Museum program.

Potential Interpretative themes to explore include:
- The natural environment prior to European occupation, including flora and fauna
- Occupation of Parramatta by the local Aboriginal tribe, the Barramatta and the history of displacement and loss as a result of European Settlement
- Ongoing Aboriginal cultural practices in Parramatta today
- Story of Sydney's second city and the significance of the Parramatta River, surrounding land in creating the second city.
- History of the site's development over time, including Willow Grove House and the St George's Terraces.


Lennox Bridge c.1836–1839
(Photo Source: Parramatta City Council Research Services 2014)

APPENDIX 3: STORMWATER AND FLOODING

The stormwater and flooding performance requirements addressed in this Appendix include:

— Stormwater management
— Flood levels
— Flood evacuation

This Appendix should be read in conjunction with the Flooding Study Final V6 prepared by TTW for the Business Case and provided to competitors separately.

PERFORMANCE REQUIREMENTS

1. Overview
The City of Parramatta, and the Powerhouse Precinct are prone to periodic flood events. Design responses will therefore need to consider flood risk from both the Parramatta River as well as overland flows from stormwater.

Through careful design it will be possible to develop concepts that can respond to both the flood risk whilst producing an exemplary public domain and built form design outcome.

The key premise is that the hydraulic capacity of the site during flood events should be maintained and that the overall impact of development on the site does not negatively impact properties upstream or downstream. At present, the existing car park on the site has open panels and is water permeable in flood events.

2. Stormwater Management
Stormwater management, on site detention (OSD) and water sensitive urban design (WSUD) will need to be to be in accordance with the following:

— City of Parramatta Stormwater Disposal Policy,
— City of Parramatta Development Control Plan,
— City of Parramatta Development Engineering Design Guidelines
— Upper Parramatta River Catchment Trust on site detention Handbook.

3. Flood Levels and Floor Levels
The Flooding Study Final V6 outlines three key flood levels:
— The 1:100 year ARI overland flood level of RL7.00m
— The Probable Maximum Flood River level of RL10.40m
— Probable Maximum Overland Flood Level of RL11.30m

Parramatta Development Control Plan 2011 (DCP) sets out the requirements for developments in flood prone areas and requires that all habitable spaces must be designed to 1:100 year ARI plus freeboard (500mm) – i.e. habitable spaces must be at RL7.50m or above.

Non-habitable basements are not anticipated for the Precinct, as they are considered to be cost-prohibitive due to the significant flood mitigation measures required.

The majority of Presentation Spaces should be designed to be above the overland PMF (RL11.3) to ensure they are suitable for display of some Museum Collection items. This should be considered in the design of Presentation Spaces to ensure maximum flexibility in the operation of such spaces.

Careful consideration is required at the northern extent of the Precinct to ensure hydraulic flows and flood storage capacity are maintained on the site.

Any development within the flood storage capacity zone would be required to withstand forces of floodwater, debris and buoyancy up to the 1:100 year ARI, whilst not impeding hydraulic storage capacity.

4. Overland Flow Consideration
The site is impacted by overland flows from the south. The current flow is via Phillip Street and Dirrabarri Lane through to the River Foreshore.

Design Concepts must include:
— Clear overland flow paths through the site to ensure that upstream overland flood levels do not increase.
— On site detention may need to be considered to ensure no exacerbation of overland flow to downstream areas.
— Consideration of permeable surfaces throughout the public domain to manage stormwater flow and allow infiltration.
— Consideration of Water Sensitive Urban Design (WSUD) principles in landscape design to assist in managing water flows and treatment of stormwater.

5. Public Domain River Flood Considerations
The site is impacted by river flooding on the northern boundary. In addition to the 1:100 year events outlined in an earlier section, consideration should be given to ensuring the public domain is designed to withstand inundation in smaller, more frequent river flood events.

6. Flood Evacuation
The design for the Precinct must be capable of providing a clear and reliable access for pedestrians to an area of refuge above the PMF level. This can be achieved either on the site (i.e. a second storey) or off the site. Note that much of Parramatta CBD will be inundated to a significant depth during the PMF.

Guidance Note: The general expectation is that pedestrian evacuation for people within Powerhouse buildings can be accommodated within the building on levels above the PMF, whereas pedestrian evacuation from the public domain would be through clear and accessible routes to areas external to the Precinct.

7. Flood Modelling: Reference Design
The Reference Design was flood modelled and found to have a negligible flood impact. Note that this design is supported above the flood plain from the yellow line. Previous modelling showing buildings supported from the green line had a slightly more significant but acceptable impact on flood levels was also undertaken.

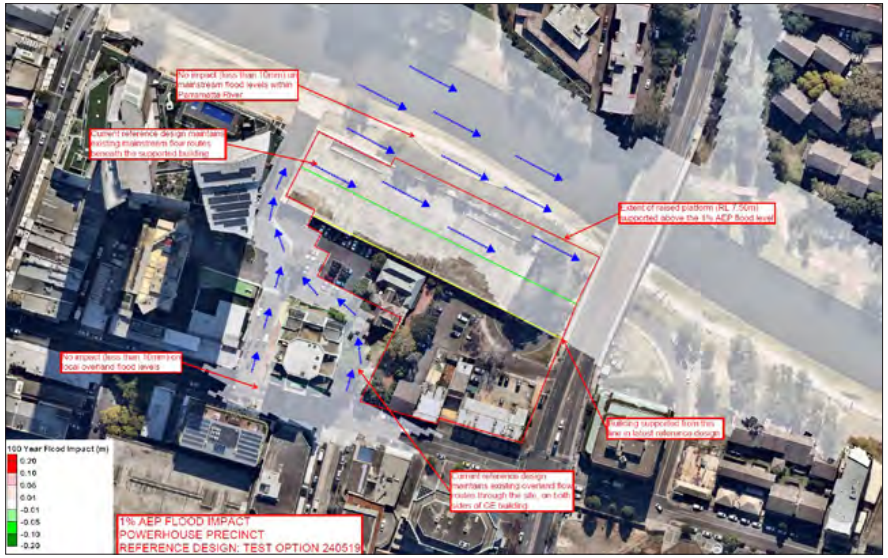


Figure 1 – Flood Impact, Reference Test 28 May 2019

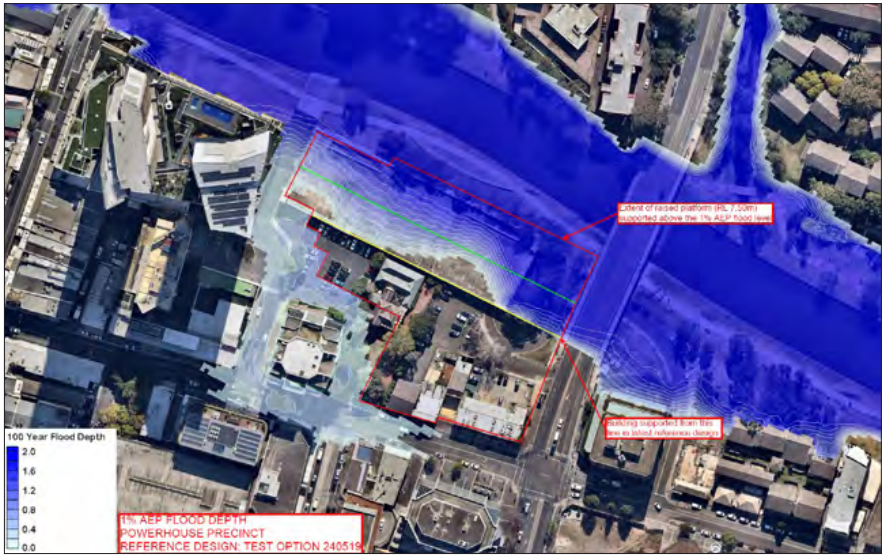


Figure 2 – Flood Depth, Reference Test 28 May 2019

APPENDIX 4: STRUCTURAL

The structural performance requirements addressed in this Appendix include:

— Geotechnical conditions
— Minimum Spans (column free areas)
— Floor loads & ceiling loads
— Vibration criteria

PERFORMANCE REQUIREMENTS
Overall, the desire is for large, open spaces with large clear spans to maximise the flexibility in use. Each Presentation Space should be able to support a range of events: from traditional exhibitions with large objects with moving parts to live music events. The Museum intends to change over floor and suspended displays relatively frequently. To allow for the maximum flexibility, suspension points should be evenly distributed within each space. Should tension arise between loading and span requirements, the general preference is to prioritise clear span spaces.

GEOTECHNICAL CONDITIONS AND FOUNDATIONS
The structural solution developed for the Museum must account for the geotechnical conditions of the site.

Previous Investigations and Reports

Geotechnical Investigation conducted by PSM, September 2016. Report No. PSM3072-006R.
— Field work consisted of drilling, testing and sampling of rock cores and soil samples to determine strength and condition of sub-surface strata within the boundaries of the proposed site. Multiple bore holes conducted over the site provide a rough overview of the varying depths to rock across the site.

Preliminary Site Contamination Investigation conducted by PSM, 1st September 2016. Report No. 51861/104899 (Rev A).
— Assessed the potential for contamination based on historical activities at the site, including potential for soil contamination such as heavy metals, polycyclic hydrocarbons (PAHs), total recoverable hydrocarbons (TRH), benzene toluene, ethylbenzene and xylenes (BTEX), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs) and asbestos. A review of existing data was also conducted to determine whether Acid Sulphate Soils (ASS) were present on site.

Foundations
– Report PSM3072-006R by PSM provides the bearing pressures of sub soil strata for the design of pad footings and piles, shown in Structural Table 1.

The previous Geotechnical report by PSM (Report No. PSM3072-006R) encounters shale at a depth of approximately 5m below surface level and sandstone at a depth varying between 3 to 7.7m below surface level, depending on borehole location.

Structural Table 1

Inferred Unit	Bulk Unit Weight (kN/m^3)	Soil Effective Strength Parameters		Ultimate Bearing Pressure Under Vertical Centric Loading (kPa)	Allowable Bearing Pressure (ABP) Under Vertical Centric Loading (kPa)	Ultimate Shaft Adhesion (kPa)	Elastic Parameters	
		c' *(kPa)*	*ϕ'* *(deg)*				Long Term Young Modulus (MPa)	Poisson's Ratio
Fill	18	0	25	250[1]	100[1]	NA	10	0.3
Natural Soil	18	0	30	420[1]	150[1]	NA	10	0.3
Shale	22	5	30	3,000[2]	700[3]	50	100	0.3
Sandstone[4]	22	N.A.	N.A.	15,000[2]	3,500[3]	800	350	0.25

Note:
1. Pad footings (for ABP of 150 kPa) should have a minimum horizontal dimension of 1.0 m and a minimum embedment depth of 0.5 m.
2. Ultimate values occur at large settlement (>5% of minimum footing dimensions).
3. End bearing pressure to cause settlement of <1% of minimum footing dimensions.

SPAN REQUIREMENTS FOR PRESENTATION SPACES
Presentation Space #1 consists of a single storey open floor space with minimum clear spans of 35m, with longer spans preferred if feasible. The clear room height to the underside of any structure is to be a minimum of 20m.

Presentation Spaces 2–7 are single storey open floor spaces with minimum clear spans of 35m, with longer spans preferred if feasible. The clear room height to the underside of any structure is to be a minimum of 10m. If possible, higher clear heights may be incorporated, but the feasibility of this should be carefully explored in conjunction with the overall height limit and the vertical transport requirements.

LOADS – CEILING AND FLOOR
Floor loads and suspended ceiling loads must in general be in accordance with AS1170.1 except as specified in the table below. Presentation Space 1 should be designed with structural elements which can each accommodate a single point suspended ceiling load of up to 10 tonnes, as well as 4 additional points of suspended ceiling loads of up to 5 tonnes. Presentation Spaces 2–7 should be designed with structural elements which can each accommodate a single point suspended ceiling loads of up to 10 tonnes, as well as 2 additional points of suspended ceiling loads of up to 5 tonnes. The structural elements, for example trusses, supporting these loading arrangements should be spaced at no greater than 7.5 to 10m. Refer to Structural Table 2.

Please note that the Floor Design Live Load (kPa) and the Ceiling Design Loads provided in Structural Table 2 are accumulative for the supporting truss. Given the extensive area of floor that the trusses would support, it is possible to reduce their Live Load kPa. This means that, for example in Presentation Space 3, the floor system spanning between the trusses should be designed for a Live Load of 10kPa while the truss itself can be designed for a Live Load of 5kPa.

VIBRATION CRITERIA
The structure should be designed to avoid and mitigate avoid any disturbances from vibration from adjacent spaces and external sources.

Structural Table 2

Presentation Space	Minimum height (m)	Floor Design Live Load (kPA)	Min Span (m)	Ceiling Design Load – Indicative Loading per Truss (metric tonnes)	Ceiling Rigging Points – Indicative maximum spacing of trusses
P #1	20	20	35	1 x 10 tonne 4 x 5 tonne Evenly spaced along the length of the truss	5 points evenly spaced per truss. Trusses at 10m centres.
P #2	10	20	35	1 x 10 tonne 2 x 5 tonne Evenly spaced along the length of the truss	3 points evenly spaced per truss. Trusses at 7.5m centres.
P #3	10	10 for floor system 5 for trusses	35	1 x 10 tonne 2 x 5 tonne Evenly spaced along the length of the truss	3 points evenly spaced per truss. Trusses at 7.5m centres.
P #4	10	10 for floor system 5 for trusses	35	1 x 10 tonne 2 x 5 tonne Evenly spaced along the length of the truss	3 points evenly spaced per truss. Trusses at 7.5m centres.
P #5	10	10 for floor system 5 for trusses	35	1 x 10 tonne 2 x 5 tonne Evenly spaced along the length of the truss	3 points evenly spaced per truss. Trusses at 7.5m centres.
P #6	10	10 for floor system 5 for trusses	35	1 x 10 tonne 2 x 5 tonne Evenly spaced along the length of the truss	3 points evenly spaced per truss. Trusses at 7.5m centres.
P #7	5	5	20	N/A	
Powerlab		Office	-		
Research/ Education Spaces **General Loading** **Dock and BOH circulation**		As limited by destination load and VT transportation method (hoist or lift). A viable path to transit items from loading dock to Presentation Space must be available.	-		

APPENDIX 5: TRANSPORT, ACCESS AND TRAFFIC

The transport access and car parking performance requirements addressed in this Appendix include:

— Vehicular Access
— Bus and coach service
— Car parking
— Public Transport connectivity
— Pedestrian connectivity
— Cyclist connectivity and facilities
— Loading dock
— NSW Fire and Rescue access

PERFORMANCE REQUIREMENTS

The overarching vision for the transport, access and traffic design for the Powerhouse Precinct is to:

— Provide direct, legible connections to public transport nodes, pedestrian and cycle connections.
— A safe, secure and efficient loading facility separated from main pedestrian thoroughfares.
— Provide adequate bus and coach drop-off/pick-up facilities with sufficient pedestrian queuing space.
— Pedestrian and cyclist connectivity through the site in both east-west and north-south directions.
— Clear separation between front of house and back of house services.

VEHICULAR ACCESS

At present there are three points of vehicular access in to the Powerhouse Precinct. These are:

— Dirrabarri Lane off Phillip Street (**Figure 1**), which is part of a traffic easement to the adjacent Meriton residential tower developments.
— Oyster Lane, which is currently a left turn only exit from the site onto Wilde Avenue and bridge. The Wilde Bridge springing point is immediately to the north of Oyster Lane. (**Figure 2**)
— George Khattar Lane, which is a low clearance (3.5m) road which passes under Wilde Avenue. (**Figure 3**)

Access to the boundary of the site on Phillip Street for drop-offs is also possible although careful consideration will need to be given to how this would work with the Wilde Avenue intersection and Civic Link pedestrian access.

Given the need to maintain the existing traffic easements on the site, Dirrabarri Lane is likely to be the main access point for vehicular traffic into the Precinct. While Oyster Lane may provide a secondary access point, it's location adjacent to a signalled intersection and the bridge will likely trigger post-competition negotiations with the road and planning authorities to deliver. Vehicular access from George Khattar Lane should only be utilised for emergency services medical access or bump-in/bump-out of events within the foreshore zone.

Guidance Notes:

— Access through George Khattar Lane is restricted in height to 3.5m and subject to flood inundation (Figure 3).
— Dirrabarri Lane is also used as an access point to the adjacent Park Royal Hotel and Meriton apartments. This access will need to be maintained.

Figure 1 – View along Dirrabarri Lane from Phillip Street intersection
Copyright Google Maps

Figure 2 – View from Wilde Avenue to Oyster Lane
Copyright Google Maps

Figure 3 – View along George Khattar Lane under Wilde Bridge towards existing carpark
Copyright Google Maps

BUS AND COACH SERVICING
- The Precinct must be able to accommodate a minimum of 3 buses or coaches at any one time while not impeding on Meriton or other roadways.
- Access for buses or coaches should be provided to enable accommodate of 14.5m rigid vehicle with entry and exit from the Precinct in a forward motion.
- Bus and coach set down areas must be serviced with sufficient space for pedestrian access and egress and be located with a clear and accessible path of travel to the Concierge area.

CAR PARKING
- A minimum of 2 parking spaces must be provided for people with a disability, with up to six.

Guidance Note: The car parking should be provided in a location that gives proximity to Internal Spaces BOH and Staff Office and Amenities.

PUBLIC TRANSPORT CONNECTIVITY
The Precinct and surrounding Public Domain must be designed in a manner to allow ease of connections to the following public transport nodes:
- Parramatta Train Station and Bus Interchange
- 'Eat Street' and 'Parramatta Square' Light Rail Stops
- Parramatta Ferry Stop
- Existing bus links

The Precinct and surrounding Public Domain should be cognisant of a future Metro West station within the Parramatta CBD.

Figure 4 is an extract from the Urban Design Guidelines prepared by SJB showing public transport links and carparks.

PEDESTRIAN CONNECTIVITY
The Precinct and surrounding Public Domain should provide for the following pedestrian connections through the site:
- Civic Link- from the site boundary at Phillip Street through the site to the river foreshore.
- River foreshore promenade to connect to the existing promenade to the east and west of the site.

Guidance Note: The Urban Design Guidelines contain further requirements in regard to pedestrian connectivity through the site.

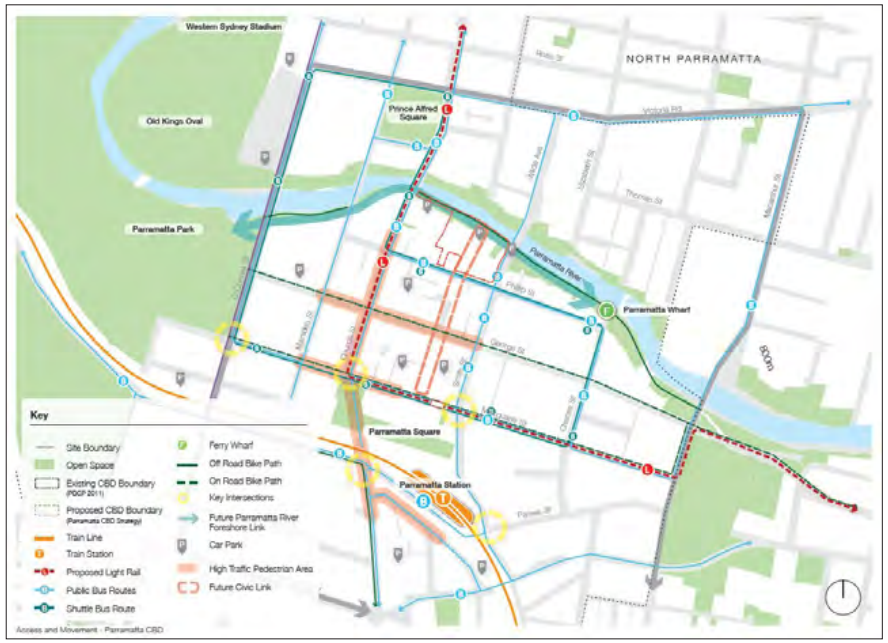


Figure 4 – Public Transport Links

CYCLIST CONNECTIVITY AND FACILITIES
The Powerhouse Precinct must provide for the following cycling connections:
- North-south and east west through the site
- Along the river foreshore

The Precinct must provide the following end-of trip facilities for staff travelling to and from the site via bicycle:
- Change rooms (including lockers and showers)
- Secure bike parking

A staff population of 200 is anticipated.

Precinct must provide for adequate visitor bicycle parking within the public domain.

Guidance Note: The Urban Design Guidelines contain further requirements in regard to cyclist connectivity through and surrounding the site.

LOADING DOCK[S]
Any loading dock facilities must achieve the following performance requirements:
- Be accessed via Dirrabarri Lane.
- Provide safe manoeuvring operations through the provision of external manoeuvring space or a vehicle turntable.
- Allow for maximum separation of service vehicle routes from pedestrian paths of travel.
- Allow for 19m articulated vehicles to access and egress the Precinct in a forward motion.
- Direct accessibility to Presentation Spaces on the ground plane of the Museum.
- Provision of sufficient space to allow for 2 trucks to service the development without the need for queuing on public roadways.
- Support daily deliveries for food and beverage retailers and Museum operations.
- Allow for waste removal. Waste management is to be separated from Collection deliveries and storage.
- Where a secondary dock is provided, further consider of any operational constraints on internal manoeuvring may be required including what space is occupied and how to load upper levels.

Guidance Note: The configuration of the above requirements for the loading dock may be undertaken through one or more dedicated spaces and may be provided directly within Presentation Spaces.

FIRE BRIGADES ACCESS
NSW Fire and Rescue (also known as NSW Fire Brigades) is likely to require fire truck (appliance) access to and from the site in a continuous forwards direction.

- It is anticipated that the primary entry point is likely to be via Dirrabarri Lane.
- Exit onto either Phillip or Wilde Avenue in a continuous forwards direction will be required.
- Access via George Khattar Lane is not practicable as NSW FB appliances require 4.5m overhead clearance and only 3.5m is available
- As fire brigade access is anticipated to be infrequent, the path of travel from Dirrabarri Lane to exit need not be a dedicated roadway – a pedestrianised hardstand capable of navigation by brigades is acceptable.
- Brigades preferred ramp gradient is 1:8 or less – if access is required to buildings closer to the river, consideration should be given to how this will be accommodated.

APPENDIX 6: VERTICAL TRANSPORTATION

The vertical transport performance requirements addressed in this Appendix include:

— Front of House (FOH) lifts
— Front of House (FOH) stairs and escalators
— Back of House BOH lifts

The FOH Vertical Transportation (VT) design and the extent of lifts, escalators and stairs must consider the various populations, traffic patterns, peak visitor events, including the school and large group arrivals.

The BOH VT design must consider the distribution of general goods, food and waste. The movement of artefacts and display equipment must also be carefully considered in the design of the VT for the building.

Forklifts and scissor lifts must be able to be transported to each relevant level of the building.

Where the segregation between the FOH and BOH functions is required the lifts must not impede the security between the areas, especially in any areas accessible 24/7.

The Public / Front of House (FOH) solution may include the following:
— Escalators: to address the high volumes of occupants.
— Lifts: to meet the accessibility requirements of the Building Code of Australia, including catering for prams, those that use mobility devices and special needs persons and those that prefer not to travel via escalators.
— Stairs: to cater for the willing and able and the provision of redundancy in the event of failure to escalators. Consideration should be given to ensuring any mandatory fire isolated stairs can be used for day to day purposes where possible.

The Back of House (BOH) solution may include the following:
— Lifts: to transports hoists and maintenance scissor lifts and goods, waste and artefacts.
— Hoists: for large items, the solution may need to consider the use of large monorail hoists and industrial lifting equipment as necessary to meet the functional requirements of the Museum.

PERFORMANCE REQUIREMENTS
The ingress and egress of the internal vertical circulation in general, are to be considered for both safety and convenience, and also to meet code requirements providing an acceptable level of performance to prevent delays at times of maximum patronage.

The design of the vertical transportation must be completed in accordance with the latest industry benchmarks and performance requirements. All works must comply with relevant codes, standards and guides such as the NCC, DDA, including the CIBSE Guide D Transportation Systems in Buildings.

Traffic studies by a professional must be provided to ensure that the up peak, two-way studies provide the required handling capacity and waiting intervals to meet industry standards.

The VT systems must achieve 20 years Design Life.

Lift and Escalators where used must be low energy type, including lifts with regenerative drives and power to off when not in use. Escalators to move to low speed when not in demand.

The loading capacity of the lifts must by coordinated with the structural floor loadings and point loads of the gallery spaces.

Finishes to be:
— Robust
— Corrosion resistant
— Vandal resistant
— Easy to clean

FRONT OF HOUSE LIFTS
FOH lifts must be provided that:
— Provide ease of access from the Arrivals area to all other levels and circulation spaces for the Presentation Spaces.
— Provide ease of access within the Powerlab
— Provide ease of access within the Staff Office and Amenities
— Provide all abilities access
— Accommodate the peak visitor populations when combined with FOH stairs and escalators

Guidance Note: lift access within the Powerlab and Amenities may be shared if these spaces are designed to be co-located.

FRONT OF HOUSE STAIRS AND ESCALATORS
The design must include FOH stairs and escalators that:
— Provide ease of access from the Arrivals area to all other levels and circulation spaces for the Presentation Spaces.
— Provide ease of access within the Powerlab
— Provide ease of access within the Staff Office and Amenities
— Accommodate the peak visitor populations when combined with FOH Lifts

BACK OF HOUSE
The design must accommodate BOH vertical transport that:
— Provide flat floor access between the General Loading Dock and Decant and the BOH circulation spaces to FOH areas OR facility to lift shipping containers direct to presentation spaces
— Accommodates the nominated sizes and weights of the artefacts and equipment.

APPENDIX 7: SECURITY

The security performance requirements addressed in this Appendix include:

— Crime Prevention through Environmental Design (CPTED)
— Hostile vehicle mitigation
— Protection of public gathering areas
— Emergency services access
— Internal and external building security
— Critical infrastructure protection

PERFORMANCE REQUIREMENTS

This Appendix details security considerations that should need to be considered in developing concept designs. It provides an overview of the range of security considerations that will continue to be refined during the detailed design phase.

The security design must be flexible and adaptable to varying operating modes and uses of the Powerhouse buildings and the surrounding public domain.

The security design should minimise the need for temporary operational security overlay for all activities and events occurring within the public domain.

Security measures for the building perimeter must be capable of preventing unauthorised and uncontrolled entry by pedestrians and vehicles. The number of access points on the building façade should be scalable to suit a range of security needs for varying events.

The design shall incorporate the following security principles:
— Layering security measures to provide defence in depth and redundancy in the event of failure of an individual element.
— An integrated approach to security design to prevent over-engineering of individual elements and use of built form and landscape elements for both functional as well as security purposes.
— Ability to increase security levels in response to higher threat levels.

As a minimum, the Precinct shall include the following security elements:
— An area within the Arrivals and Concierge zone to be allocated for visitor security screening prior to being granted entry into the building proper, including services provision.
— A building control room (ideally integrating security and building management systems).
— A dockmaster or secondary control room at the loading dock to control and manage access for delivery and service vehicles, and contractor entry.
— Spatial provision for security systems infrastructure (e.g. CCTV, electronic access control, motion detectors, people counters, alarms, intercoms, duress/help points) in risers, cupboards and racks.
— A preference for electronic access control for perimeter and internal doors and gates rather than mechanical access control.
— Storage area for deployable security equipment (e.g. walk-through metal detectors, crowd control barriers, tensa-barriers).

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Crime Prevention through Environmental Design (CPTED) principles shall be incorporated into the site's design in order to ensure the safety and security of Precinct visitors and to promote positive and legitimate uses of the public domain.

In NSW, CPTED guidelines promote the following principles as central to designing out crime:
— Natural surveillance
— Natural access control
— Territorial reinforcement
— Maintenance and management

The practical means by which these principles can be applied may include the following strategies:
— Allowing for clear sight lines into and within the public domain
— Adequate lighting
— Minimising concealed or isolated pedestrian routes
— Designing out areas of potential entrapment
— Ease of maintenance and space management
— A layout to support use of CCTV and lighting systems

HOSTILE VEHICLE MITIGATION

The design must consider the implementation of measures to protect the site from attack by hostile vehicles including:
— Unscreened vehicles parked outside the perimeter but immediately adjacent public gathering areas, critical assets or infrastructure;
— Unauthorised vehicles gaining access without force and being driven within an unreasonable proximity to gatherings, or critical assets or infrastructure;
— Unauthorised vehicles gaining access through forced entry to areas of public gathering, critical assets or infrastructure.

Appropriate and proportionate security measures shall be proposed, which should consider any or all of the following:
— Architecture: buildings and structures, reinforced and anchored street furniture, landscaping,
— Low walls etc.
— Active and passive vehicle security barriers: fixed, removable and retractable bollards.
— Traffic calming: speed humps, kerbing, chicanes, angled (not straight) approaches to pedestrian areas.
— Traffic management: parking (legitimate or otherwise), vehicle set-down areas, disability access.

In addition to achieving the primary objective of minimising vehicle security risks to the site, the design of hostile vehicle mitigation shall:
— Not unduly impede pedestrian flows
— Remain consistent with the design aesthetic of the site
— Ensure alternative solutions to bollards
— (Provided the alternative is capable of achieving the equivalent performance requirement to defend against vehicle attack – to be further detailed during design development in a Security Risk Assessment process)
— Seek to minimise the ongoing maintenance and staff involvement required for HVM deployment or operation
— Enable day-to-day operations (including access by service and maintenance vehicles) to occur without undue hindrance
— Represent a subtle and non-overt response to the risks posed by any hostile vehicle incidents.

PLACE OF PUBLIC GATHERING
The Precinct public domain may also serve as an event space for large public gatherings. In order to provide adequate flexibility and scalability of the Precinct, the following requirements shall be incorporated into the design:

- Use of permanent fencing, high walls or other structures to delineate or secure spaces within the public domain shall be minimised.
- The design shall consider means by which the operator can establish a perimeter for event spaces that does not rely exclusively on use of temporary measures (e.g. crowd control barriers or other temporary fencing). The site will host both ticketing and non-ticketed community events that may not require a formal perimeter or patron screening.
- Spatial allocation of an external security screening area for patrons of events held in the public domain, ideally set back from the building façade.
- Provision of ground-based electrical services for screening equipment (e.g. walk-through metal detector) erected in the public domain.
- A zero grade for the allocated screening area to ensure proper function of equipment.

EMERGENCY SERVICES
The design of the site must ensure that adequate access to and around the site is provided for emergency services operational requirements, including the use of aerial fire appliances.

A minimum width of 3.2m shall be provided at vehicle access points to allow fire appliances to gain access without the need for manoeuvring.

Perimeter security measures (e.g. sliding/swinging/rising rates, bollards or other vehicle security measures) must not unnecessarily impede emergency service vehicles from gaining access. Where emergency service vehicle access requirements coincide with hostile vehicle mitigation requirements, rapidly retractable or removable elements should be used.

Where access requirements coincide with vehicle mitigation requirements, the installation of a remotely-activated retractable bollard should be considered.

INTERNAL SECURITY
Internal security layers shall provide robust separation between public and restricted areas of the site, for example between front and back of house areas.

A zoned approach shall be applied by sub-dividing the internal areas into zones based on criticality and sensitivity of assets and operations. Security measures shall be applied proportionately for each zone.

The location and design of areas on the building façade which may be open to the public (e.g. retail and food and beverage facilities, amenities) must not permit uncontrolled access into the interior of the primary building.

The design must account for the security considerations outlined in Table 1.

CRITICAL INFRASTRUCTURE PROTECTION
The site's critical infrastructure (e.g. power and data services and utilities) must be appropriately protected through the application of robust perimeter barriers and access controls.

Critical infrastructure areas should be placed away from publicly accessible areas to reduce the likelihood of unauthorised access and to maximise the distance to areas where a major explosive incident could conceivably occur (e.g. screening plazas, vehicle access points).

Utilities infrastructure servicing the site should, as far as possible, be incorporated into the primary building structure and not placed elsewhere in the public domain that will require additional security controls to be installed.

Table 1 – Internal Security Considerations

Space	Security consideration
Concierge and Arrivals	Spatial and services provision for establishing a visitor screening area.
Presentation Spaces 1–7	Presentation spaces should be designed as individual protected zones with solid walls and floor and ceiling slabs. All doors should be lockable. The design shall not compromise the eefficient deployment of security systems to monitor access and activity in a presentation space.
Residences	Provision for security systems infrastructure for all building levels and the full extent of floorplates.
Co-working spaces	Provision for security systems infrastructure for all building levels and the full extent of floorplates.
Loading dock	Physical separation from internal spaces to minimise potential for unauthorised access into the building proper. Must be capable of being fully secured when not in use.

APPENDIX 8: ACOUSTIC REQUIREMENTS

ACOUSTIC REQUIREMENTS
All Presentation Spaces are to be acoustically isolated from external noise and adjacent uses. The façade and roof structures are to be designed to protect against noise ingress and from acoustic noise. As detailed within the Vision and Operational aspects of this brief there will be multiple concurrent programs including immersive screen work, performance, concerts and exhibitions across the Powerhouse Precinct. The design of the plant rooms and the operation of plant must also be acoustically treated to ensure that they don't impact on precinct programs.

There will also be an operational requirement [subject to submitted designs] of light and sound airlocks at the entry to each presentation space. The submitted concept designs should convey the acoustic performance that the presentation spaces have been designed to meet.

Other areas of the Powerhouse Precinct including the Powerlab, food and beverage retail are to meet the acoustic requirements of the Building Code of Australia and take into consideration separation from adjacent activity.

APPENDIX 9: COLLECTION LOGISTICS

The Museum of Applied Arts and Sciences manages its Collection in accordance with best practice collections management standards.

The Collection comprises approximately 500,000 items across a very broad range of size, materiality and fragility. For practical purposes, the Museum classifies its Collection into multiple size categories:

Extra Small
— 150 mm2
— Pocketable

Small
— 500mm3
— Up to 10kg
— 1 person can handle safely
— Can be housed on standard size compactus shelves

Medium
— Up to 2400 x 1200 x 1200mm (l x w x h)
— Requires lifting equipment to handle safely

Large
— Up to 6000 x 2300 x 2300mm (l x w x h)
— Able to be moved in standard size truck
— Able to be moved using Museum resources

Very Large
— Requires specialist external resources (equipment and/or qualifications)

It is noted that international and domestic touring exhibitions and items on loan to the Museum will have similar physical classifications to those defined for the Museum Collection. International consignments of collections/exhibits also necessitate specific facilities considerations, including compliance requirements under the Known Consignor Scheme, and Biosecurity Act 2015 (Cth). The Powerhouse Precinct will require Back of House facilities that support and enable the safe movement of collections/exhibits and other equipment. This includes circulation, temporary storage and areas for object preparation, condition assessment and minimal treatment and digitisation. It is assumed these spaces will be temporary and able to be configured according to display-specific requirements. Temporary storage for transport crates and packing material will also be required. Space allocation will be necessary for disaster bins and storage of movement and handling equipment etc.

Key parameters include:
— Appropriate and sufficient access will be provided at the Powerhouse Precinct for manoeuvring semi-trailers of up to 60ft in trailer length. Semi-trailers will need to be able to reverse into the loading docks and will require space to turnaround in. The length of semi-trailers may also extend with trailer lengths going out to 60ft in the future to accommodate larger sea freight containers.
— Separate loading docks for collections/exhibits and general shipments are required to maintain Collection security, legislative compliance and the integrity of integrated pest management. In particular, food stuff and waste disposal should be handled via a separate loading dock.
— The dock and Collection preparation areas will comply with requirements under the Known Consignor Scheme and Biosecurity Act 2015, including having a secure controlled loading dock able to be closed to Collection deliveries only, and secure storage space for temporary storage of objects and packing materials.
— A security station and security control measures including CCTV coverage will provide oversight of the collections/exhibits loading dock, allowing visibility of approaching, departing and docked trucks and consignments.
— All spaces of the ground plane are able to support direct loading truck access.
— The loading dock will be enclosed, with a separate ventilation system and will have direct access to collection/exhibit lift.
— Street, building and loading dock access will be of sufficient scale and dimensions to accommodate the necessary delivery vehicles and equipment without protrusions. The loading bay and dock design should allow for the entire cab and body of the largest trucks to be fully enclosed and secure.
— The loading dock will need to have clear height (with no protruding sprinkler heads or piping or other inclusions below that height clearance) to accommodate truck heights of 5.0m, with additional clearance for use of lifting equipment etc. Low loaders will need access and sufficient loading limits to be able to transport over-size and overweight objects to/from the Museum, and height availability will be required to enable cranes to lift these objects off the trailers and transport them into the exhibition space.
— All access corridors should be of a consistent width, height and floor loading to allow movement of large objects into and within the Powerhouse Precinct. Turning circles within such spaces should also reflect the dimensions of maximum standard objects/load. Height, width and floor loading through corridors should also be consistent with collections/exhibition lifts.
— Corridor width of 4m is required, with corridor and door clear height of 8m. An estimated maximum object length of 6m is to be assumed.
— Floor loading limits of the Powerhouse Precinct will need to be able to handle the weight of loads and cranes or other equipment for the lifting of the largest and heaviest objects proposed for the presentation spaces to avoid the need for future under-pinning of floors.
— Load limits through access areas and buildings will be sufficient to undertake the necessary logistics – matching the floor loading of the various presentation spaces. Loading docks will require additional capacity to accommodate truck weight in addition to loads and movement equipment.
— A gantry or mono-rail crane would be highly beneficial, running from the loading dock through the corridors to the exhibition spaces to move heavy or over-sized objects.
— Street access surrounding the Museum will be important – street widths will need to provide access for wide loads when cars are parked at the kerb. Turning circles will need to accommodate long length low loaders for the movement of over-size objects, power & communications cables in the approach areas should all be underground, and services (power, water, communications and sewer) should all be at sufficient depth underground so as to not impact the access of heavy loads.
— The loading dock and all access corridors should be wide and allow sufficient space to move the biggest objects envisaged to need to go into the Powerhouse Precinct.

Additional logistics notes for coming phases of work:
— The planning application will need to consider the impact of Museum operations on surrounding residential developments – as quiet enjoyment hours will be impeded by the need to transport oversize and large volumes of cargo to & from the site during the quiet traffic hours – night times and very early morning.
— Substantial redevelopment is planned for the area and some of this may conflict with access e.g.: Light
— Rail, other construction, other infrastructure and potential construction programming implications.
— Bridges, tunnels and overpasses in the surrounding area and throughout the route between sites, will need to be able to handle the weights and sizes of loaded tractor trailers and low loaders, to the extent ever to be envisaged for the Powerhouse Precinct.


NSW GOVERNMENT
Museum of Applied Arts & Sciences
MAAS
MALCOLM READING CONSULTANTS

APPENDIX C:
DESIGN INTEGRITY PANEL REPORT

DESIGN INTEGRITY ASSESSMENT REPORT

POWERHOUSE PARRAMATTA

INFRASTRUCTURE NSW

REVISION 1

22 APRIL 2020

Powerhouse Parramatta - Competition Image

Contents

1. INTRODUCTION

This Design Integrity Assessment details how the proposed design for the Powerhouse Parramatta State Significant Development Application (SSDA) is consistent with the winning competition scheme. The Design Integrity Panel (DIP) has reviewed the SSDA documentation and considers the proposed changes, as outlined in this report, are consistent with the design excellence principles of the Moreau Kusunoki/ Genton winning competition scheme.

The primary focus of the design and project teams following the competition has been to address the operational aspects of the Museum design and has focused on the development of the design to align with operational, brief area and jury feedback. The major features of the design including; the exoskeleton, east and west building alignment, civic link, building heights, vertical transport arrangement and 'ma' circulation spaces have all been maintained through the development of the SSDA documentation.

This Design Integrity Assessment Report should be read in conjunction with the following documents which have been prepared for the purposes of the SSDA submission:

– Architectural Drawings

– Landscape Drawings

2. DESIGN INTEGRITY PANEL (DIP)

The Design Excellence Strategy requires formation of a Design Integrity Panel to monitor the design development process following the design competition. The Design Integrity Panel is to include representatives of the Jury.

The DIP has been formed with Terms of Reference to meet the design excellence strategy.

2.1 Constitution and Membership

Following the conclusion of the competition process The Powerhouse Parramatta Design Integrity Panel (DIP) was established comprising membership of:

– Naomi Milgrom AO, Independent Chair

– Peter Poulet, Central City District Commissioner for Greater Sydney Commission, Trustee Museum of Applied Arts and Sciences

– Kim Crestani, Parramatta City Architect

– Wendy Lewin, Independent Architect

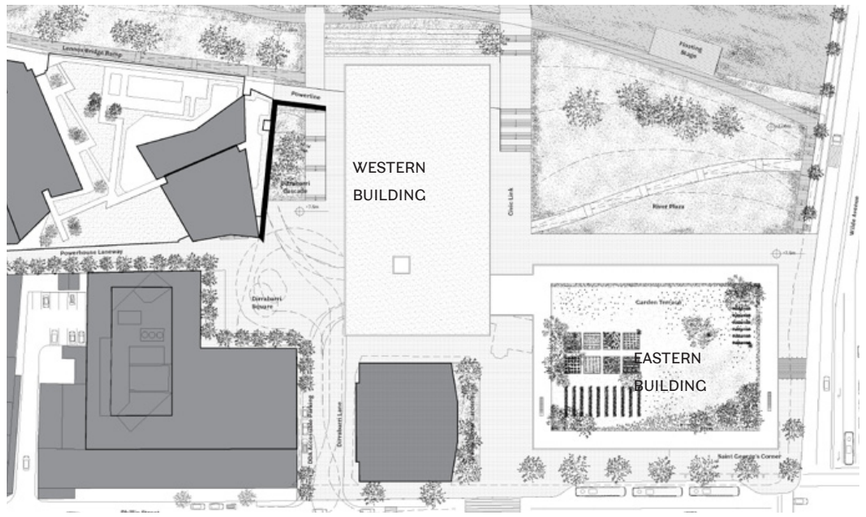
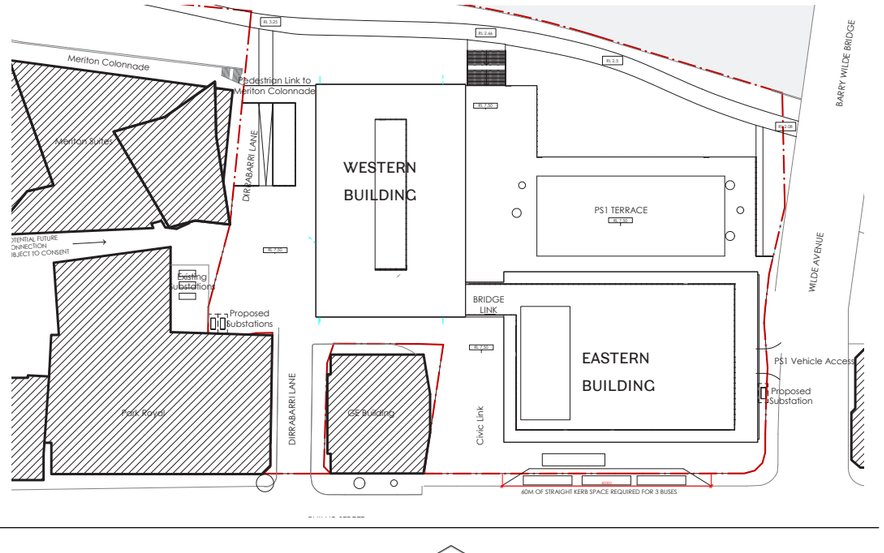
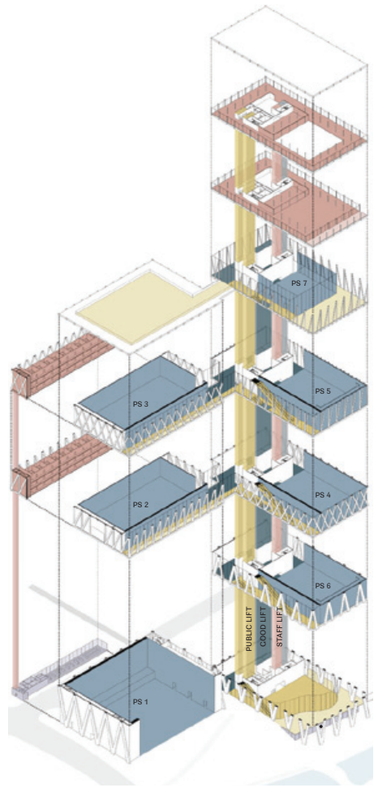
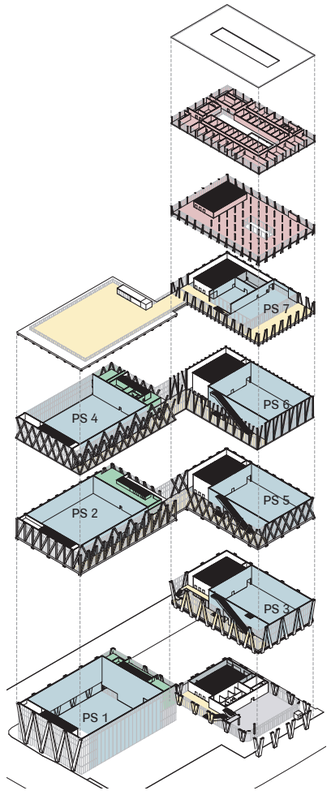
The purpose of the Design Integrity Panel is to provide advice and support to Infrastructure NSW (INSW) and the Powerhouse on the design development for Powerhouse Parramatta.

3. DESIGN AMENDMENTS

3.1 Architectural Design

The architectural team has enhanced the design in response to operational feedback and engineering advice. Table 1 provides the details of departures from the competition winning scheme to the current proposal.

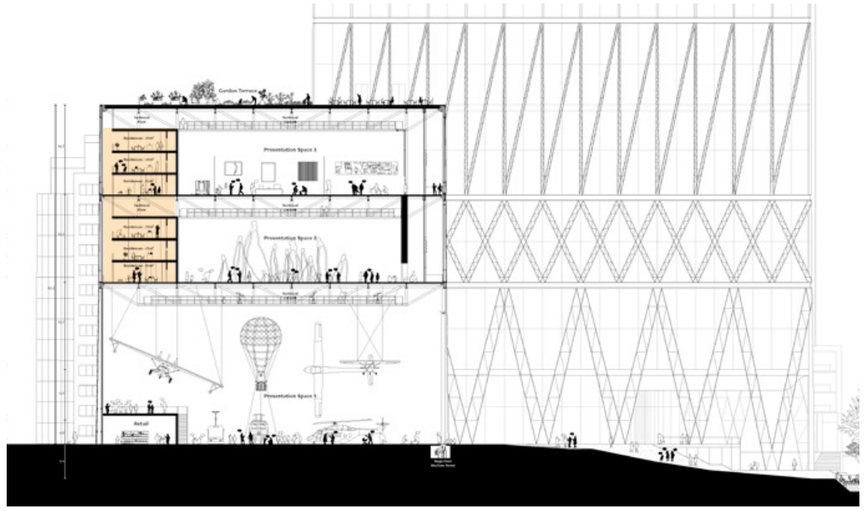
Table 1: Changes to the Architectural Design

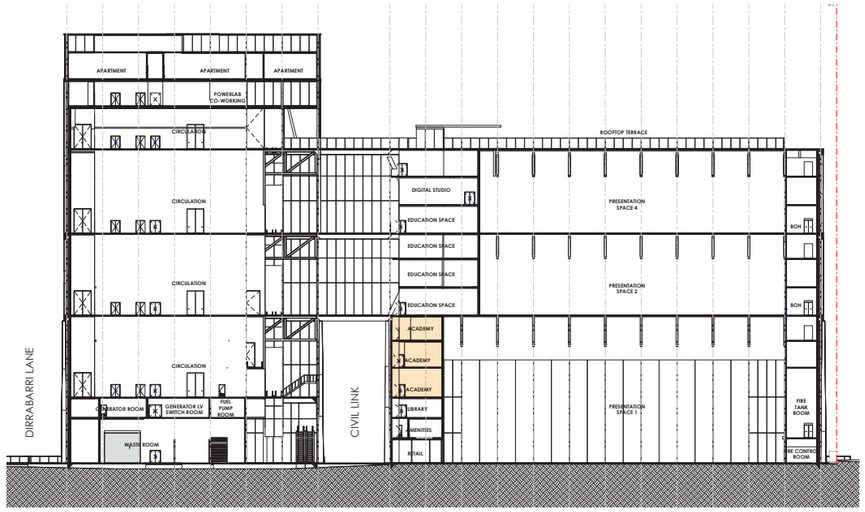
Design Changes	Design Competition Concept	Proposed Design (April 2020)
REDUCTION IN BUILDING ENVELOPE To ensure alignment with the overall museum program and project budget, the building footprint has been modified. Eastern building floorplate size: Competition scheme: 54m x 72m SSDA submission: 48 x 72m Western building floorplate size: Competition scheme: 42m x 78m SSDA submission: 42 x 66m		
PRESENTATION SPACE STACK (GENERAL) The building stack of Presentation Spaces has been revised in response to museum operations. Presentation Space 3 and Presentation Space 4 have relocated within the building stack.		

Design Changes	Design Competition Concept	Proposed Design (April 2020)

ACADEMY LOCATION (EASTERN BUILDING)

The Academy provides accommodation for regional and remote students and has been relocated to be co-located with the educational program in the eastern building. This aligns with Powerhouse operational and program adjacency objectives. It also allows for these programs to have a more secure and independent entry and lobby.

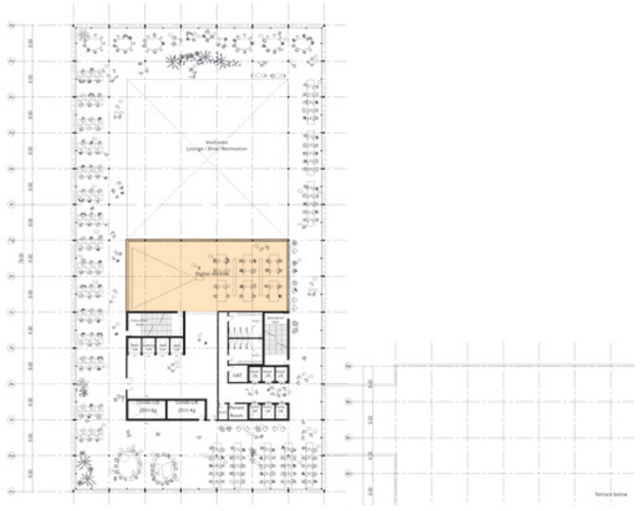


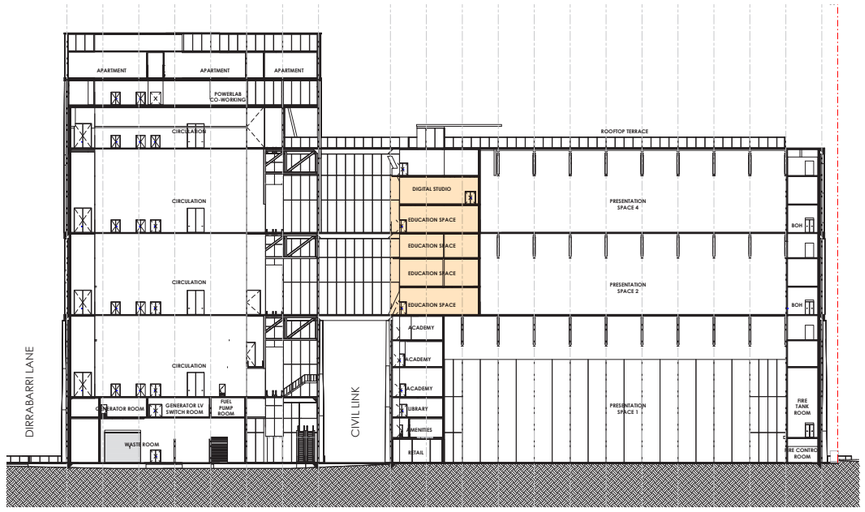


CINEMAS, DIGITAL STUDIOS AND EDUCATION (EASTERN BUILDING)

The competition scheme located the Digital Studios in the western building. The Cinemas were not included in the Stage 2 Brief.

The Cinema, Digital Studios and Education program has been consolidated and relocated to the eastern building, sleeving Presentation Space 2 and 4, and co-located activating the Civic Link. Cinemas have been located with an adjacency to the rooftop garden. This aligns with Powerhouse operational and program adjacency objectives.

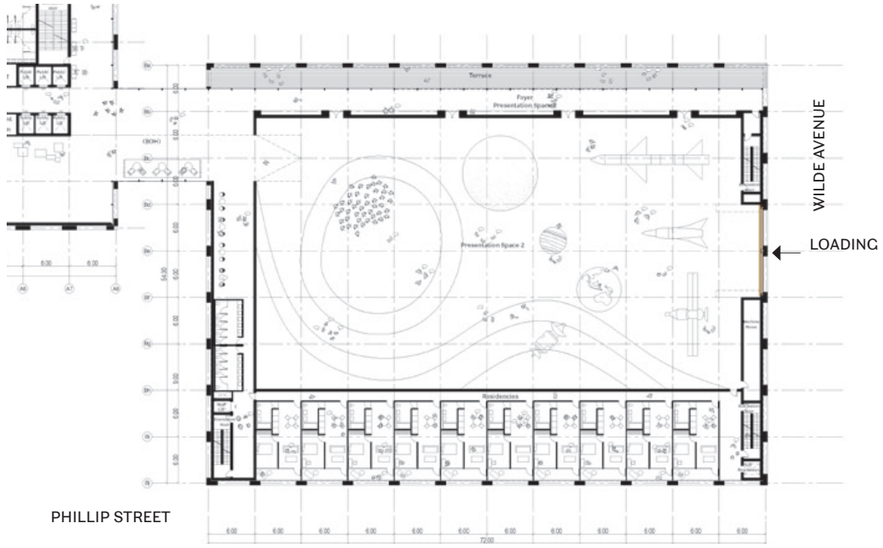


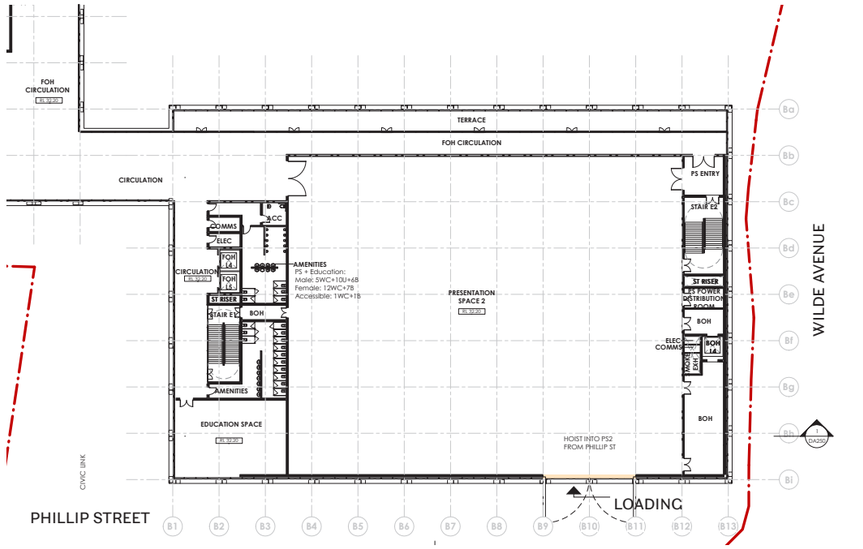


PRESENTATION SPACE 2 LOADING (EASTERN BUILDING)

In the competition scheme, direct loading of PS2 was achieved through a large opening on the East Façade (facing Wilde Avenue).

In response to traffic and planning advice, in the current scheme, loading is achieved through a large opening to the southern façade addressing Phillip Street. This design change assists in the activation of Phillip Street (refer also landscape design changes) and also addresses restrictions in access off Wilde Avenue due to busway corridor.



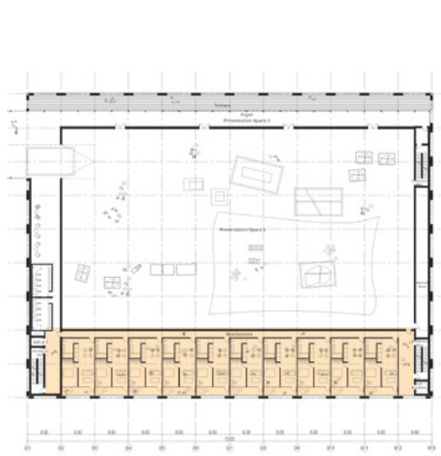


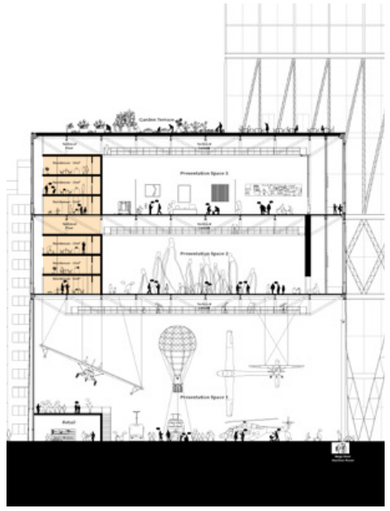
Design Changes	Design Competition Concept	Proposed Design (April 2020)

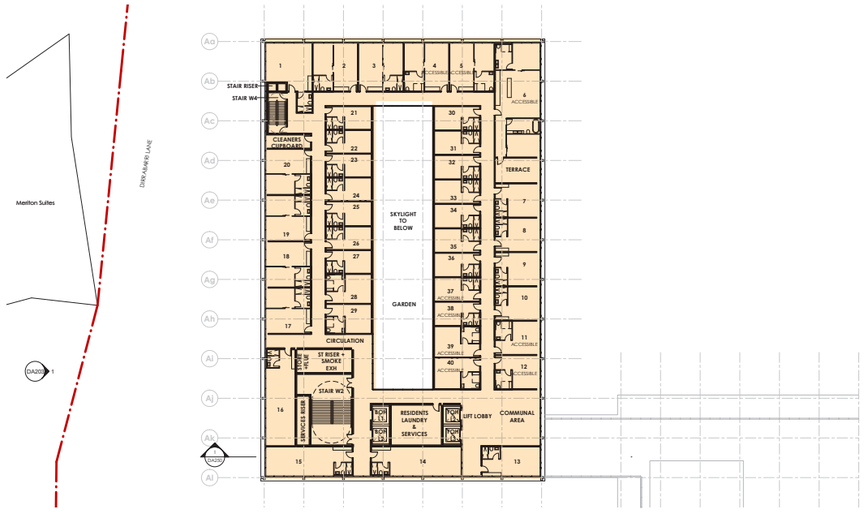
POWERLAB RESIDENCES (WESTERN BUILDING)

The competition scheme located the Powerlab residences to the southern face of the eastern building addressing Phillip Street, to activate this façade and interact with the urban scale. The location of residential posed operational issues regarding acoustics and ability to achieve sound and light isolation and 'black box' requirement for Presentation Spaces 2 and 4.

The Powerlab Residences have been relocated to the rooftop of the western building, taking advantage of increased access to ventilation and light, and views across Parramatta River. The revised location integrates additional green space and amenity for the residents through incorporation of a central terrace, and consolidates the program.



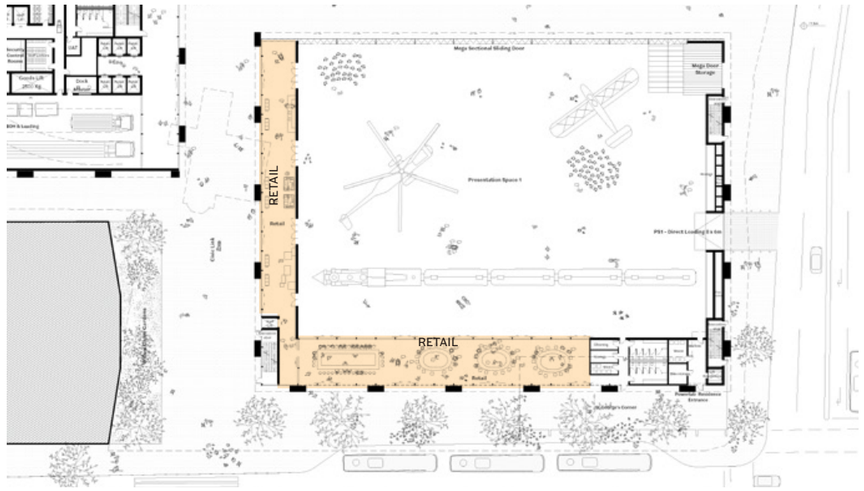




PHILLIP STREET RETAIL (EASTERN BUILDING)

The competition scheme located Retail to the south of Presentation Space 1, facing Phillip Street. This location posed operational issues regarding the ability to achieve acoustic, sound, light isolation and 'black box' requirement for Presentation Space 1.

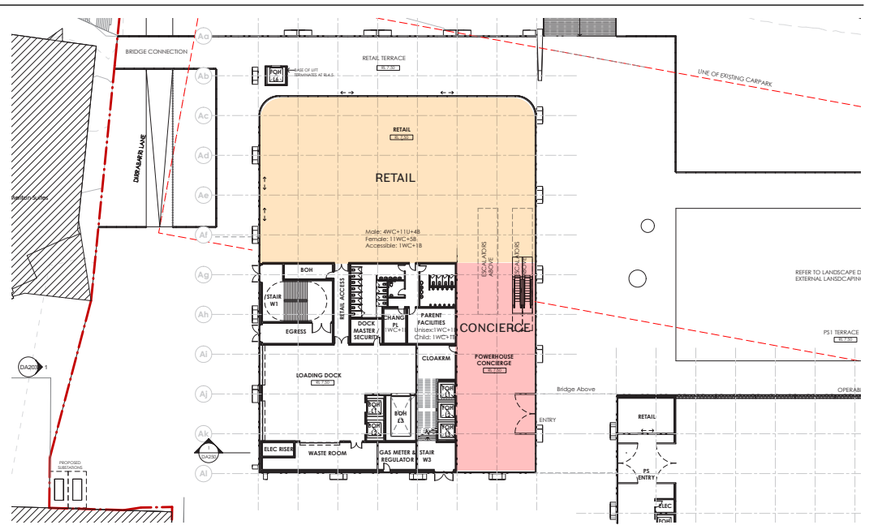
In response, retail has been consolidated to activate the Civic Link and the northern ground level podium. Phillip Street activation is achieved through the incorporation of large doors along the southern Phillip Street edge which if exhibitions allow can be open for public access and the amended landscape design. The retail façade to the north of the western building has been squared off to accommodate the consolidation of the retail program.



CONCIERGE (WESTERN BUILDING)

The competition scheme co-located Concierge and retail to the north of the eastern building.

To enhance visitor experience, circulation legibility and address the arrival of 90% visitation coming from the south, concierge has been relocated to engage in the Civic Link. This revised location enhances legibility and better resolves the visitor experience and Powerhouse arrival sequence.



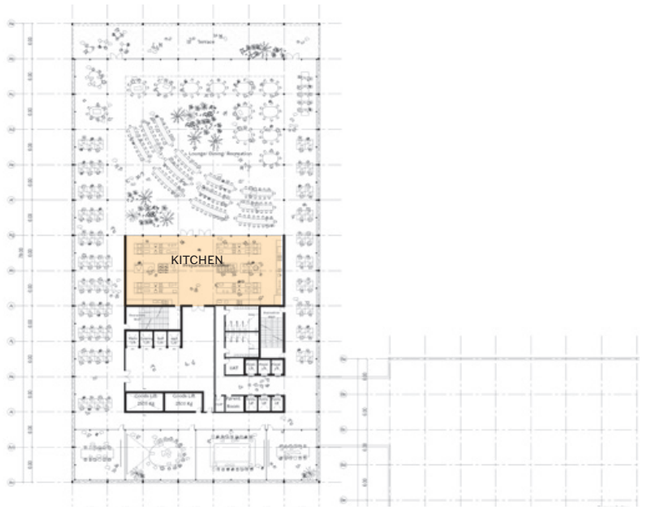
Design Changes

POWERLAB KITCHEN (WESTERN BUILDING)

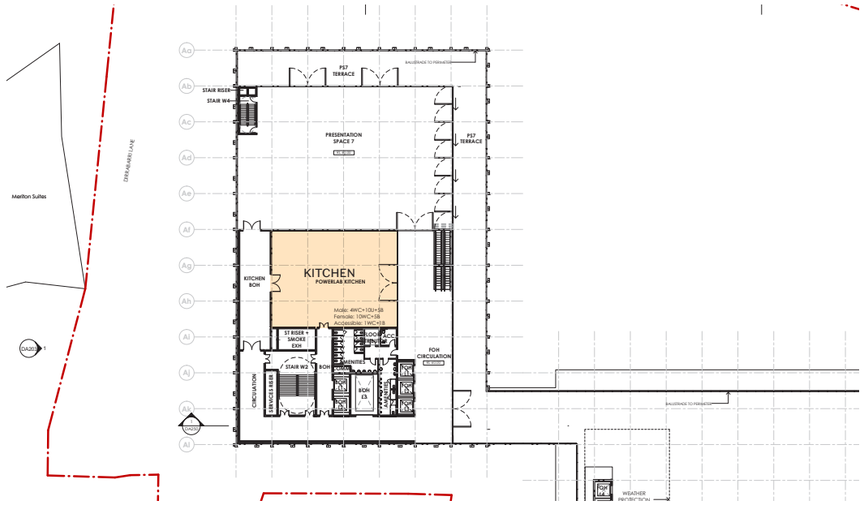
The competition scheme co-located the Powerlab Kitchen with the Powerlab co-working spaces.

In response to the developing operational principles for the Powerlab Kitchen, the design team has relocated the Powerlab Kitchen to the same level as Presentation Space 7.

Design Competition Concept



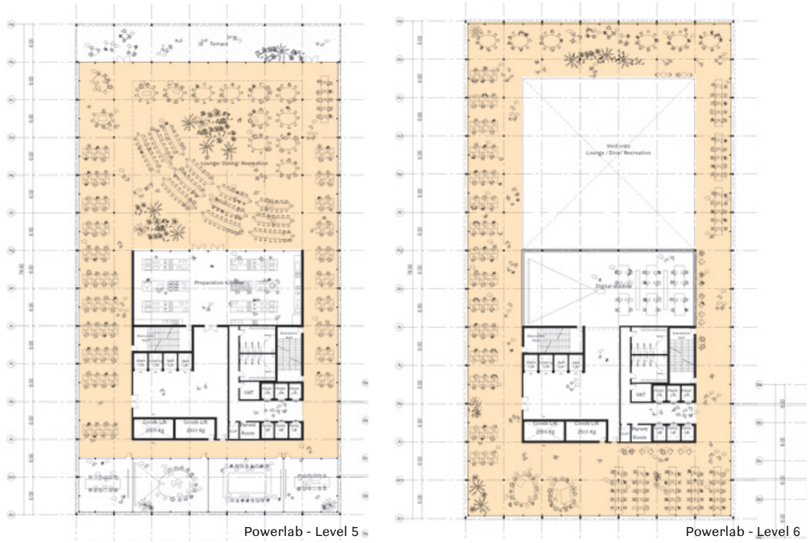
Proposed Design (April 2020)

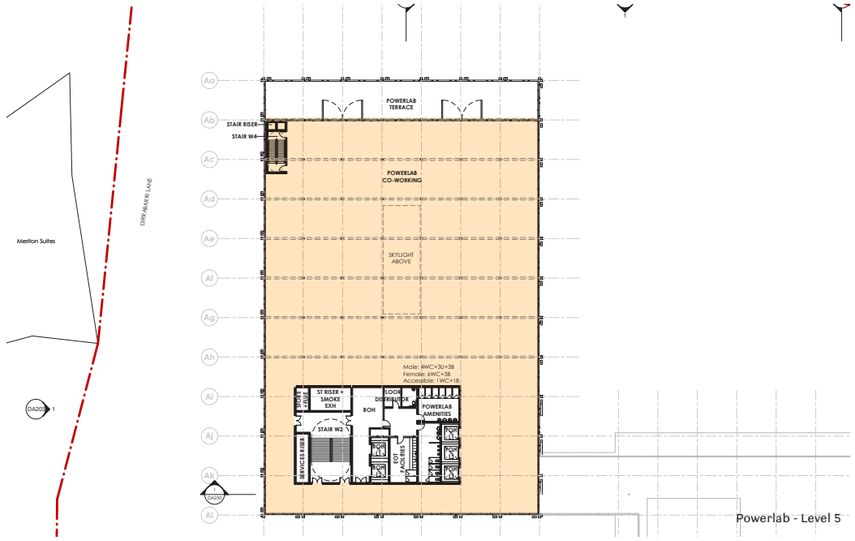


POWERLAB CO-WORKING

The competition scheme had the Powerlab Co-working across two floors, and combined with some Education and Community programs.

The current scheme consolidates all Co-working on one floor, responding to the Powerhouse's operational objectives.





3.2 Landscape Design

The landscape design as a result of design has developed to respond to feedback received following the competition submission. The Landscape design that formed the competition submission had a number of items that sat beyond the project boundary. These items have been removed from the landscape design scope.

Table 2 outlines the changes from the competition scheme to the current proposal. Figure 3 is the landscape concept from the winning competition entry. Figure 4 is the landscape proposal for the State Significant Development Application.

Table 2: Changes to the Landscape Design

Design Changes	
1. RIVER TERRACE	1.1 Addition of a large northern terrace accessed directly from Presentation Space 1 to achieve stronger activation of the northern public domain and engagement with Parramatta River. The revised design aligns with Powerhouse operational requirements to enable passive and active recreation and programming and addresses the required flood levels. 1.2 Additional shaded landscape spaces have been added to the riverfront for protection and to encourage riverside activation of the public domain.
2. RIVERFRONT	2.1 Large Riverfront space to both the east and west buildings. The change to a riverfront space better aligns with the flood planning levels as well as providing usable open space. 2.2 Public lift access has been incorporated into the landscape design to enable universal access across all levels of the public domain.
3. PHILLIP STREET	3.1 All weather protection for sheltered arrivals. 3.2 Loading access and clearance requirements from Phillip Street into Presentation Space 2 through southern façade
4. WILDE AVENUE	4.1 Additional street trees to provide screening to the eastern loading and services and shading to the eastern edge of the building.
5. DIRRABARRI LANE	5.1 Reduction of Dirrabarri Cascade and incorporation of ramp to enable access to the river to meet Emergency Vehicle access (EVA) and flooding requirements. East-west highline access has been maintained in the landscape design through a bridge link over the EVA route
6. CIVIC LINK	6.1 Additional landscaping including planting and shaded seating areas to the east of the River Retail and Civic Link to support a more diverse public domain and encourage external occupation
7. RIVER RETAIL	7.1 Relocation of the northern Civic Link stair further north to enable river access and provide more generous clear space between the façade for retail activation. 7.2 Lift access has been incorporated into the landscape design to enable universal access to the public domain. The ramp previously provided has been removed.

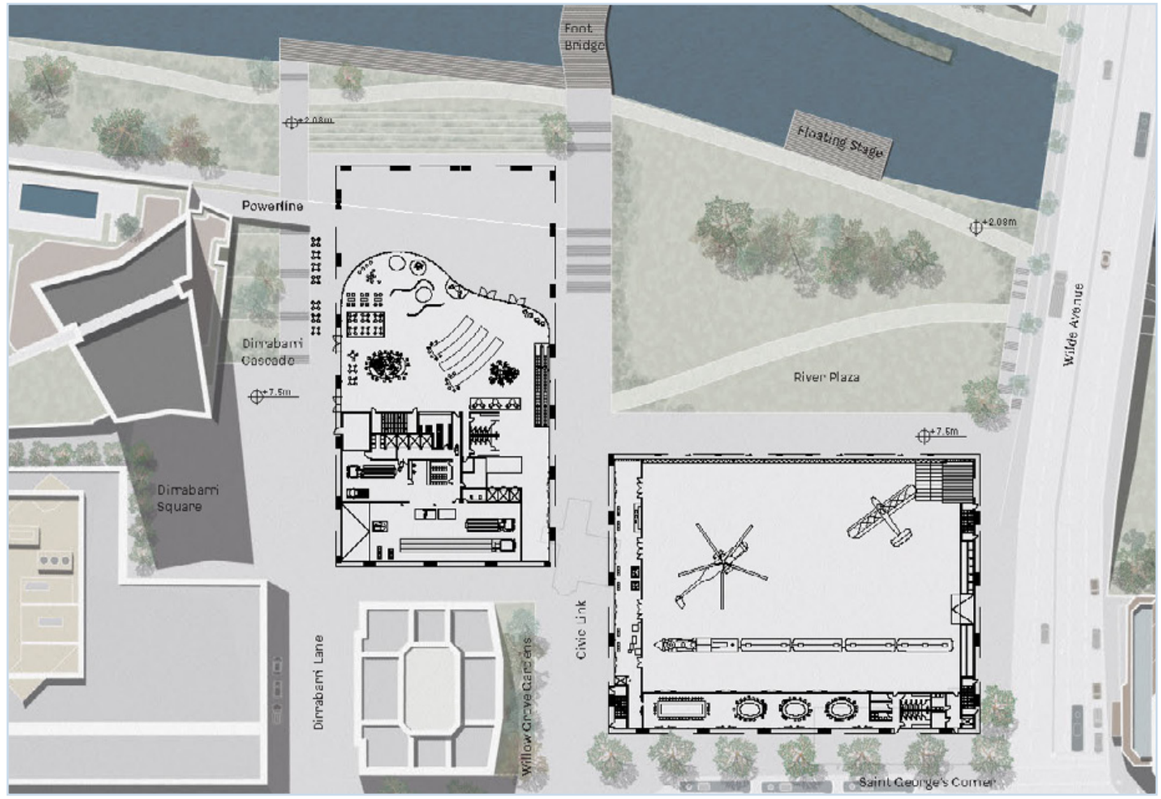


Figure 3 - Design Competition Concept

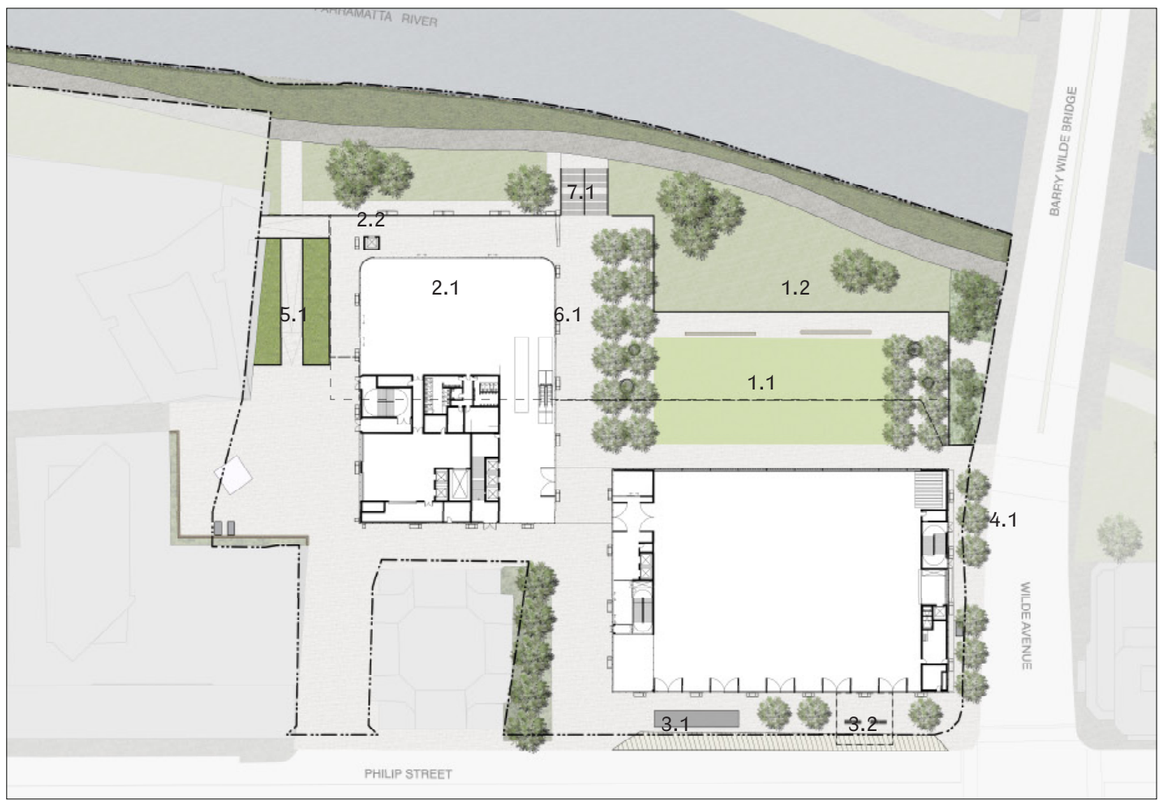


Figure 4 - Proposed Design (April 2020)

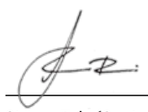
Over the past 3 months, the design team has been working on developing or refining the competition scheme to respond to the program areas and operational requirements, while preserving the main concepts and qualities of the design.

The overall form and articulation of the buildings, as well as the way they open up towards the landscape and define a porous precinct with a large public space, has been maintained. The structural concept of the exoskeleton is still present, allowing interior flexibility. The ongoing optimization of the lattice system will ensure the lightness and transparency, that is fundamental to the building's identity and the memorable visitor experience. Despite the changes in program layout, the intuitive circulation and way finding have been maintained. This is an element that will continue to be refined during the design development phase. The Presentation Spaces are still treated as "solid/opaque" volumes within a more transparent envelope with Front-of-House zones that address the landscape. The "ma" flexible in-between space has been optimised in response to overall area reductions. Its potential in certain parts of the building is preserved as it has a lot to offer to the Powerhouse and its future visitors.

Overall, we believe that the SSDA scheme is consistent with the Competition Design, despite the few adjustments that have been made, and we are committed to ensuring that throughout the design development.

Nicolas Moreau (Moreau Kusunoki)

Hiroko Kusunoki (Moreau Kusunoki)



Steven Toia (Genton)

The Design Integrity Panel has reviewed the design changes from the competition winning scheme to the proposed SSDA design submission and is of the opinion that the changes proposed to the architecture of the building are consistent with the design intent of the competition winning design.

The Panel have reviewed the changes in the design of the landscape and public domain from the competition winning scheme and it supports further design development of the public domain landscape design in collaboration with key stakeholders, specifically the riverfront area and the Museum ground plane.

The Panel recognises the design challenges posed by the topography and the requirements with respect to complying with the flood modeling requirements and are confident that ongoing design development and utilisation opportunities in collaboration with key stakeholders will improve the public domain outcomes.