POWERHOUSE PARRAMATTA

# RESPONSE TO SUBMISSIONS REPORT

Ethos Urban


NSW GOVERNMENT

ETHOS URBAN

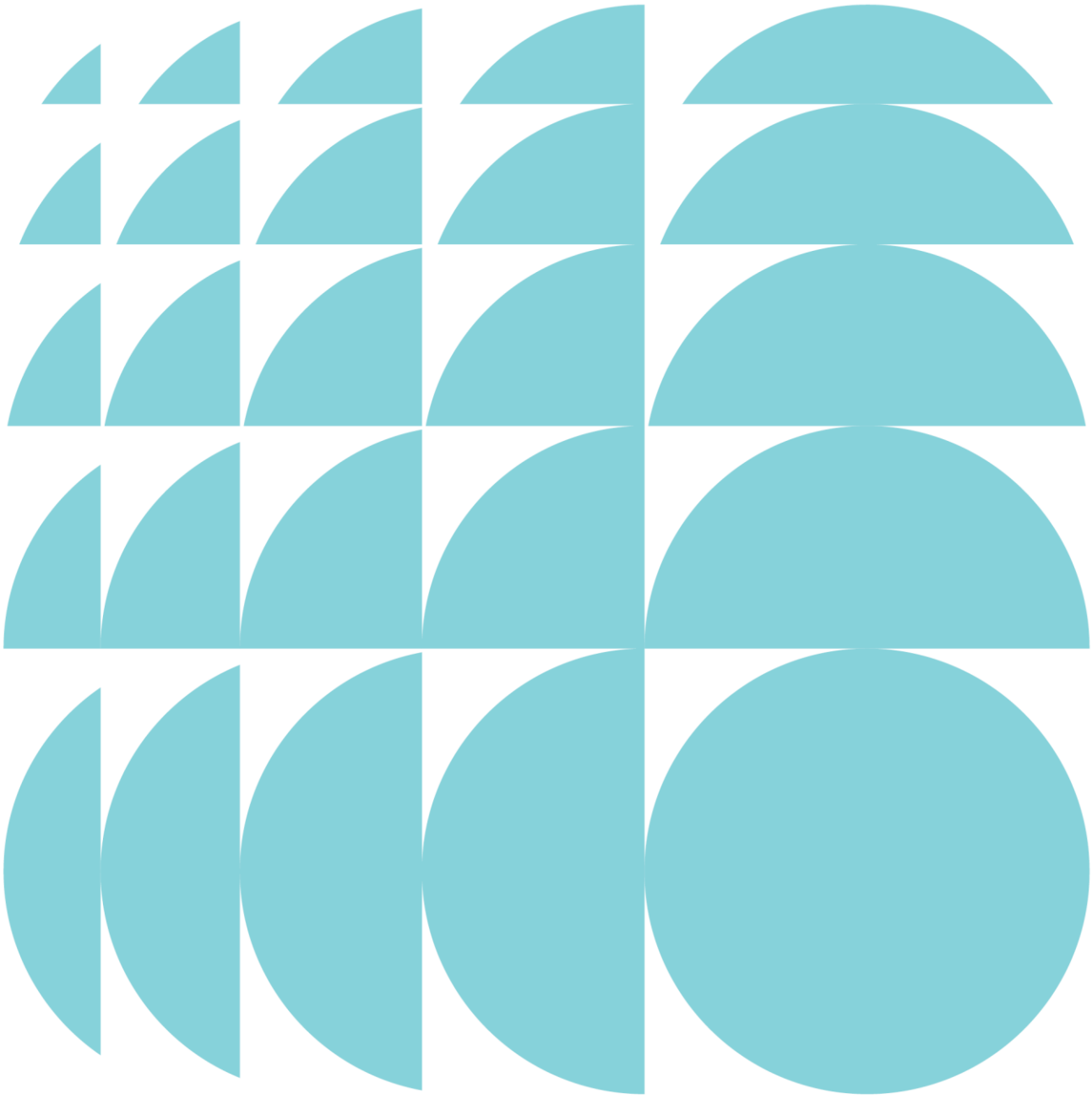
**Response to Submissions and Amended Proposal Report**
Powerhouse Parramatta

34-54 & 30B Phillip Street and 338 Church Street, Parramatta

Submitted to Department of Planning, Industry and Environment

On behalf of Infrastructure NSW

08 October 2020 | 2190947



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## 1.0 Introduction

An Environmental Impact Statement (EIS) was prepared on behalf of Infrastructure NSW to support a detailed State Significant Development (SSD) Development Application (DA) for the construction of the Powerhouse Parramatta at 34-54 and 30B Phillip Street and 338 Church Street, Parramatta. The statutory public exhibition process for the SSD DA was from 10 June to 14 July 2020, however, this period was extended by a week until 21 July 2020 by the Department of Planning, Industry and Environment (DPIE).

Public exhibition occurred in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act). In total, 1,303 submissions were received in response to the public exhibition of the EIS. These included submissions made by State and local Government agencies and authorities, community organisations and from the general public. The Department also issued Infrastructure NSW a letter requesting that a Response to Submissions be prepared in response to matters arising from submissions received during the exhibition period.

Infrastructure NSW and its consultant team have considered all issues raised in the submissions and prepared a detailed response in this report and the accompanying documents, in accordance with Clause 82(2) of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). A considered and detailed response to all submissions made has been provided in the accompanying documentation, including the response table in **Appendix A**, with the key issues discussed in **Section 3.0** and additional information provided in **Section 5.0** and the appendices attached to this Report, where appropriate.

In responding to and addressing the range of matters raised by State and local Government agencies and authorities, Infrastructure NSW has sought to refine the detailed design of the proposal to further demonstrate how the development can respond to those matters raised in the submissions. These design changes are detailed in **Section 4.0** and include:

- Reducing the maximum height of the eastern building by 1m.
- Reducing the building footprints and increasing the building setbacks to the Parramatta River and Phillip Street, providing increased areas of open space. The setbacks to Wilde Avenue and Dirrabarri Lane remain unchanged and the setback to the neighbouring property at 32 Phillip Street has been marginally decreased by 1.15m from 10.4m to 9.25m.
- Retaining and adaptively reusing St George's Terrace as part of the Phillip Street frontage of Powerhouse Parramatta.
- Committing to relocating and adaptively reusing Willow Grove off-site within the Parramatta area, with the process to be developed through a framework to determine the future site as well as the reconstruction process and the program to be undertaken.
- Amending the site's relationship to the river frontage to include a new a sloped embankment that connects Presentation Space 1 (PS1) and the terrace with the riverfront. Turfed open spaces are retained along the river frontage and outside PS1 for recreation or outdoor events, with some of 19,270sqm of public open space provided on the site (representing a 9% increase from the exhibited scheme).
- Redesigning the undercroft area to be concealed by open space and screens and to prevent access except for managed Powerhouse events that will be coordinated with the Flood Emergency Strategy.
- Providing a new public stair and a public lift as part of the Civic Link and a series of seating steps at the Parramatta River frontage.
- Retaining two (2) trees on the site comprising a Eucalypt located adjacent to Lennox Bridge and a Monterey Cypress located within the front garden area of Willow Grove. A further three (3) trees are identified as being retained on the Phillip Street footpath, outside of the site boundary.
- Reducing the bus drop-off area to allowing buses to park within an existing parking lane and enabling the removal of the indented bus bay. A pickup and drop off area is also addressed as part of the George Khattar Lane turnaround facility.

- Undertaking various amendments to the eastern and western building floors in response to reduced building envelopes and to reorganise internal spaces to create a more efficient layout. The buildings' exoskeleton and façade design has also been amended in response to the proposed changes to the floorplates and internal design development.

Overall, the changes improve the surrounding public spaces, create a better arrival experience and enhance connectivity from the Civic Link to the riverfront. A reduction in height and footprint of the buildings reduces impacts to neighbouring properties, and the retention and relocation of heritage items provides opportunities to mitigate impacts where possible.

These changes have been enabled by refining and optimising the design of the spaces used for back of house operations, circulation, education, and the Powerlab. Importantly there is minimal change to the exhibition spaces and over 18,000m$^2$ of exhibition and public space will still be provided in the new museum.

**Section 2.0** outlines the additional stakeholder engagement that Infrastructure NSW has completed since the SSD DA was publicly exhibited. **Section 3.0** provides a summary of the statutory consultation process, and **Sections 4.0** and **5.0** of this Report and the accompanying appendices provide an analysis and assessment of the proposed changes and the refined project more broadly. Final measures to mitigate the impacts associated with the refined proposal are detailed in **Section 6.0**. The mitigation measures have been updated and revised to respond to a number of matters raised in submissions.

The social and economic impacts and benefits of the proposed development have been further quantified as part of this Report. Having regard to the relevant environment, social and economic considerations, the proposed development is considered to be an appropriate and high-quality outcome for the site.

The consultants' reports and supporting information identified at the commencement of this report either updates or replaces the material originally submitted in support of the EIS or constitutes new information. Particular reference is made to the revised Architectural Plans and Design Report prepared by Moreau Kusunoki and Genton (**Appendix B**) and the revised Landscape Plans and Design Report prepared by McGregor Coxall (**Appendix C**). This revised supporting documentation will enable DPIE to complete its assessment of the proposal. This report should also be read in conjunction with the EIS prepared by Ethos Urban and dated 2 June 2020, as relevant.

## 2.0 Further consultation

DPIE placed the SSD DA on public exhibition between 10 June and 21 July 2020. During this time, the project team undertook further consultation with the community and stakeholders. A summary of the stakeholders engaged during the public exhibition period is contained within the Consultation Outcomes Report at **Appendix D**.

Due to COVID-19, no in-person meetings took place. Notwithstanding, the engagement approach involved a variety of different engagement methods that allowed for the project team to effectively engage with stakeholders without being limited by social distancing measures. The additional consultation activities undertaken during the public exhibition of the SSD DA are summarised in the Consultation Outcomes Report at **Appendix D**, and include the following:

- A total of six community webinars were held, with 142 people registering to attend. Of these 142 people, a total of 69 people attended the webinars. Details of these sessions were made available on the Infrastructure NSW (INSW) website, promoted through social media, direct email invitations and digital advertising. These meetings provided a summary of the EIS including key environmental issues and the proposed mitigation measures, while also providing a forum for the community to ask questions about the EIS and provide feedback.
- Eight stakeholder and group webinars were held, with 128 people/organisations invited to attend. The stakeholders that were invited ranged from government agencies, Councils, local arts and cultural groups, business groups, educational groups, neighbouring businesses, travel and tourism providers and the Parramatta Community Reference Group. A total of 66 people attended these webinars.
- INSW sent email invitations to 32 people or groups to conduct one on one online meetings about the project, with 21 one on one meetings being conducted.
- INSW updated its project webpage at www.infrastructure.nsw.gov.au/powerhouseparramatta to provide an overview of the project, factsheets on the EIS, information on how to make a submission, links to register for a community webinar and contact details for the project team for interested parties to ask any questions.
- A project webpage was updated on the Powerhouse website. This page detailed the EIS and provided links to the INSW and DPIE websites.
- Contact details including a project-specific phone number and email address were maintained for the project in order to manage community and stakeholder enquiries. 107 emails were received from stakeholders and in total there were 188 phone calls with stakeholders. Any after-hour calls were captured via voicemail to ensure that all enquiries were heard and responded to by the project team.
- The project team made 37 phone calls to key stakeholders to provide them with an update about the project, details of the EIS exhibition and how to make a submission.
- The project team sent out 329 emails to community members and key stakeholders to provide them with responses to feedback, webinar invites and project information.
- Numerous social media posts were shared on the Powerhouse Museum Facebook, Twitter and Linkedin accounts. Two paid advertisements also ran on Facebook during the EIS phase, targeting audiences from Parramatta and wider western Sydney.

During the course of the consultation, key matters that were raised to the project team included the following:

- design
- consultation process;
- budget and costs;
- operation;
- transport;
- site location;
- heritage;
- education;
- construction;
- business & economy;
- employment;
- collection management;
- flooding;
- arts and culture; and
- tourism.

Engagement with the community and stakeholders will continue until the project determination. Pending project approval, there will be further engagement leading up to and during construction. Community engagement will also continue through to the operation of Powerhouse Parramatta.

# 3.0 Public exhibition and submissions

This chapter addresses the submissions received during the public exhibition process both from the general public and organisations, and from State and local Government authorities and agencies. Any amendments to the proposed development resulting from submissions received has been detailed in **Section 4.0** and further assessed in **Section 5.0** below, as well as the revised and updated mitigation measures at **Section 6.0**.

## 3.1 Public submissions

### Approach to the public submissions

Each submission received from the 'public' as categorised by DPIE [1], being members of the public, local residents and other interested persons, has been summarised. Because a large number of submissions raise similar issues, rather than addressing each submission individually, the issues raised in the submissions have been summarised and where possible classified into Issue Categories. A description of these 'Issue Categories' is provided in the analysis below.

### Analysis of public submissions

The number of times a particular issue has been raised in a submission received from the public has been identified. This analysis has been completed to determine potentially recurring themes/concerns and is not intended to discount issues raised less frequently or in a fewer number of submissions. A total of 1,268 submissions were received and categorised as 'public' by DPIE during the exhibition period for the project. Of these, 1,222 objected to the proposal, 26 supported the proposal, and 20 provided comments but neither supported nor objected to the proposal.

### Geographic distribution of submissions

Of the submissions received from the public, only 3% were identified as originating from the Parramatta or North Parramatta areas, and 16% from the broader City of Parramatta Council Local Government Area. A proportion of the submissions received were indicated as originating from areas outside of Metropolitan Sydney and outside of NSW. However, 42% of the submissions were not attributed to any particular suburb or location, with the location being redacted at the author's request.

Accordingly, owing to the significant proportion of redacted submissions, no significance can be drawn from the geographical distribution of the public submissions.

### Analysis of issues raised

**Figure 1** below provides a summary of the issues raised in the 'public' submissions during the public exhibition period [2]. For each issue category that has been identified, **Table 1** provides a high-level description of the matters raised in the submissions, a summary of the response, and a reference to where these issues have been covered in the detailed documentation as required.

The identified issues have been discussed further in **Section 5.0** of this Report which provides additional information and/or an assessment where it is warranted.

**1** i.e. submissions categorised as 'public' by DPIE on the Major Projects website: https://www.planningportal.nsw.gov.au/major-projects/project/26576/submissions/12921/3251
**2** i.e. it includes a tally of the frequency of an issue raised – a single submission could discuss a number of the identified key issues. Submissions that were categorised as 'organisation' and 'public authority' submissions by DPIE have been discussed further in the following sections and **Appendix A**.

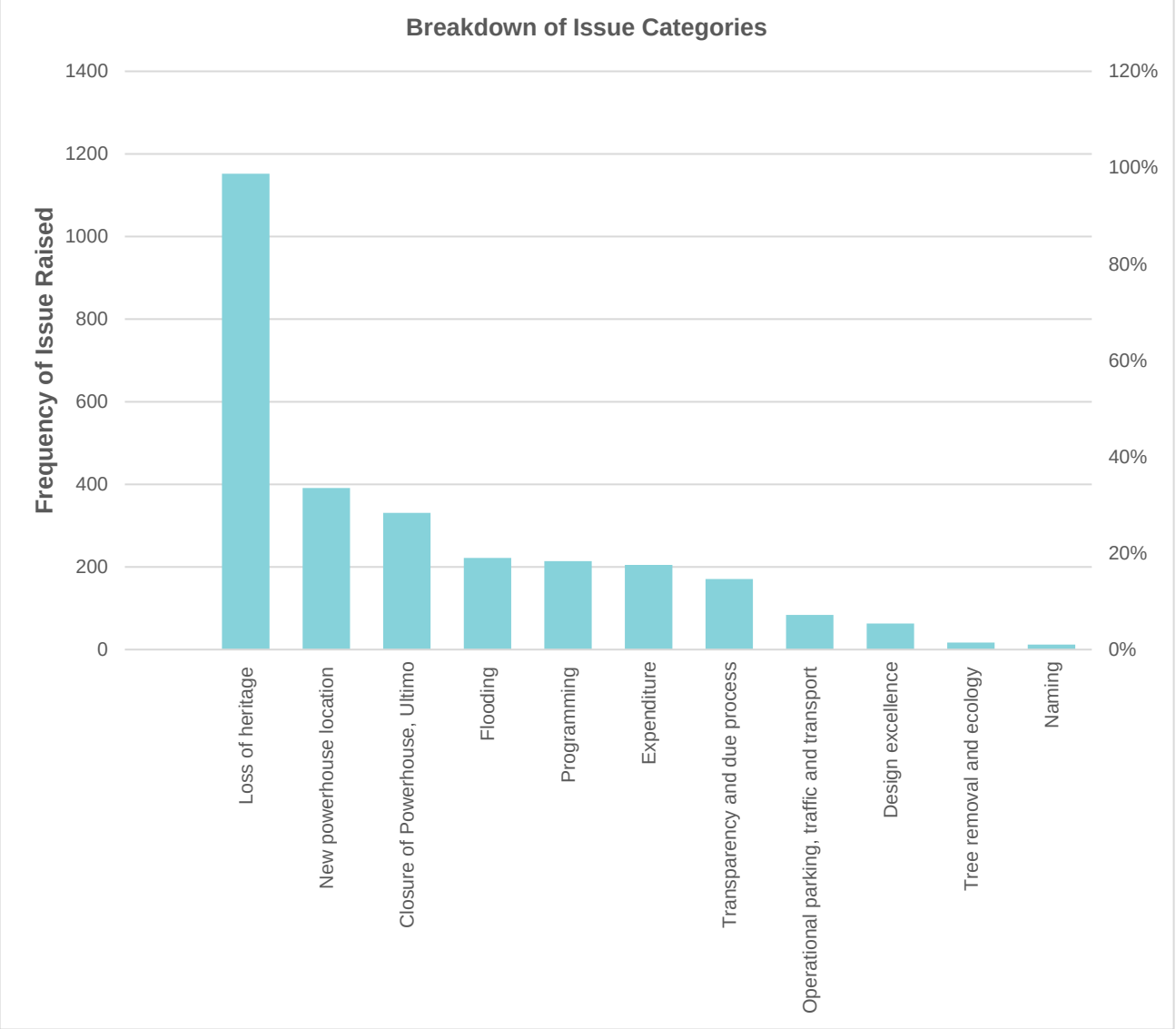



**Figure 1 Summary of key issues identified in 'public' [3] submissions**

*NOTE: Figures are inclusive of objections, support, and comments [4]*

**3** i.e. submissions categorised as 'public' by DPIE on the Major Projects website: https://www.planningportal.nsw.gov.au/major-projects/project/26576/submissions/12921/3251

4 In addition to the issue categories identified, there were several other issues which presented in less than 1% of the submissions. These included discussions on BCA requirements, operational noise, construction impacts and more. These issues were infrequent and as such were not considered to be significant community issues requiring a response. Compliance with the requirements of the BCA, as well as other impacts of the proposal in terms noise, construction impacts and more, are adequately addressed in the EIS, any updated documents, and the Mitigation Measures or otherwise can be addressed in the conditions of approval.

**Table 1 Summary of public submissions by issue raised**

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| **Loss of heritage**<br><br>91% of submissions received | • The demolition of Willow Grove and St Georges Terrace is unnecessary. These heritage items should be preserved, and the museum should be redesigned around their retention. | • The subject site is the most suitable location for the Powerhouse Parramatta as outlined in the EIS, including the site's iconic location within the CBD of Sydney's Central City, positioned on the Parramatta River foreshore at the terminus of the future Civic Link.<br>• Powerhouse Parramatta has been the subject of a two-stage international design competition, in which the competition brief requested that design teams consider aspects of heritage and cultural significance within their submissions, including local heritage items, whilst achieving the functional brief required to be delivered on this important site. The retention of heritage was considered carefully during the judging process, and ultimately the Jury were unanimous in their decision on the final chosen concept by Moreau Kusunoki and Genton.<br>• In recognition of the comments regarding the preservation of heritage in Parramatta it is proposed to deconstruct and relocate Willow Grove to another location within the Parramatta area. The relocation would be undertaken under the supervision of a heritage specialist and a process of recording and developing sensitive demolition methodologies would be undertaken prior to any works. Create Infrastructure NSW will develop a framework outlining the future site of Willow Grove, as well as the reconstruction process and the program that would be undertaken prior to the opening of Powerhouse Parramatta.<br>• Design amendment has also further enabled the retention of St George's Terrace as part of the Phillip Street frontage of Powerhouse Parramatta. This will comprise works to integrate the terrace with the renewed site and to adaptively reuse the building to support Powerhouse Parramatta programming.<br>• Powerhouse is also uniquely placed to undertake programmatic interpretation and connect people to local histories, which will recognise the significant and changing relationships between people and place within the urban and cultural landscapes. | • **Sections 5.2** and **5.5** of this Response to Submissions (RTS) Report<br>• Appendix G and Section 6.2 of the EIS. |
| | • The proposed development will negatively impact on the community's connection to heritage. It will result in a loss of connection to generations past, present and future. | • The Heritage Impact Statement prepared by Advisian and the Social and Economic Impact Assessment prepared by Ethos Urban recognised that the removal of items of heritage and archaeological significance as the site is redeveloped may impact the local community way of life and sense of place. The community is identified as having a particular attachment to Willow Grove, as well as the St George's Terrace.<br>• In recognition of the comments regarding the preservation of heritage in Parramatta it is proposed to retain and adaptively reuse St George's Terrace on the site and to deconstruct and relocate Willow Grove to another location within the Parramatta area. The relocation of Willow Grove would be undertaken under the supervision of a heritage specialist and a process of recording and developing sensitive demolition methodologies would be undertaken prior to any works. Create Infrastructure NSW will develop a framework outlining the future site of Willow Grove, the reconstruction | • **Sections 5.2** and **5.5** of this RTS Report<br>• Appendices G and Y and Sections 6.2 and 6.6 of the EIS. |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| | | process and program and that would be undertaken prior to the opening of Powerhouse Parramatta.<br>• However, Powerhouse Parramatta also presents an unprecedented and unparalleled opportunity to improve access to and engage communities with local and new histories and the substantial Powerhouse Collections, which is considered to have a reciprocal positive outcome for the existing and future community. | |
| | • The project had made no attempt to consider or understand the impact of heritage loss. | • The Heritage Impact Statement prepared by Advisian (Appendix G of the EIS) examined the potential impact of the proposed development on heritage items on the site as well as archaeological sites and any heritage conservation areas, heritage landscapes and potential heritage items located on the site and in surrounding areas, as identified under the Parramatta LEP, the *Heritage Act 1977* (NSW) and other statutory registers.<br>• Curio Project also prepared an Aboriginal Cultural Heritage Assessment Report (Appendix H of the EIS) documenting the process that has been undertaken for consulting with local Aboriginal stakeholders, investigating and assessing Aboriginal cultural heritage associated with the site and surrounds.<br>• The Social and Economic Impact Assessment (Appendix Y of the EIS) further assessed impacts to community way of life and sense of place as a result of changes to the conditions of the site.<br>• Further consultation and assessment has also been undertaken as part of the response to the submissions received, as detailed in the addendum Consultation Outcomes Report prepared by Aurecon, the addendum Statemen of Heritage Impact prepared by Advisian, and the addendum Aboriginal Cultural Heritage Assessment Report prepared by Curio Projects.<br>• The project has met the requirements of the SEARs, and has assessed how impacts can be avoided, minimised, or offset in the context of the wider project. | • **Appendices G**, **H**, and **I** of this RTS Report.<br>• Appendices G, H, and Y of the EIS |
| | • Paramatta has already lost the Royal Oak Hotel and significant landscape trees and can't afford to lose more heritage. | • The Heritage Impact Statement prepared by Advisian (Appendix G of the EIS) addressed the cumulative impacts in the context of the proposed redevelopment of the site. It was identified that the Parramatta Light Rail has physical, visual and vibration impacts for heritage items located in the Parramatta CBD, including the Royal Oak Hotel and Stables, and that the future Sydney Metro West and Civic Link projects would also have the potential to contribute to the cumulative impacts on heritage items in the Parramatta area. It was confirmed that the proposal would have a minimal cumulative impact on the loss of heritage items in the Parramatta CBD in consideration of other nearby current and future developments.<br>• The proposed design amendments have also enabled the retention of St George's Terrace on the site, which will minimise the cumulative impact of the loss of heritage items in the Parramatta CBD. | Appendix G and Section 6.2 of the EIS. |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| | • There are no other buildings like Willow Grove and St George's Terrace in Parramatta. | • The Heritage Impact Statement prepared by Advisian (Appendix G of the EIS) acknowledges that there are no comparable existing buildings specifically within the context of the Parramatta CBD. | Appendix G and Section 6.2 of the EIS. |
| **New Powerhouse location**<br><br>31% of submissions received | • The Environmental Impact Statement has not adequately demonstrated consideration of other possible locations for the new Powerhouse.<br>• The site is not an appropriate location within Parramatta. The proposal should be relocated to the Cumberland Hospital precinct, the Fleet Street heritage site, The Female Factory and/or Parramatta goal. | • The then NSW Premier and Deputy Premier released the *Create in NSW: NSW Arts and Cultural Policy Framework* and announced the Government's decision to investigate the creation of Powerhouse Parramatta. Following that announcement, Create Infrastructure NSW initiated and led the development of the planning framework for Powerhouse Parramatta. This included a site selection assessment which concluded that the Riverbank site in Parramatta was the preferred site for the new museum, based on a range of criteria including size, existing conditions, location and opportunities to deliver expanded benefits in conjunction with other civic projects (i.e. the Parramatta River foreshore and the Civic Link). The Government confirmed this decision and announced its choice of the Riverbank site in April 2016. The Riverbank site was acquired by the NSW Government to facilitate the delivery of the project in early-2019.<br>• The EIS includes a detailed analysis of the site's suitability and project alternatives, in accordance with the requirements of the SEARs and the EP&A Regulation.<br>• Analysis of alternative locations has already been undertaken by the NSW Government, resulting in the selection of the subject site as the most suitable, and is not relevant to this planning assessment process. | - |
| | • Parramatta is not the correct location, and is too far from the Sydney CBD.<br>• Parramatta deserves its own cultural facility. This project supports addressing the cultural infrastructure inequity in Western Sydney and providing the region with a Tier 1 Cultural Institution. | • Powerhouse Parramatta will be the first major, world class cultural institution to be established in Sydney's Central City. City of Parramatta Council's Local Strategic Planning Statement identifies the proposed new museum in the Parramatta CBD as being the first of many needed cultural infrastructure projects to redress imbalance if Parramatta is to achieve rounded growth.<br>• Its location aligns with key Government strategies including the development of a Parramatta Cultural Precinct under the *State Infrastructure Strategy Update 2014* and *Cultural Infrastructure Strategy 2016*, and the *Create in NSW: NSW Arts and Cultural Policy Framework 2015*. The *Greater Sydney Region Plan* and *Central City District Plan* further support investment in the metropolitan centre of the Central River City, as part of the Greater Parramatta and Olympic Peninsula (GPOP) Corridor.<br>• Analysis of alternative locations has already been undertaken by the NSW Government, resulting in the selection of the subject site as the most suitable, and is not relevant to this planning assessment process. | - |
| | • The proposed location of the Powerhouse undermines Council's vision for a public park along the foreshore, and alienates valuable riverfront land. | • The setback of the western building from the river foreshore has been increased to a minimum of 28.3m, exceeding the recommended 25m setback. Powerhouse Parramatta will deliver some 19,270sqm of public open space (representing a 9% increase from the exhibited scheme) including a generous lawn embankment connecting the ground floor of the Powerhouse to the river's edge. The proposal | **Appendices B** and **C** and **Section 5.6** of the RTS Report. |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| | | delivers the publicly accessible open space area identified by Council for the end of the Civic Link.<br>• The proposal does not impact the existing shared path along the river front, and will better address and activate the riverfront by replacing the existing multi-storey carpark with a vibrant new museum with open, public connections through the site. | |
| **Closure of Powerhouse, Ultimo**<br><br>26% of submissions received | • There is no need to close the Powerhouse Ultimo site.<br>• The closure of Powerhouse Ultimo would result in the loss of a Sydney icon and adversely impact tourism.<br>• The project has been developed as an alternative to the existing museum at Ultimo, and that it is proposed to move the museum contents to this new building, the EIS should have described the whole project. | • The Premier of NSW announced on 4 July 2020 that Powerhouse Ultimo would be retained. The decision ensures Sydney benefits from two world-class facilities, providing a significant boost for the arts, tourism, and employment sectors. However, this issue is separate from and not a relevant matter for consideration as part of this SSD DA.<br>• The Environmental Impact Statement describes and assesses the redevelopment of the subject site. The operation of other existing sites is outside of the scope of this planning assessment and is a matter for the NSW Government. | - |
| **Flooding**<br><br>17% of submissions received | • Constructing a significant public building on flood liable land is inappropriate and unacceptable. Recent flooding in the area this year affirmed the dangerous location chosen to position the building. | • The proposed development has been the subject of significant study and assessment by Arup, identifying the flood risk of the site and associated management strategies.<br>• The ground floor (finished floor levels) of the eastern and western buildings will comply with the flood planning level set by the Parramatta Development Control Plan and will be able to withstand riverine flooding and overland flooding events. The probability of overland flooding is very low and about 1 in 800 in any year. Expressed in terms of the design life of the building of 100 years, it represents a chance of 1 in 8 (i.e. 12%) of a flood occurring in this period which is within 0.3m of the ground floor level. The chance of ground floor inundation from the Parramatta River flooding is approximately 1 in 1000 in any year.<br>• An Emergency Evacuation Plan will be prepared for the site with consideration of Council's draft *Update of Parramatta Floodplain Risk Management Plans* consistent with other developments in the surrounding Parramatta CBD. | • **Appendix J** and **Section 5.8** of the RTS Report.<br>• Appendix O and Section 6.5 of the EIS |
| | • The proposed use of the site as an entertainment venue, residential units and school dormitory is creating an unacceptable risk to life and property given the very short emergency warning time for this section of the Parramatta River and the lack of flood free access. | • The design of the proposed development does not present increased risk to public safety or for the people within the building. The development is compatible with the flood hazard of the land. The buildings and main entrances are designed above the recommended flood level, and as such the only key consideration for the evacuation of the site is the riverfront area and foreshore that has been designed to accommodate inundation by floodwaters.<br>• The revised Flood Risk and Stormwater Management Report prepared by Arup confirms the emergency management strategy for the site, which will be further refined and developed prior to the commencement of operations on the site. The site will operate in accordance with the strategy identified by other developments in the precinct and the draft Parramatta Floodplain Risk Management Plan. | • **Appendix J** and **Section 5.8** of the RTS Report.<br>• Appendix O and Section 6.5 of the EIS |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| | | • Arup confirms that some 1.8 hours would be available for people to leave the public domain after the engagement of the Emergency Evacuation Plan, including for people with mobility impairments. The timeframes are significant and appropriate when considering typical fire escape plans from high-rise buildings require evacuation in less than 15 minutes (without lifts).<br>• The Emergency Evacuation Plan includes four egress paths free from overland flow for people to move from the riverbank public domain areas and undercroft area to a designated area on Level 1 above the probable maximum flood level.<br>• In response to the submissions, the undercroft area has been redesigned to be concealed by open space and screens and to prevent access except for managed Powerhouse events that will be coordinated with the Flood Emergency Strategy. The redesign includes an additional staircase in the undercroft area which will provide egress from the undercroft at the highest point of that area. | |
| | • The site puts at risk exhibitions and artefacts. | • The buildings and main entrances are designed above the recommended flood level, and the large majority of items in the museum collection would not be stored permanently on the ground floor.<br>• As discussed above, the development has been designed such that the risk of flooding to the ground floor level from overland flow and from the Parramatta River is low, being 1 in 800 years and 1 in 1000 years respectively. | • **Appendix J** and **Section 5.8** of the RTS Report.<br>• Appendix O and Section 6.5 of the EIS |
| **Programming**<br><br>17% of submissions received | • There will be less exhibition space than the existing Powerhouse Museum.<br>• The proposal and site does not have space to grow and space to establish large exhibits. | The proposal has been designed to support diverse and flexible exhibition spaces, as a purpose-designed museum and research precinct. The museum comprises six levels and provides over 18,000m$^2$ of exhibition and public space. The museum has been designed to support large scale exhibitions that feature Powerhouse collections. | - |
| | • Exhibits will be placed into storage or sold and may never be on display. | The Powerhouse collection and processes of conservation, storage, restoration and exhibition is not an environmental planning issue. Powerhouse manage their collection in accordance with their legislation and collection management policies. | - |
| | • Exhibits will be destroyed or damaged in the moving process. | The potential transfer of collection and exhibition items between sites is not an environmental planning issue. Collection management and movement is governed by the *Museum of Applied Arts and Sciences Act 1945* and their existing collection and conservation policies. This legislation and the policies will apply equally to the Powerhouse Parramatta. | - |
| | • It is not clear why accommodation, event space and the like forms part of the proposed museum. The identified programming for the site is more closely related to an event centre than a museum. | • A key principle of the proposed development is to create an active precinct that will host multiple concurrent activities including exhibitions, events, and community and education programs. Each space is to play a distinct role in the precinct, and when working together, create an active precinct.<br>• Powerhouse will be a working precinct that will connect researchers with students, with staff, with audience members and the community. The ethos of the precinct will be | - |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| | • Dynamic program will ensure the communities have better access to cultural experiences, events, education and resources | about collaboration and sharing knowledge, which complements and builds-on the exhibition program that is typical for museums.<br>• The Precinct will facilitate international exchange programs, lead interdisciplinary research and set a new benchmark for culturally diverse programming. The new Powerhouse program will drive visitation, leverage investment and support ongoing collaborations with industry and community. A constantly changing and diverse program will increase access to the Powerhouse Collection. | |
| **Expenditure**<br><br>16% of submissions received | • The project is a waste of taxpayers money.<br>• It is no longer financially viable or responsible in the wake of the bushfires and COVID-19. | The project expenditure decision is a matter for the NSW Government and is not relevant to the planning assessment process. | - |
| | • The business case put forward for this project is no longer valid and requires complete review. | • In April 2018, the NSW Government published a business case summary for the development of Powerhouse Parramatta within Western Sydney. This business case supported the development of the new institution, which contributes to the future of Parramatta as the metropolitan centre of the Central River City and locates for the first time a major NSW Cultural Institution in Western Sydney.<br>• The project expenditure decision is a matter for the NSW Government and is not relevant to the planning assessment process. | - |
| | • The project represents a positive investment in Western Sydney, with positive cumulative benefits | • The proposed development will provide extensive social and economic benefits including supporting significant jobs during the construction and operational phases, improving the level of visitation and tourism expenditure within the local and regional area, improving life-long education outcomes for students and supporting long term social and economic wellbeing, and providing new cultural and entertainment opportunities during both day and night and diversifying the local night-time economy. | • Appendix Y and Section 6.6 of the EIS. |
| **Transparency and due process**<br><br>13% of submissions received | • There is an insufficient exhibition period, and the exhibition period should be extended. | • The documents were exhibited in accordance with the requirements of the EP&A Act.<br>• The exhibition period was further extended by two weeks in addition to the statutory exhibition period.<br>• Further consultation was also conducted following the lodgement of the EIS, as detailed in the Consultation Outcomes Report prepared by Aurecon. | • **Appendix D** and **Section 2.0** of the RTS Report. |
| | • There is not enough community consultation or involvement in the project. | • Consultation with the community on the project has been underway since 2017.<br>• INSW in partnership with the Powerhouse has undertaken a range of community and stakeholder engagement activities since early 2020 to support the planning process, including webinar briefings, one-on-one meetings including via email, inquiries through the project webpage, a print advertisement campaign, establishing a hotline for inquiries, an online survey, letterbox drop, phone calls to local businesses, social media updates, digital banners and advertisements, and google advertisements. | • **Appendix D** and **Section 2.0** of the RTS Report.<br>• Appendix Q and Section 3 of the EIS. |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| | | • Further consultation was also conducted following the lodgement of the EIS, as detailed in the Consultation Outcomes Report prepared by Aurecon. | |
| | • The planning and assessment process should be a local government process. | • The applicable legislation determines the planning pathway for this development. Development for the purposes of a museum (information and education facility) that has a capital investment value in excess of $30 million, is identified as development that is State Significant Development in Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011*. As the proposed development has a capital investment value of greater than $30 million, it is SSD for the purposes of EP&A Act.<br>• City of Parramatta Council has been consulted throughout the design and assessment of this project, and formed part of the Jury for the international design competition. | - |
| | • The Government's reports are contradictory – they acknowledge heritage buildings are one of a kind and their loss would have a significant impact on the communities connection with heritage. | • The Environmental Impact Statement identifies and assesses impacts resulting from a proposed development, defines opportunities to mitigate or manage such impacts, and provides an ultimate recommendation considering the negative, positive, or potentially neutral implications of the development.<br>• The EIS acknowledges that there will be an impact resulting from the significant change to the existing conditions of the site, requiring the demolition of locally listed items and other physical changes. This adverse impact is outweighed by achieving the significant positive outcomes resulting from providing a new world-class museum in Western Sydney that will outweigh the identified impacts and provide a number of transformative social and economic benefits for the local Parramatta and broader Sydney community.<br>• The amended design enables the retention of St George's Terrace and will deconstruct and relocate Willow Grove. On-balance the proposed development is considered to be in the public interest and will not result in any unacceptable social, economic or environmental impacts that cannot be appropriately managed through the identified mitigation measures and conditions of consent. | - |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| **Operational parking, traffic, and transport**<br><br>7% of submissions received | • The location of the site for a museum is not ideal from an accessibility and transport point of view, being a considerable distance away from major public transport routes, especially Parramatta Railway Station.<br>• It is not efficient for tourists to travel to Paramatta from the CBD via public transport.<br>• Alternative sites (Cumberland Hospital, Old Gaol) have better access to public transport. | • The site benefits from a range of existing and planned transport options. Parramatta Railway Station is located approximately 600m south of the site and accessible via major walking routes along Church Street and Smith Street, there are regular bus services along Phillip Street that connect to the surrounding area, and the Parramatta Ferry Wharf is located approximately 470m east of the site, with clear and accessible pedestrian pathways directly linking the site to the Wharf. There are also two light rail stops in easy walking distance of the site.<br>• The new metro station within the Parramatta CBD as part of the Sydney Metro West project is also approximately 300m south of the site and will effectively double the rail capacity between Parramatta and the Sydney CBD, ultimately being able to move more than 40,000 people an hour in each direction.<br>• The site benefits from a number of existing and planned public transport links. Analysis of alternative locations has already been undertaken by the NSW Government, resulting in the selection of the subject site as the most suitable, and is not relevant to this planning assessment process. | • **Appendix K** of the RTS Report.<br>• Appendix F and Sections 2.1.3 and 6.4 of the EIS. |
| | • The proposed design is not equipped to deal with the frequency and number of school buses. | • The coach passenger pick-up/drop-off area was developed in consultation with Powerhouse staff and expert transport engineering advice, taking into account the existing demand for coach parking at the Powerhouse Ultimo site as well as that likely to be generated at the future Powerhouse Parramatta. The proposed development will operate in conjunction with other sites, having the effect of distributing demand for school groups across these facilities in Sydney, rather than concentrating all demand at the future Powerhouse Parramatta.<br>• School groups will be managed in accordance with the current protocols in place for Powerhouse Ultimo, requiring that school groups notify Powerhouse staff of their intention to visit before their arrival date. If travelling by bus / coach, the school will be given an arrival and departure window. | • **Appendix K** and **Section 5.9** of the RTS Report. |
| | • The development should be required to provide onsite parking for staff or pay developer contributions towards additional offsite parking required to serve the development. | • Public transport will be promoted as the primary mode of transport to use when travelling to and from the site, recognising that there are strong public transport links existing within and planned for the Parramatta CBD. This approach is supported by City of Parramatta Council to maximise the amount of publicly accessible open space and minimise the traffic impacts arising from the development.<br>• On a typical weekday, it is modelled that the site may generate parking demand for approximately 140 cars. These vehicles can be easily accommodated within surrounding public carparks located within the Parramatta CBD in walking distance of the site. These carparks accommodate over 12,000 spaces. | • **Appendix K** of the RTS Report.<br>• Appendix F and Sections 2.1.3 and 6.4 of the EIS. |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| | • The demolition of much needed parking on the site as part of the redevelopment is wasteful. | • City of Parramatta Council has a long-term desire to relocate long stay commuter car parking within the heart of the city centre to the city periphery to encourage greater use of sustainable transport. This also relocates congestion away from the city core, releases key sites for development, and encourages the use of alternative modes of transport. | - |
| | • There is insufficient loading space to accommodate the exhibitions and the operations of the museum. | • The loading and servicing requirements for the site have been assessed by JMT Consulting, confirming that the loading docks within the site have been designed to accommodate the anticipated level of vehicle demand generated throughout the day. Given the expected profile of service vehicle movements, amount of service vehicle parking bays available as well as the vehicle duration of stay, the loading area will have sufficient capacity to meet the needs of the future site. | **Appendix K** and **Section 5.9** of the RTS Report. |
| **Design excellence**<br><br>5% of submissions received | • The proposed design is an eyesore.<br>• The design is not unique and can be easily replicated.<br>• The design does not recognise the city centre's essential character. | • The proposed development has been designed to exhibit design excellence including by means of the high standard of architectural and landscape design appropriate to the proposed building type and location. The proposed development is the outcome of a two-stage international design competition, whereby both local and global architectural and landscape architecture firms critically analysed the design alternatives for the Powerhouse Parramatta and surrounding public domain.<br>• The competition was run in accordance with the requirements of the NSW Government and was formally endorsed by the Australian Institute of Architects.<br>• The Stage 2 entries were critically analysed by a Jury comprised of members with experience in architecture, urban design, museum design, business and cultural institutions operation, and included government representatives as well as a representative from City of Parramatta Council.<br>• The Jury concluded that the proposal stood out for its 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 Powerhouse Parramatta. The public realm was also considered to be generous and welcoming, incorporating a clear continuation of the Civic Link and providing exceptional open space for Parramatta.<br>• The Jury considered the proposal against the criteria for design excellence in accordance with the Parramatta LEP, which found that the design scheme achieved each of the criteria and, therefore, design excellence.<br>• The revised design has been further assessed by the Jury, confirming that the amended scheme is consistent with the design competition winning entry and continues to achieve design excellence in the meaning of Clause 7.10 of the Parramatta LEP. | **Appendix E,** and **Appendix B** and **C** of the RTS Report. The design of the proposal is also discussed further in **Section 5.0**. |
| **Tree removal and ecology** | • Trees contribute to the significance of the site. No mature trees within the established landscape of the heritage item would be retained. | • The proposed development necessitates the removal of 51 existing trees that are either located within the footprint of works for Powerhouse Parramatta, will obstruct the | **Appendix S** and **C**, and **Section 5.10** of the RTS Report. |

| Issue tag | Summary of issue | Response | Reference to further information |
|---|---|---|---|
| 1% of submissions received | • Parramatta is affected by excessive heat, which is impacted by the loss of vegetation. | construction of buildings or the circulation through the site, or which are identified as being in poor condition and are a priority for removal.<br>• Whilst this does represent the loss of some healthy mature vegetation on the site, the proposed removal of trees will be mitigated through significant supplementary landscaping and tree planting, and through retaining and protecting two (2) significant existing trees on the site.<br>• The amendments to the design in response to submissions has specifically also enabled the retention of an additional tree from the Willow Grove landscape, a Cupressus macrocarpa (Monteray Cypress). | |
| **Naming**<br><br>1% of submissions received | • A new museum for Parramatta should be designed around a distinctive identity and have a new name.<br>• Using the name Powerhouse is confusing. | • The future naming and branding of the museum is not an environmental planning issue. | - |

### 3.2 Submissions from organisations

Submissions were received from twenty-nine (27) 'organisations' which include community and special interest groups and key stakeholders such as neighbouring landowners [5]. Of these organisations, fourteen (14) objected to the proposal, nine (9) supported the proposal, and four (4) neither supported nor objected to the proposal.

These organisations included:

- Australian Museums and Galleries Association
- Bathurst Family History Group
- CFMEU NSW
- Dharug Strategic Management Group
- Historic Houses Association of Australia
- The King's School Old Boys' Union
- National Trust – Parramatta Branch
- National Trust NSW
- North Parramatta Residents' Action Group
- Ryde Community Alliance
- Save the Powerhouse Campaign
- The Hunters Hill Trust
- The Social Canvas
- The Parramatta Chamber of Commerce
- Parramatta Female Factory Friends
- ParraParents
- Mammoth Movers
- Business NSW
- Catholic Education Diocese of Parramatta
- Evolve Housing
- FORM Dance Projects
- Museum and Galleries NSW
- Western Sydney Business Chamber
- Western Sydney Business Connection
- Western Sydney University
- Dyldam Developments
- Australian Unity Office Fund

The key issues raised in these submissions have been catalogued in **Appendix A**. A detailed response to each of the issues raised by neighbouring landowners has also been provided at **Appendix A**. An assessment of the key issues and of the proposed design changes is also included in **Section 5.0** below.

### 3.3 Submissions from public authorities

Submissions were received from eight (8) public authorities/agencies during the exhibition of the EIS, including:

- City of Parramatta Council
- NSW Heritage Council
- Transport for NSW
- Transport for NSW – Roads and Maritime Division
- Sydney Water
- Environment, Energy and Science Group
- Jemena
- Telstra

Feedback from these particular stakeholders was forwarded to Infrastructure NSW for consideration and response during the preparation of this Report. None of the public authorities/agencies objected to the SSD DA. A detailed response to each of the issues raised in these submissions is provided at **Appendix A**. An assessment of the key issues and of the proposed design changes is also included in **Section 5.0** below.

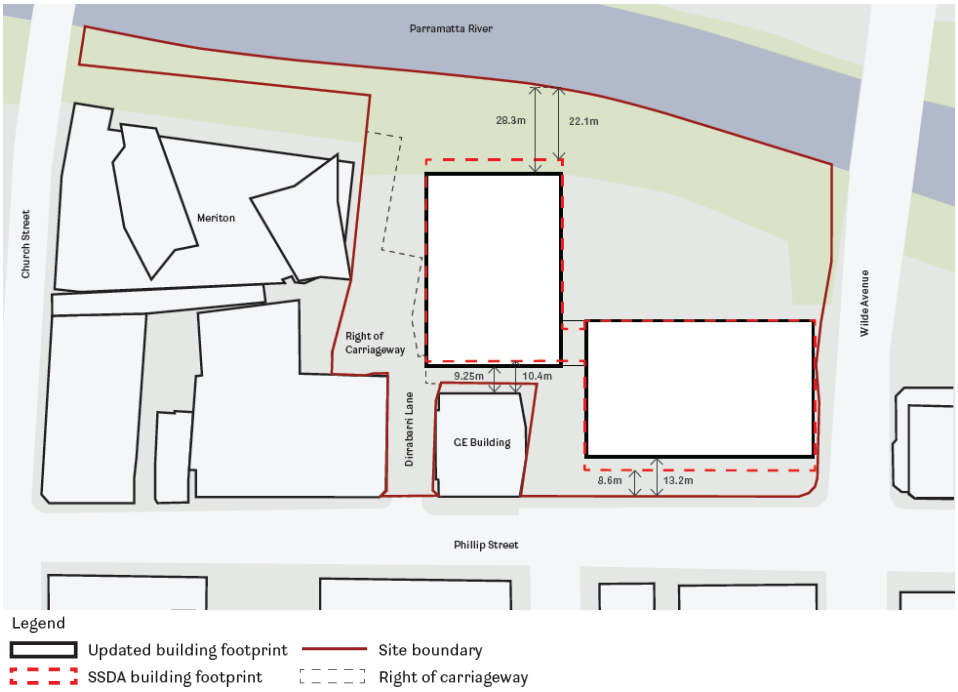
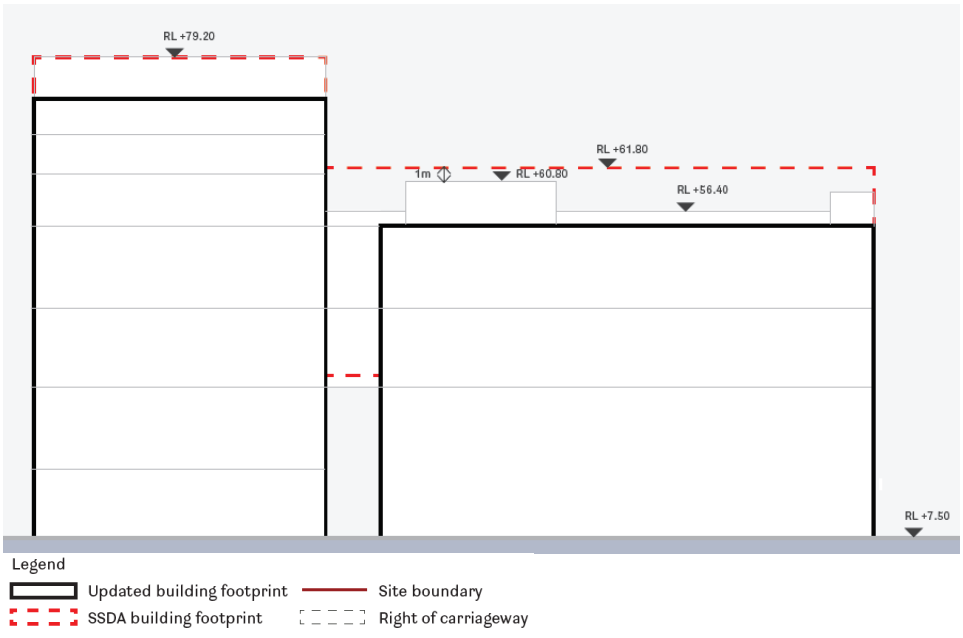
**5** i.e. submissions categorised as 'organisations' by DPIE on the Major Projects website, with the exception of Jemena and Telstra which were identified as 'organisations', but for the purposes of infrastructure coordination have been treated as public authorities/agencies in the same vein as Sydney Water in responding to submissions.

## 4.0 Amendments to the application

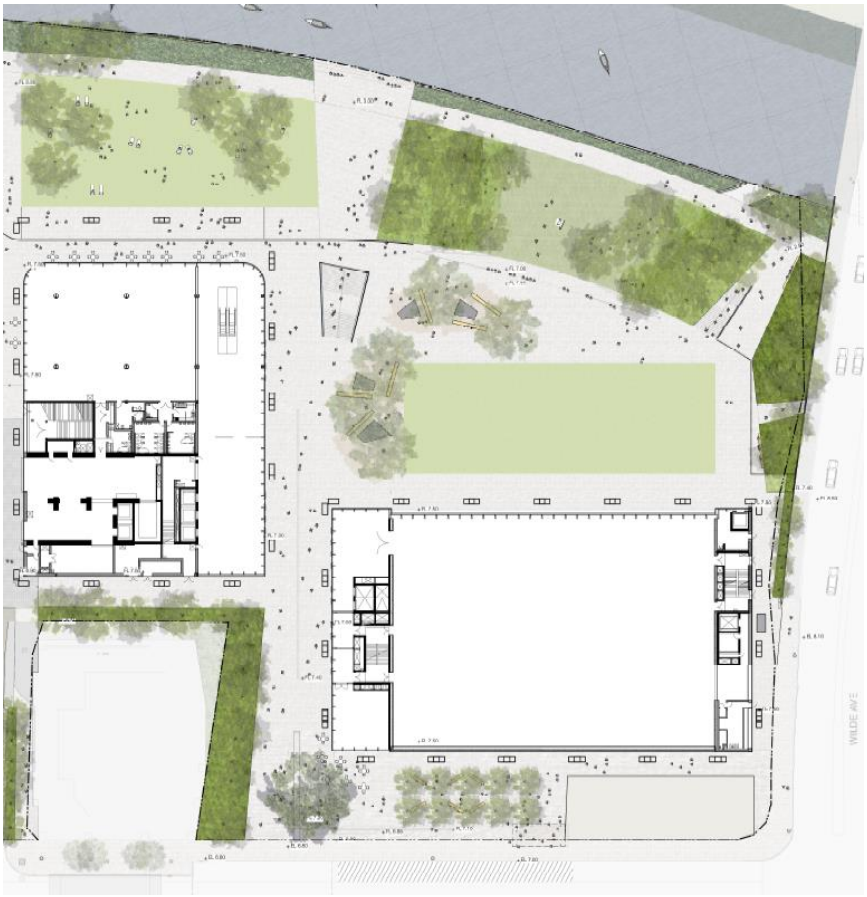
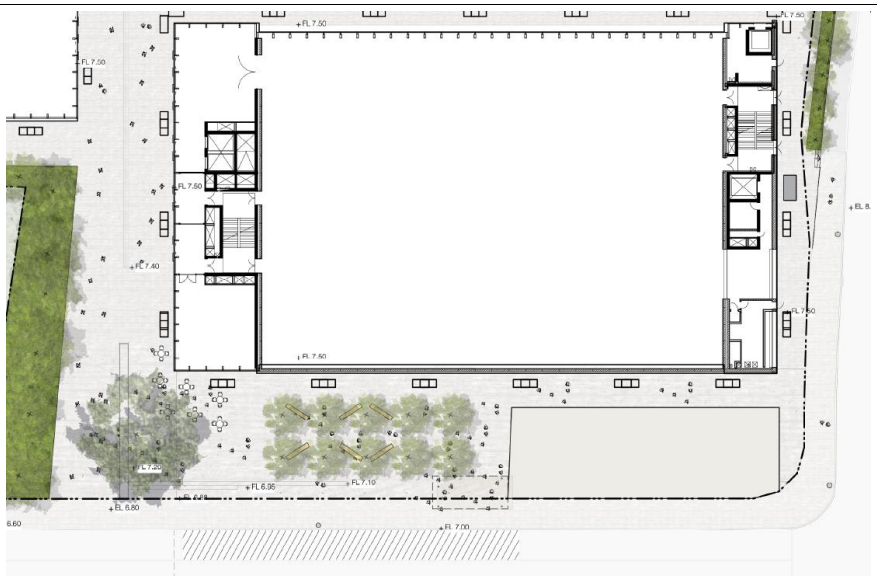
A number of detailed design changes have occurred since the exhibition of the EIS and are proposed in accordance with Section 55 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). These changes have occurred in response to the matters raised by DPIE and other government agencies and in public submissions, and are illustrated in the updated Architectural Plans and Landscape and Public Domain Plans at **Appendix B** and **C** respectively. These design changes are described below and, where relevant, assessed in **Section 5.0** of this report and the accompanying technical reports.

The changes to the proposal are described in **Table 2** below.

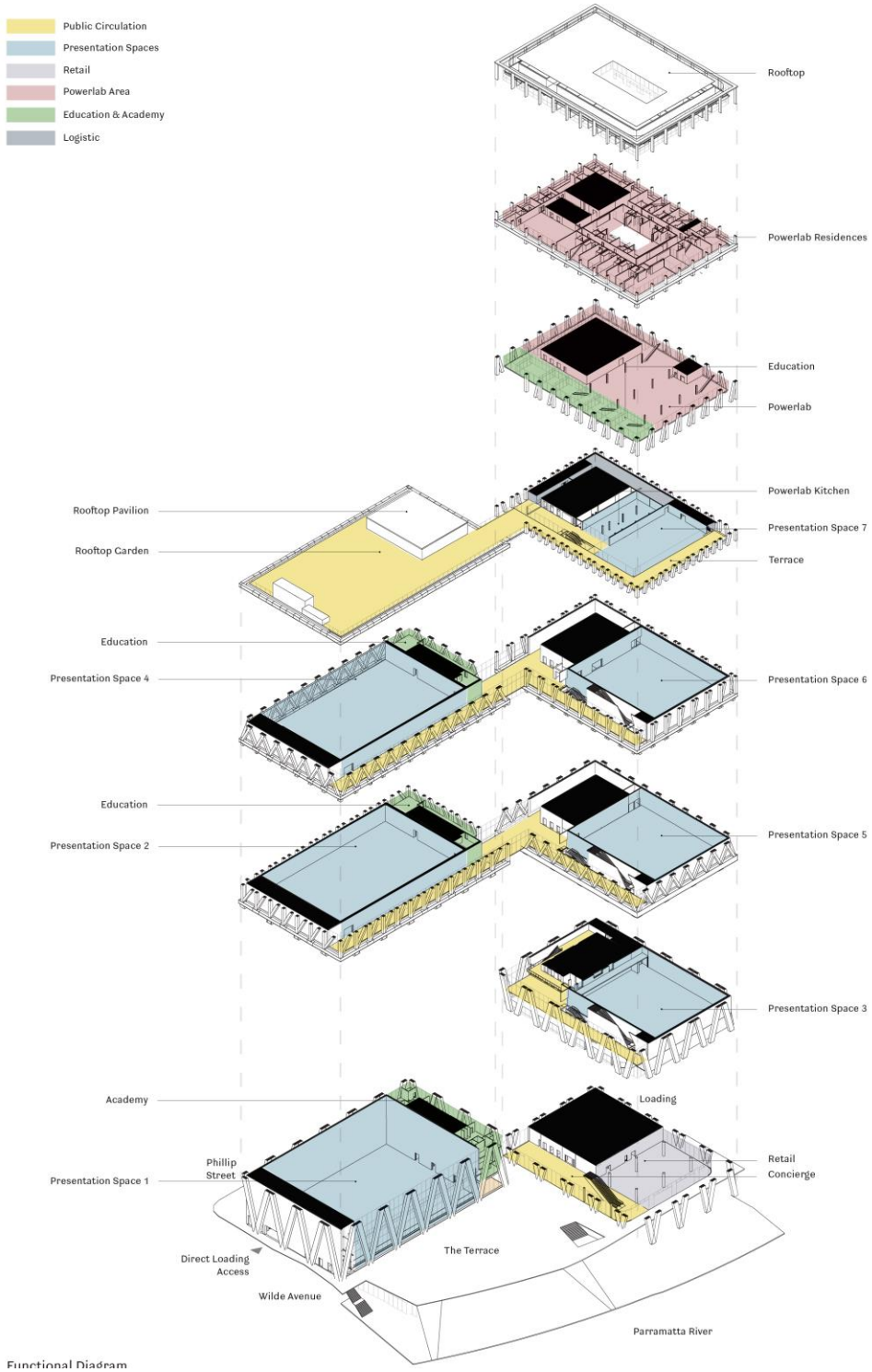
**Table 2 Key amendments to the application**

| Description | Illustration |
|---|---|
| The building footprints have been reduced as follows:<br>• The setback from Parramatta river has been increased from a minimum 22.1m to 28.3m.<br>• The setback from Phillip Street has been increased from a minimum 8.6m to 13.2m, enabling the retention of St George's Terrace as discussed below.<br>• The setback from Wilde Avenue remains unchanged.<br>• The setback to Dirrabarri Lane remains unchanged and continues to be defined by the Right of Carriageway providing service access to the neighbouring property to the west of the subject site.<br>• The setback to 32 Phillip Street has been decreased by 1.15m from 10.4m to 9.25m. |  |
| The maximum building height has also been reduced for the eastern building by 1m from RL61.80 to RL60.80. |  |

| Description | Illustration |
|---|---|
| • The river frontage has been redesigned as a sloped embankment that seamlessly bridges the level difference between the riverfront promenade and the PS1 terrace which allows the Civic Link to extend northward and connect directly with the river front.<br>• Turfed open spaces are retained along the river frontage and outside PS1 for recreation or outdoor events.<br>• The northern extent of Dirrabarri Lane has been reconfigured and slightly reduced in width. Retaining walls have been incorporated to maintain existing levels immediately against the eastern wall of the Meriton building whilst allowing Dirrabarri Lane to meet the river level. This level change is necessary to support a pedestrian link between the Powerhouse and the Meriton building whilst also permitting emergency vehicle access to the river level. |  |
| • The undercroft area has been retained as a spatial requirement to convey floodwaters. However, this space has been designed with screens to prevent access except for when a managed event is being undertaken by the Powerhouse. Such programmed events will ensure public access is managed and coordinated in tandem with the Flood Emergency Strategy developed for the site. |  |

| Description | Illustration |
|---|---|
| • The Civic Link terminates in a public stair and there is a public lift which will be available for use 24/7.<br>• A series of seating steps are to be provided at the Parramatta River frontage, at the termination of the Civic Link.<br>• A tree from the Willow Grove landscape, a Cupressus macrocarpa, will be retained within the Civic Link. |  |
| • The forecourt fronting Phillip Street has been enlarged. This creates greater opportunities for activation and allows for more a streamlined operation of the various arrival and service functions of the Powerhouse.<br>• The bus drop-off area has been reduced from 3 spaces to 2 spaces, allowing buses to park within an existing parking lane and enabling the removal of the indented bus bay. |  |

| Description | Illustration |
|---|---|
| Various design changes are proposed to the building facades:<br>• The height of the large operable door on the northern side of 'Presentation Space 1' has been reduced from 20m to 9.25m.<br>• The large doors on the southern side of PS1 have been removed.<br>• The portion of operable façade allowing direct loading from Phillip Street to PS2 has been removed.<br>• Various amendments to the buildings' exoskeleton in response to the proposed changes to the floorplates and internal design development. The latticework is also proposed to only commence 4m above ground level, to address the risk of people scaling the façade. |  |
| The proposed amendments to the building setbacks and design development has enabled the retention of St George's Terrace on the site. This will comprise works to integrate the terrace with the renewed site and to adaptively reuse the building as an ancillary component to support Powerhouse Parramatta programming. |  |

| Description | Illustration |
|---|---|
| Various design changes are proposed to the building floors:<br>• Presentation spaces PS1, PS3, PS5, and PS6 have been reduced in area while PS2, PS7 and PS7 Kitchen have maintained similar areas.<br>• PS4 increased in area by incorporating area previously dedicated to circulation space.<br>• The external terraces on the northern side of PS2 and PS4, and the Powerlab terrace on Level 5 of the western building, have been enclosed to create more appropriately scaled circulation zones internally.<br>• The majority of education spaces have been relocated to the western building, co-locating with the Powerlab which has been reduced to accommodate these new education areas.<br>• The concierge area has become more generous with increased visibility and connection to Phillip Street.<br>• The Powerlab Residences have reduced from 40 apartments to 30, freeing up more room for communal areas and a more generous atrium space.<br>• A photovoltaic cells zone has been introduced to the building rooftops, covering all available area not otherwise used for publicly accessible areas, landscaping, services or the like. |  <br>Functional Diagram |

# 5.0 Clarification, additional information, and further assessment

The following section should be read in conjunction with **Appendix A** and the relevant appendices of this report, which provides further detailed responses to matters raised by public agencies and DPIE in response to the information and assessment provided in the EIS. The following sections address key aspects of those responses where additional information and/or assessment has been provided in support of that lodged with the EIS, including of the proposed design changes.

## 5.1 Design integrity

An amended Design Integrity Report has been prepared to reflect the design changes made to the proposal in response to the submissions received and the design development occurring (discussed in **Section 4.0** above). The assessment compares the competition entry with the DA design and provides an assessment as to whether the updated design scheme remains generally consistent and whether the scheme has altered the conclusion of the Design Integrity Panel in relation to design excellence.

The assessment at **Appendix E** confirms that the Panel considers that the developments to the proposed design scheme are consistent with the competition design in relation to the requirements of the Design Excellence Strategy and do not alter the Panel's conclusion that the design demonstrates design excellence. The assessment also confirms that these developments do not alter the Panel's conclusion that the design demonstrates design excellence, and notes:

- The integrity of the internal museum spaces has been retained, along with the elements that the panel consider integral to the architectural concept from the winning design.
- The public domain design has been amended to better resolve differences in levels between Civic Link and the river foreshore. The reinstatement of a sloped lawn along the eastern frontage ensures greater alignment with the competition winning design.
- The exoskeleton terminates at ground level at all extents around both buildings and ensures that the strength of concept demonstrated in the winning design is maintained through design development.

The Design Integrity Panel is considering the proposed retention of St George's Terrace in the amended design, which will be addressed in a supplementary statement.

As per the Design Excellence Strategy, the panel will continue to be involved through the design development process to safeguard the integrity of the winning design scheme, as the design is translated into the construction phase of the project.

## 5.2 Willow Grove and St George's Terrace

DPIE and Council have requested further information and justification on the proposed demolition of Willow Grove and St George's Terrace, including an analysis of options that would allow the objectives of the Powerhouse Parramatta project to continue while retaining the heritage items (in part or in full) and the advantages and disadvantages of each.

### 5.2.1 Willow Grove

**Proponent's response**

While the amended proposal has enabled the retention of St George's Terrace (discussed further below), the proposed development ensures that Willow Grove cannot be retained on the site. This outcome has been informed by several factors culminating from the opportunities and constraints of the site, the physical requirements of the development, and the endorsed and best-practice design process. The culmination of these factors has meant there is no potential to retain the existing building on the site either in part or full in situ while meeting the objectives of the Parramatta project. Those objectives include to create a world class new museum; provide a public domain in the context of the river foreshore setting; creating 24/7 pedestrian movement from Phillip Street through to the river foreshore; and the establishment of a centralised circulation corridor connecting to Civic Link as further set out in Section 1.3 of the EIS and discussed further below.

Accordingly, Powerhouse has developed a comprehensive strategy for heritage interpretation (as discussed further in **Section 5.5** below), and is committed to the relocation and conservation of Willow Grove (discussed further in the sections below), in addition to providing extensive social and economic benefits associated with the delivery of a new world-leading cultural institution.

Design process

The design of Powerhouse Parramatta has been the direct result of a two-stage international design competition, whereby both local and global architectural and landscape architecture firms critically analysed the design alternatives for the Powerhouse Parramatta and surrounding public domain. The Stage 1 competition attracted 74 expressions of interest involving 529 individual firms from 20 countries. Stage 2 was made up of six shortlisted teams.

The competition brief informing the shortlisted teams requested that 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, and the design excellence requirements of the Parramatta LEP.

Of the six resultant competition entries, only one submitted entry identified the retention of Willow Grove and St George's Terrace, but the scheme did not achieve the remaining project objectives to the same extent as the winning scheme. The submitted competition schemes, therefore, made it clear that it was not possible to achieve the objectives of the Powerhouse Parramatta project while retaining the heritage item. Accordingly, 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 competition brief was endorsed by the Government Architect NSW and the Australian Institute of Architects, and the design competition was conducted in accordance with the New Museum Design Excellence Strategy that was approved by the (then) Department of Planning and Environment and endorsed by the NSW Government Architect and City of Parramatta Council. The Strategy ensured that the competition Jury comprised a range of experts in architecture, urban design, museum design, business and cultural institutions operation, and included government representatives as well as a representative from City of Parramatta Council.

Site conditions

The proposed development has been informed by the range of physical attributes defining the site. As illustrated in **Figure 2** below, the eastern and western buildings that makeup the proposed Powerhouse Parramatta have been informed by a range of factors:

- An existing carriageway easement set over a portion of the site's western shared boundary with the Meriton development at 330 Church Street, which is used to enable vehicle and pedestrian access to this neighbouring land as well as securing space that is used by emergency services to gain access to the Parramatta River foreshore. This easement is critical for the continued operation of existing buildings and emergency vehicle access, and is not to be amended by the proposed development.
- The Civic Link identified by Council in 2017, which foresees converting Horwood Place to a landscaped pedestrian and cycle only link, which will ultimately connect through to Parramatta Square and Parramatta Railway Station. This major pedestrian thoroughfare is expected to accommodate significant pedestrian and cycling traffic, and directly aligns with Willow Grove. This link presents a significant opportunity for the site and greater Parramatta through providing an important connection from the centre of the Parramatta CBD to the Parramatta River, with the site acting as the northern anchor and complementing Parramatta Square at the commencement of the link.
- The site leverages significant amenity from its location on the Parramatta River, complementing Parramatta's developing culture and arts precinct including a range of existing civic uses within the CBD and along the foreshore including the Riverside Theatre, Roxy Theatre and Western Sydney Stadium. This also has the benefit of further activating and engaging with the river frontage beyond the current environment and to deliver larger and improved publicly accessible open space along this frontage. This outcome requires the development to be physically separated from the river foreshore by a minimum 25m recommended by Council, which also benefits the mitigation of the risk of flooding. It is noted that the proposed development would also not be permitted in the northern-most section of the site that is zoned RE1 Public Recreation.

- This northern edge of the Parramatta CBD also naturally slopes down to the river frontage. Approximately halfway between Phillip Street and the Parramatta river, the site begins to slope down towards the bank of the river, falling approximately 5m to 6m across the remaining length of the site. In the interests of minimising cut and fill, and addressing the existing topography of the site and larger surrounding area, the proposal has sought to use existing level areas wherever possible.

The culmination of these site conditions has influenced the footprints and scale of development on the site, which enables the continuation of the Civic Link to the Parramatta River foreshore aligned with Horwood Place; provides significant open space in accordance with Council's vision for a new riverside park at the termination of the link; does not impede or amend the continued operation of the neighbouring development and emergency services; and mitigates and minimises impacts wherever possible in terms of the risk of flooding and site disturbances.


**Figure 2 Site conditions and the proposed development**

*Source: Moreau Kusunoki and Genton*

Programming and project objectives

The design of Powerhouse Parramatta creates a range of spaces of a scale that enable the exhibition of the Powerhouse Collection and the delivery of an ambitious and constantly changing program. Care of the Powerhouse Collection is paramount, and the design includes front-of-house, back-of-house, and servicing requirements for the delivery of a world-class museum (education and information facility). These functional parameters detailed in the design brief and technical reports demonstrate the complexities in the delivery of a new cultural infrastructure, which must achieve international benchmarks diverse utilisation, inclusivity and adaptability commensurate with its cultural and civic functions. The achievement of these functional requirements is paramount to ensuring that the buildings can serve their intended purpose.

The proposed development was selected as the outcome of a multi-stage design competition and review process on the basis that it best achieved the endorsed design brief and the project objectives. The Jury decision was unanimous and concluded that the design maximised the public realm including a clear continuation of the Civic Link; the arrangement of spaces enabled public movement throughout and provided a highly permeable ground plane; and that the built form enabled multiple programmatic and operational options.

Design and heritage integrity

In view of the above, the retention of Willow Grove cannot be achieved without compromising the vital positive aspects of the project and specifically:

- The achievement of sufficiently sized floorplate to achieve the functional requirements for the new proposed museum.
- The delivery of a linear, uninterrupted, and sufficiently sized Civic Link connection through the site to connect the CBD with the river foreshore (discussed further in **Section 5.6** below).
- The provision of an entry plaza where possible on Phillip Street that supports arrivals and departures from the CBD (discussed further in **Section 5.6** below).
- The development of buildings that comply with the flood planning level set by the Parramatta Development Control Plan, and provide ground floors that can withstand riverine flood events and overland flow flood events (refer to the discussion in **Section 5.8** below).
- The delivery of significant open space in accordance with Council's vision for a new riverside park at the termination of the link, and public domain areas generally which comprise some 19,270sqm of public open space (representing a 9% increase from the exhibited scheme).

Relocation of Willow Grove

Whilst it is necessary that the existing buildings on the site be removed in the delivery of Powerhouse Parramatta, it is proposed to deconstruct and relocate Willow Grove to another location within the Parramatta area and through this conserve and adaptively reuse the heritage item. While the heritage item cannot be retained in its existing context, this proposed approach ensures that it can be preserved and enjoyed by the local and broader community.

Advisian has prepared an Addendum Statement of Heritage Impact (**Appendix F**) identifying the heritage considerations for the relocation and conservation of Willow Grove. It confirms that the physical location of Willow Grove is part of its history, and that relocation is generally not a means of preservation except in circumstances where there is no practical alternative to retain the heritage item on the site. As has been addressed in the sections above, the retention of the building in its current location is not possible and therefore relocation is considered to mitigate the effects of its removal.

The deconstruction and relocation of Willow Grove in this instance could maintain many of the conservation values of the heritage item. This proposed relocation will require the following:

- Undertaking archival recording prior to and during the relocation of the building as a record of changes to the heritage item and its relationship to context and setting. The recording would be prepared in accordance with the NSW Heritage Office guidelines and will also address the dismantling and reassembly of the building on its relocated site.
- Completing detailed feasibility and heritage assessments to determine the methodology for the relocation process, which could comprise recording, dismantling, transporting, relocating and then reassembling the building or the intact removal, transportation and relocation of the building in whole-building sections. The methodology would be determined by and require further assessment of the structural and geotechnical integrity of the building and particularly the elements of high or moderate significance detailed in the Willow Grove Conservation Management Plan. Any sensitive demolition and relocation works would be completed under the supervision of a heritage specialist.

- The preparation of a framework for the relocation site, which must consider the setting of the building as well as providing genuine opportunities for an appropriate use, recognising that Willow Grove has an extensive history of adaptive reuses since its original use for residential purposes. The site selection process will ensure there is opportunities for consultation with key stakeholders and the local community to identify and provide feedback on potential relocation sites and adaptive reuse for Willow Grove.

This Development Application does not seek consent for the relocation and use of an external site at this time, due for the need to work with stakeholders to determine the most appropriate location for the relocated Willow Grove. The proposed Mitigation Measures would require the completion of further additional assessments prior to deconstruction works and the preparation of a framework and program for the relocation of Willow Grove prior to Powerhouse Parramatta operation. This is reflected in the updated Mitigation Measures in **Section 6.0** and as follows:

| No. | Mitigation Measure |
|---|---|
| CM-HER3 | Prior to any deconstruction of Willow Grove, works to St George's Terrace, and the demolition of the substation, an archival photographic record will be prepared in accordance with the relevant requirements of the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (2003) and Photographic Recording of Heritage Items Using Film or Digital Capture (2006) guidelines. |
| CM-HER5 | Prior to the commencement of deconstruction works of Willow Grove, Create Infrastructure NSW must complete detailed feasibility and heritage assessments and determine the methodology for the deconstruction and relocation process, with input from a suitably qualified heritage specialist and/or a heritage engineer for sensitive demolition and relocation works and with reference to the Willow Grove Conservation Management Plan and the Addendum Statement of Heritage Impact prepared by Advisian (October 2020). |
| D/O-HE3 | Create Infrastructure NSW is to develop a Willow Grove Relocation Framework for determining the new site for Willow Grove, including opportunities for an appropriate future use for the relocated building and addressing the matters relating to relocation identified in the Addendum Statement of Heritage Impact prepared by Advisian (October 2020). Consultation is to be undertaken with Parramatta Council, the Heritage Council, and the landowners/mangers of the relocation site as well as the local community in preparing the Willow Grove Relocation Framework. The Willow Grove Relocation Framework will confirm the program for the relocation process, including details of any additional approvals required to reconstruct Willow Grove at the proposed site, and will be submitted to the Secretary for endorsement prior to the issue of an Occupation Certificate for the Powerhouse Parramatta. |

Cumulative environmental impact

While the removal of this heritage item will result in an environmental impact, this impact can be mitigated through the preservation and relocation of Willow Grove and must be weighed against the significant positive benefits of carrying out the project and achieving other project objectives in relation to the delivery of a world-class cultural institution, achieving activation of the ground plane, and delivering the Civic Link connection through to the Parramatta River foreshore in a direct and legible manner. It is necessary to also consider how such an impact can be minimised or offset in the context of the wider project. The impact of the proposed development is not considered to outweigh the significant benefits that would be delivered by the project.

Powerhouse Parramatta will be the first major, world-class cultural institution to be established in Western Sydney, and is considered to be in the public interest as it:

- delivers significant social, cultural and economic benefits to the local, Western Sydney and NSW community by providing new cultural infrastructure that accommodates world class education, research and community facilities as well as education programs with high tech digital spaces for research and education programs and opportunities for culturally diverse festivals and events;
- represents the economic and orderly development of land that will support approximately 1,100 full time-equivalent (FTE) construction jobs as well as some 2,430 FTE indirect jobs over the development period, and between 300 to 400 FTE ongoing jobs (full-time, part-time and casual) as a result of the ongoing operation of Powerhouse Parramatta;
- activates the site and surrounds, providing new cultural, education and entertainment opportunities during both day and night and diversifying the local night-time economy;
- provides a high-quality built form and landscape design that achieves design excellence, caters for different users and uses, is cognisant with the significance of the proposal for the Powerhouse Parramatta, and recognises the site's location as the terminus of the city's cultural infrastructure along the Civic Link and the intersection of a number of key urban movement connections;

- considers and integrates with other projects occurring in the surrounding area, including the future Civic Link, Parramatta Light Rail, and future laneway connections to adjoining land;
- achieves a high level of environmental performance by targeting a minimum 5 Star Green Star Rating as well as utilising the Green Star for New Buildings rating tool in accordance with the ESD Strategy, implementing measures that promote and support the uptake of sustainable transport options, and designing Powerhouse Parramatta with consideration of environmental risks and climate change;
- removing carparking on the site and ensuring increased visitation by public transport, cycling and walking through increased provision of bicycle parking and upgrades to end of trip facilities, improved coordination with new and existing infrastructure outside of the site, and the development of a Travel Plan as part of the future operation of the site; and
- the development will not result in any significant environmental impacts that cannot be managed through adherence to the Mitigation Measures outlined in **Section 6.0**, standards conditions of development consent and any further mitigation measures and conditions identified during assessment.

### 5.2.2 St George's Terrace

**Proponent's response**

It is proposed to retain and integrate the St George's Terrace building through increasing building setbacks and reducing the building footprints of the eastern and western buildings. As detailed in the amended Architectural Plans at **Appendix B**, this heritage building can now be retained on the site as part of the public square to be provided on Phillip Street, and adaptively reused to support Powerhouse programming.

As detailed in the EIS, St George's Terrace is highly modified having undergone substantial alterations and additions to the front and rear elevations as part of the conversion of the dwellings for commercial and retail purposes. The architectural detailing on the front facades represents the remaining highly significant feature of this heritage item. Accordingly, it is proposed to sensitively alter the terrace to remove contemporary additions and preserve the façade and other highly significant features. This retained heritage building will support the creation of a human scale and street activation, as well as contributing to the unique identity of Powerhouse Parramatta within the CBD.

The Addendum Statement of Heritage Impact prepared by Advisian (**Appendix F**) confirms that:

- The proposed amendment to retain St George's Terrace would minimise the cumulative impact of the loss of heritage items in the Parramatta CBD.
- The proposed adaptive re-use of the heritage item to support Powerhouse programming, including retail, commercial and education uses, is appropriate with regard to the heritage significance of the item.
- The opportunities to remove intrusive fabric and restore and/or reconstruct earlier known states of significant fabric are strongly recommended.

Further detailed assessment and design responding to the design excellence criteria and additional heritage assessments to be undertaken on the site will be carried out at the detailed design and construction phases of the project. This will ensure the practical resolution of heritage conservation, visual amenity, archaeological, and design with regard to the retention and incorporation of St George's Terrace with Powerhouse Parramatta.

Additional Mitigation Measures are identified to support the proposed retention and reuse of St George's Terrace in accordance with the recommendations from Advisian. These are reflected in the updated Mitigation Measures in **Section 6.0** and as follows:

| No. | Mitigation Measure |
|---|---|
| CM-HER3 | Prior to any deconstruction of Willow Grove, works to St George's Terrace, and the demolition of the substation, an archival photographic record will be prepared in accordance with the relevant requirements of the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (2003) and Photographic Recording of Heritage Items Using Film or Digital Capture (2006) guidelines. |
| CM-HER5 | Prior to any works occurring to St George's Terrace, a Statement of Heritage Impact is to be prepared by a heritage specialist prior to any proposed works to St George's Terrace in accordance with The Burra Charter and the NSW Heritage Manual. |

| No. | Mitigation Measure |
|---|---|
| D/O-HE4 | A Conservation Management Plan is to be prepared by a heritage specialist following adaptive re-use of St George's Terrace to guide the ongoing conservation, maintenance and interpretation of St George's Terrace |

## 5.3 Other post-settlement heritage

### 5.3.1 Heritage assessment of 42 Phillip Street

DPIE and the Heritage Council NSW have requested an assessment of the heritage values of the existing substation at 42 Phillip Street.

**Proponent's response**

An Addendum Statement of Heritage Impact has been prepared by Advisian and provided at **Appendix F**, providing an assessment of the significance of the existing substation that forms part of the site at 42 Phillip Street. The Assessment confirms that while the substation is not listed as a heritage item in the *Parramatta Local Environment Plan 2011*, the substation is considered to satisfy one or more of the NSW heritage assessment criteria for local heritage significance. It does not have any social significance, rarity, or research potential, but is considered to contribute to the Phillip Street streetscape, have significant architectural style, and to form part of a series of substations constructed in this area by the Parramatta and Granville Electrical Supply Company.

This existing structure cannot be retained on the site. Its location within a central part of the south eastern portion of the site does not afford any opportunity for the retention or partial retention of the substation without adversely affecting the provision of public open space, a legible site entry, interconnectivity within the site and to the surrounding CBD, and the delivery of a world-class landmark institution. The retention of St George's Terrace has also been prioritised in this instance. Accordingly, Advisian recommends that an archival photographic record be prepared prior to demolition in accordance with the relevant requirements of NSW Heritage Council guidelines and that copies of the archival photographic record be stored at Council. This is addressed in Mitigation Measure CM-HER3 in **Section 6.0**.

### 5.3.2 Lennox Street bridge

DPIE and the Heritage Council NSW have requested further information on how any proposed or future connections to Lennox Bridge will be integrated with the heritage setting of the bridge.

**Proponent's response**

The EIS identified that there was the potential to enhance pedestrian connectivity in the future through provision of a laneway between the site and Church Street, and by providing a pedestrian ramp to the Lennox Bridge. These identified improvements would enhance the integration of the site to its surrounds, but were not identified as being critical to or proposed as part of the development and would be subject to separate and future approval by others.

Accordingly, no works are proposed to Lennox Bridge or its connection to the river foreshore. The project includes construction of a river foreshore path that will connect to the existing path that continues to the Lennox Street Bridge steps. This river foreshore path will complement and retain the bridge's existing relationship to the public domain. No amendments to the Mitigation Measures in **Section 6.0** or further measures are warranted in this instance.

## 5.4 Archaeology

DPIE identifies that further responses are required to address the archaeology issues raised by Council and the Heritage Council NSW, including any proposed measures to avoid potential archaeological impacts.

**Proponent's response**

Curio Projects has prepared an Addendum Historical Archaeology Impact Assessment (HAIA) (**Appendix H**) and Addendum Aboriginal Cultural Heritage Assessment Report (ACHAR) (**Appendix I**) in response to the revised design and associated construction impacts which include the relocation of the plant, additional piles across the footprint of each building, the undercroft and service impacts. These addendum assessments address any potential impacts resulting from the amended ground works on historical and Aboriginal archaeological potential and provide a revised excavation methodology based on the new impacts.

The amended ground works are necessary for the viability of the development and structure and comprise bulk excavation associated with services such as grease arrestor, tanks, sewer and stormwater pumps, lift pits, plant, and foundation piles, the decommission and decontamination of existing building sites, utility trenching, and landscaping works. Where it has not been possible to avoid impacts through redesign or using previously disturbed areas, then archaeological intervention may be necessary to provide a level of mitigation prior to unavoidable disturbance or removal by the development.

Aboriginal archaeology

The addendum ACHAR reviews the impacts of the revised development and confirms that further investigations will be required on site. This comprises taking push tube samples from each pile location prior to construction activities occurring, using a similar methodology to previous excavations that were completed in the same environmental and archaeological context (see **Figure 3** below). Excavated sediment extracted from the push tube samples will be inspected for archaeological potential, recorded, and photographed. Further aboriginal archaeological test excavation will occur across the bulk excavation area will occur via 0.5m x 0.5m test trenches at 10m x 5m apart. Any areas that coincide with historical archaeology will be monitored in tandem to ensure that the excavation and recording of any potential finds are completed accordingly.

An archaeological induction will be undertaken for all on site contractors involved in the below-ground works to familiarise them with the contents and recommendations of the ACHAR and addendum assessment, and the process should an unexpected archaeological resource be encountered. Mitigation Measures CM-HER1 and CM-HER2 will apply.

Post-settlement heritage

The addendum HAIA further confirms that the site is assessed as having variable archaeological potential encompassing archaeological remains of both local and State significant research potential. Accordingly, 12 test trenches are recommended to investigate the nature and extent of the potential archaeological remains. Should the testing indicate the presence of intact and significant archaeological features and deposits, then it would be anticipated that the excavations would be expanded into open area excavations.

Additional areas of the site, including excavations for services lines, additional piling, landscaping and areas subject to impacts not identified in this report may be subject to archaeological monitoring and recording. The exposure of archaeological features or deposits identified by the Unexpected Finds Procedure may result in archaeological monitoring for specific areas of the site. Mitigation Measures CM-HER1 and CM-HER2 will apply.

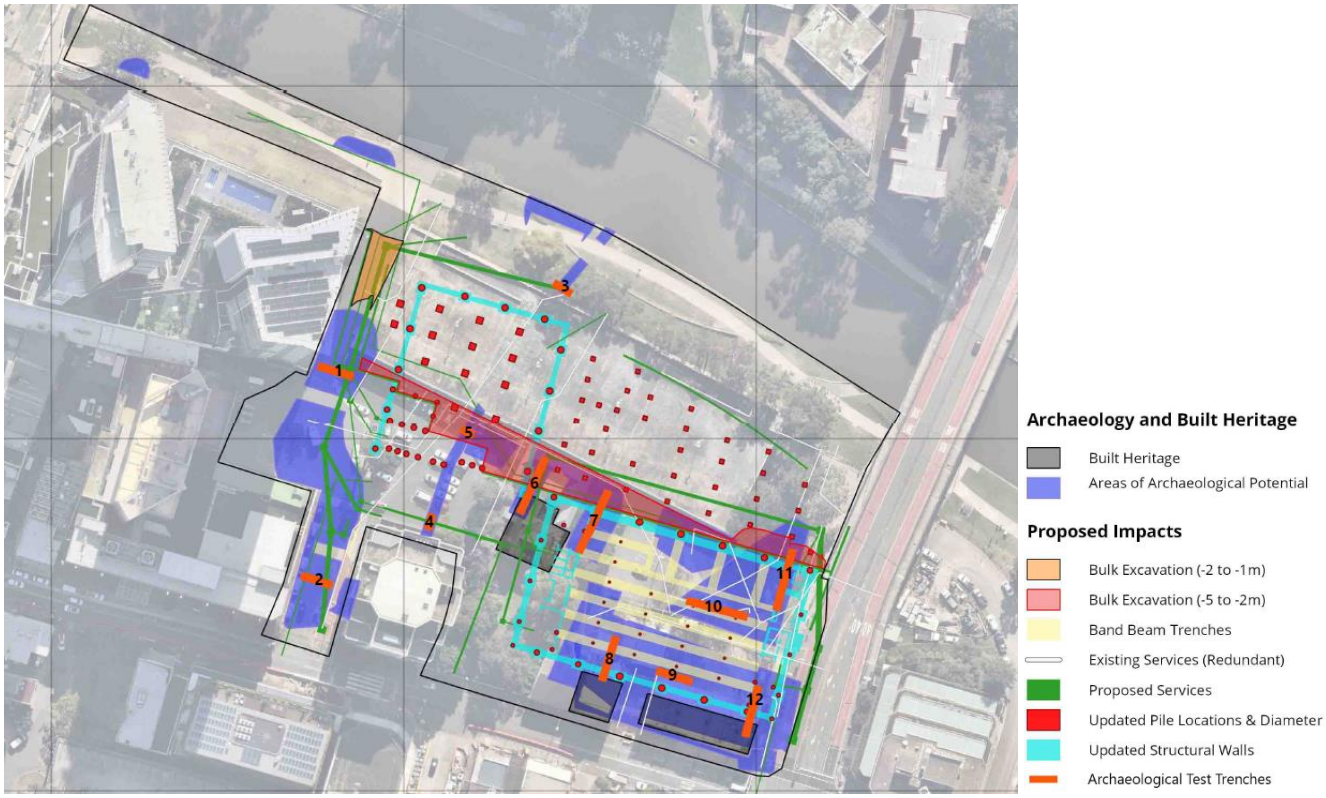



**Figure 3 Overlay of areas of archaeological potential with site works**

*Source: Curio Projects*

## 5.5 Heritage interpretation

DPIE and Council requests further evidence and analysis of opportunities for heritage interpretation on the site, and the development of a robust strategy for heritage interpretation.

### Proponent's response

The Powerhouse has prepared a Heritage Interpretation Strategy (**Appendix G**) to inform the preparation of a Heritage Interpretation Plan as part of the detailed design and operation of Powerhouse Parramatta. The Interpretation Plan will be developed in accordance with the process outlined in Section 7 of the Strategy and informed by consultation with a range of stakeholders, further research and consideration of any archaeological discoveries on the site, and the emerging museum program for Powerhouse Parramatta. The Strategy has been developed in accordance with the NSW Heritage Office's Interpreting Heritage Places and Items Guideline, the Burra Charter, and Council's Draft Heritage Interpretation Guidelines, and is informed by community and stakeholder engagement and consultation to date.

The Strategy identifies the principles that will guide heritage interpretation and identifies example interpretation strategies that may be implemented for each principle subject to further consultation, study, and coordination with museum programming. These include physical interpretation strategies such as:

- Exhibition of consolidated pre-settlement and post-settlement archaeological artefacts from the collection and adjacent sites.
- Incorporation of relevant mature trees such as gingko biloba and eucalypts into landscape design that link history the Powerhouse Museum with Powerhouse Parramatta.
- Archival social history recording of Willow Grove and St George's Terrace including an oral history project tracing surviving voices of Willow Grove throughout the twentieth century that will be integrated into the Powerhouse Parramatta Archive for perpetuity.
- Retaining the Cupresus macrocarpa (Monterey Cypress) in situ which forms part of the Willow Grove landscape and is a feature of the previous history of the site and connection to place.

In addition to these physical elements, the proposed development represents an unparalleled opportunity to incorporate a range of programmatic interpretation strategies that encourage engagement and participation in heritage. These could include:

- Developing partnerships with other local institutions or organisations, to strengthen cross-institutional bonds and engage with histories and heritages that extend beyond the footprint of Powerhouse, including engagement with the Parramatta Female Factory Precinct, the Deerubbin Local Aboriginal Land Council, and other potentially multi-year partnerships with community organisations.
- Utilising the expansive outdoor landscape adjacent to the river via annual events exploring a heritage theme, activating the public domain with installations and/or performance. This could include partnering with the Parramatta River Catchment Group to activate the Parramatta riverbank and engage communities with river health.
- Undertaking annual lecture series exploring a heritage theme, which could be broadcast, archived and publicised, including hosting the National First Nations Conference.
- Implementing an in-residence program for artists, academics and the like supporting in-depth engagement and research into one of the heritage themes. This could include a series of oral histories and public programs, connecting to Powerhouse Culinary Archive and Powerlab Kitchen.
- Implementing curatorial programs and collecting and archiving strategies to growth the Powerhouse's permanent collection in accordance with the interpretative themes.

It is recommended that a condition of consent be imposed requiring the preparation of a Heritage Interpretation Plan in accordance with the Heritage Interpretation Strategy, and in consultation with the Heritage Council and DPIE's Environment, Energy and Science Group. Mitigation Measure DO-HE1 has been updated to reflect the commitments and process detailed in the Heritage Interpretation Strategy.

### 5.6 Pedestrian circulation and public domain

DPIE has requested that further consideration be given to the public domain within the site, and particularly opportunities to improve permeability and accessibility though the site in accordance with the objectives of Civic Link Framework Plan and the Parramatta River Strategy and addressing Council's comments. In particular, the proposal should:

- explore opportunities to increase the width of Civic Link as envisaged in the Civic Link Framework Plan;
- ensure any future redevelopment of the neighbouring property at 32 Phillip Street is capable of addressing and activating the Civic Link;
- improve the integration between the lower and upper river foreshore areas to provide highly accessible, activated and programmable spaces; and
- address how the undercroft integrates with the public domain and contributes to the design excellence of the building.

It is also requested that further consideration be given to the building's interface with Phillip Street and Wilde Avenue, to ensure the proposal activates those frontages and provides an appropriate address to the Parramatta CBD.

#### Proponent's response

McGregor Coxall in conjunction with Moreau Kusunoki and Genton has refined the public domain outcome for the site with consideration of the submissions received and the operational requirements of the Powerhouse Parramatta as detailed in the revised Landscape Plans and Design Report at **Appendix C**.

The Civic Link

The *Civic Link Framework Plan* underpins the long-term aspirations of Council to deliver an approximately 490m long and 20m wide pedestrian and cycle link through Parramatta's CBD, in alignment with Horwood Place. It is important that the link remains legible and clear along this axial alignment to support movement throughout the CBD to the river foreshore. As this Civic Link runs through the site it has required that the Powerhouse Parramatta be divided into two buildings to be located either side of the link and enable the thoroughfare to continue uninterrupted to the Parramatta River foreshore. The Civic Link acts as the central spine to the site and has informed the location of the buildings, in addition to the other the physical constraints of the site, the functional requirements of the proposed museum, and the need to maximise usable open space at the riverfront (see **Section 5.2** above).

However, in dividing the buildings to enable the continuation of the link and achieve other project objectives, it is also necessary to connect the eastern and western buildings via a minor narrowing of the Civic Link. Narrowing the Civic Link and reducing the proximity of the two buildings in one section of the site supports future operations, and particularly visitor circulation and loading between the main loading dock in the western building and the eastern building. This narrower section is 11.5m by 11.3m, with all remaining sections of the Civic Link generally greater than 20m in width through the site to the river foreshore (see **Figure 4** below).


**Figure 4 Width of the Civic Link through the site**

*Source: Moreau Kusunoki and Genton*

As addressed in the amended Design Report at **Appendix B**, this minor contraction of the Civic Link is a suitable urban response:

- The narrower portion of the link is only intended to be used for pedestrian circulation, rather than outdoor dining and gathering and has, therefore, been designed without competing priorities or conflicts that might impact pedestrian flow and permeability. This adheres to the intent of the recommended 20m width through the CBD in the Framework Plan, which is understood to allow for outdoor dining and gathering spaces as well as pedestrian and cycle movements.

- The space between the eastern and western buildings has been designed to be open and unimpeded, and to maintain an axial visual connection to the river for wayfinding and permeability. The width of the Civic Link is greater than 20m at the Phillip Street frontage of the site, and is only momentarily constrained before visitors are released to the River Square. This moment of constraint announces the transition between the urban environment to the south and the natural environment of the river foreshore to the north, creating a pedestrian experience of the river foreshore revealing and expanding as one travels north through the contraction.
- The revised public domain design also seeks to maximise the connection between the ground level and the river level public domain areas to support connection between the CBD and the Parramatta River. Physically connecting the upper and lower levels of the site via the Civic Link is achieved via a sloped embankment as well as a generous public stair and lift available to the public 24/7, with a separate ramp connecting Dirrabarri Lane to the foreshore. It is not possible to provide a paved ramp precisely at the termination of the Civic Link, as the length of the ramp required in this location would not result in an equitable accessible outcome. Accordingly, the proposed stairs, lift, and separate ramp as part of the revised design for the public domain is an appropriate response that supports permeability and accessibility, and has been assessed by Morris Goding Access Consulting (**Appendix R**) to confirm that the site will achieve the relevant standards and requirements.
- This threshold treatment also supports the proposed development's role as an 'urban marker', to drive pedestrian movement from the station end of the Civic Link to the site and the foreshore open space. The minor narrowing of the link will enable visitors to glimpse Powerhouse Parramatta at the end of the Civic Link corridor, and in doing so visually announce the presence of the Powerhouse precinct.

The proposed development has been designed to enable the continuation of the Civic Link uninterrupted through the site, and to support the visual and physical connection of the Parramatta CBD to the river foreshore. The minor narrowing of the link for approximately 11m of its distance is necessary to support future operations and has been informed by the physical constraints of the site as well as the desire to provide usable open space at the foreshore. This narrower section does not impede permeability or accessibility, which is also supported by other pathways through the site.

Further, the proposed development will comply with the recommended average 20m width for the Civic Link in all other sections of the site, including its interface with the neighbouring land at 32 Phillip Street. It does not impede future access of the neighbouring building to the Civic Link, and any landscaping provided on the site to screen and shade the Civic Link may be modified and/or removed in the future should this adjacent site be redeveloped to improve activation and permeability. The proposed development's interface with 32 Phillip Street is discussed further at **Appendix A**.

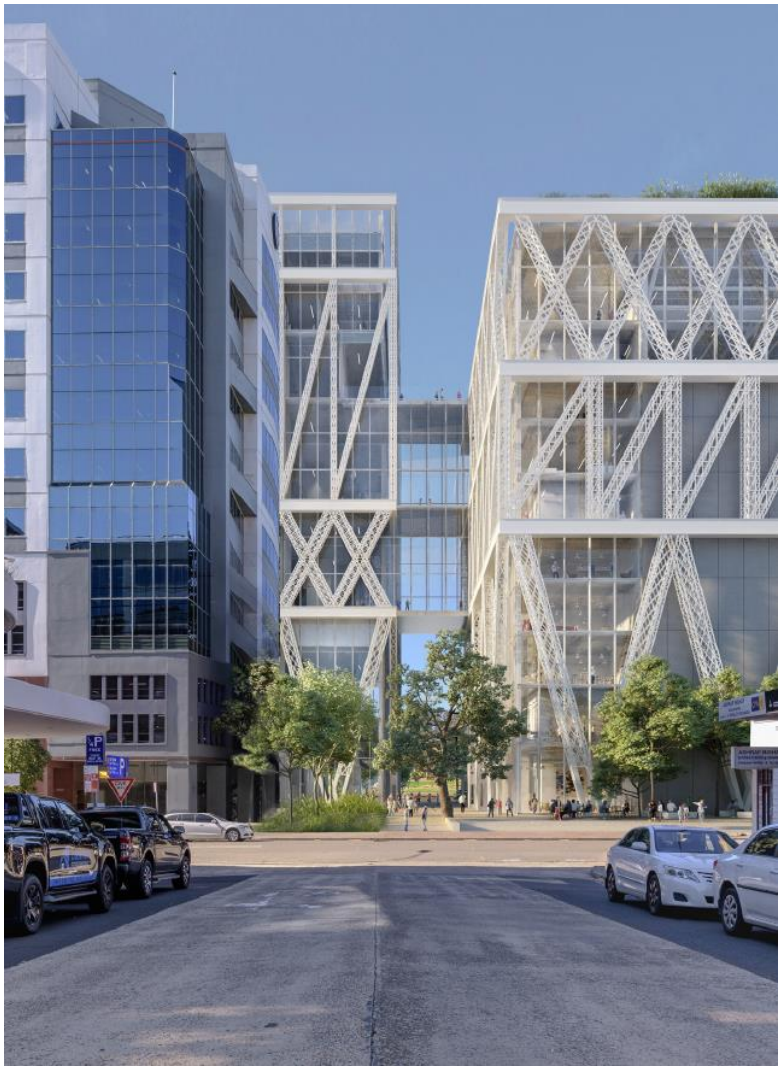


**Figure 5 Powerhouse Parramatta as viewed from Horwood Place**

*Source: Moreau Kusunoki and Genton*

Connection to the river

The landscape design has been amended in response to the submissions received to enhance the relationship between the site and the river, and to better align the design with the principles of the competition scheme. In accordance with the project objectives, Powerhouse Parramatta will deliver a precinct that has multiple entry points and can be approached and connected from all sides, so that visitors and local communities will be encouraged to walk through the site.

The amended design provides a sloped embankment that seamlessly bridges the level difference between the riverfront promenade and the PS1 terrace, allowing the Civic Link to extend northward and connect directly to the river front. This encourages greater interaction between the two dominant public domain levels and assists in reducing the visual dominance of the undercroft. It ensures that the public domain of the river foreshore and that of the Powerhouse are registered as a cohesive whole, addressing flooding as discussed in **Section 5.8**, whilst also enabling multiple programmatic overlays.

The amended development therefore provides two areas of large, level open space outside PS1 and from Dirrabarri Lane, and a sloped open space connecting PS1 to the foreshore. These open space areas have been designed to be open and functional, and work alongside other pedestrian paths along the western and eastern boundaries of the buildings to create a network of connections between the CBD and the river foreshore.


**Figure 6 Open space and the river frontage of the site comparing the exhibited scheme (left) and amended scheme (right)**

*Source: Moreau Kusunoki and Genton*

Connection to the Parramatta CBD

The amendments to the building footprints and setbacks have enabled the delivery of a larger public space fronting Phillip Street as well as the retention of St George's Terrace as part of the CBD address of the site.

The enlarged plaza on Phillip Street will provide seating and shade to invite gathering, as well as being capable of supporting programmed activities. The terrace has an existing nil setback to Phillip Street and as such its retention does not enable the continuation of this open space through the south eastern corner of the site. Rather, it is proposed to provide pedestrian pathways in front and behind the terrace to enable a continuous path of travel along the site frontage. The terrace will be used to support Powerhouse programming and as such will contribute to the activation of the Phillip Street streetscape.

The eastern building has also been designed to maximise activity visible from the CBD, ensuring Powerhouse Parramatta addresses and animates its Phillip Street address:

- The topmost presentation space incorporates full height glazing for the entirety of the southern facade, exposing its activities to the Phillip Street environment and the city beyond.
- The rooftop is occupied by a publicly accessible pavilion, reinforcing the role of Powerhouse Parramatta as a public asset, and visually and physically connecting to the broader city.

The proposed development has, therefore, favoured the delivery of a public plaza and address to Phillip Street rather than the Wilde Avenue frontage of the site that is impacted by larger vehicle movements, a significant change in level, and the Wilde Avenue Bridge that limits direct interface between the public domain and building. The Wilde Avenue elevation presents as a calm and solid facade which responds to the operational requirements of the enclosed presentation spaces behind and creates a visual and physical barrier to the traffic dominated public domain of this street. The substation located on this frontage has been moved to create 5.5m in circulation space and avoid the building footings for the exoskeleton.

The undercroft

The proposed public domain has been the subject of significant testing in consultation with Arup to ensure that the buildings are protected from flooding and the redevelopment of the site does not adversely impact neighbouring properties. Various design options and iterations in developing the initial and amended public domain, were therefore subject to detailed flood modelling and analysis which confirmed that the proposed undercroft area is the best and only outcome for the site to mitigate and appropriately manage riverine flooding (refer to the discussion in **Section 5.8** below).

Understanding that the proposed undercroft area is necessary to address and mitigate potential flooding, it has been designed to integrate with the public domain and contribute to the design excellence of the building. The area is largely screened by the new proposed sloped embankment, and is secured by operable metal mesh for the openings on the eastern and western ends of the undercroft. This integrates the undercroft area with the built and landscaped environments and enables it to be closed to the public except for managed Powerhouse programming. The use of the space will be carefully managed by the Powerhouse in line with any applicable management plans. All supportive infrastructure for an event will be temporary.

## 5.7 Environmental amenity

### 5.7.1 Reflectivity

DPIE requests further analysis and mitigation options for any reflectivity impacts on ferry operations.

**Proponent's response**

Arup has prepared an addendum Reflectivity Statement (**Appendix L**) which further analyses potential reflectivity impacts on ferry operations. The Statement notes that the impact of the façade's reflectivity on ferry operators stems from the east façades of the development when viewed from the river. This part of the development's façade casts solar reflections above the 500 Cd/m$^2$ threshold towards ferry operators, albeit for only a brief 8m travel path while the ferry turns to dock at the wharf (see **Figure 7** below).

The Reflectivity Statement determines that the reflections cast by the development's façade are not expected to result in unacceptable glare towards ferry operators in this location due to the following:

- The slow speed of ferry travel, particularly at the turning circle, allows ferry operators to adjust their vision to control glare. As such, at the 8m length of turn, a ferry driver will typically be directing their view towards the wharf, instead of toward the building.
- The reflections exceeding the 500 Cd/m$^2$ threshold occur at around 6am for approximately three weeks during October and 3 weeks in February to March. Further, partial obscuring from the existing building at 60 Phillip Street means the reflections would be visible for less than 10 minutes on clear days. At this time, the first ferry departing and arriving at the Parramatta River wharf occurs after 6am.
- A review of the façade of the existing building at 330 Church Street, adjoining the Powerhouse Parramatta site to the west, indicates that this also cast reflections exceeding the threshold at similar angles, while not causing any glare problems towards ferries. Therefore, the reflections cast by the proposed development do not create an entirely new reflected glare situation for ferry drivers.
- There are existing trees on the southern bank of the Parramatta River, outside of the site and near the ferry wharf, which also assist in blocking views towards the proposed eastern building for the Powerhouse Parramatta.

Arup confirms that the reflections are not expected to result in unacceptable glare for ferry operators, and that the extent of reflection exposure in its context is minor. No further Mitigation Measures are recommended by Arup or proposed as part of this RTS.

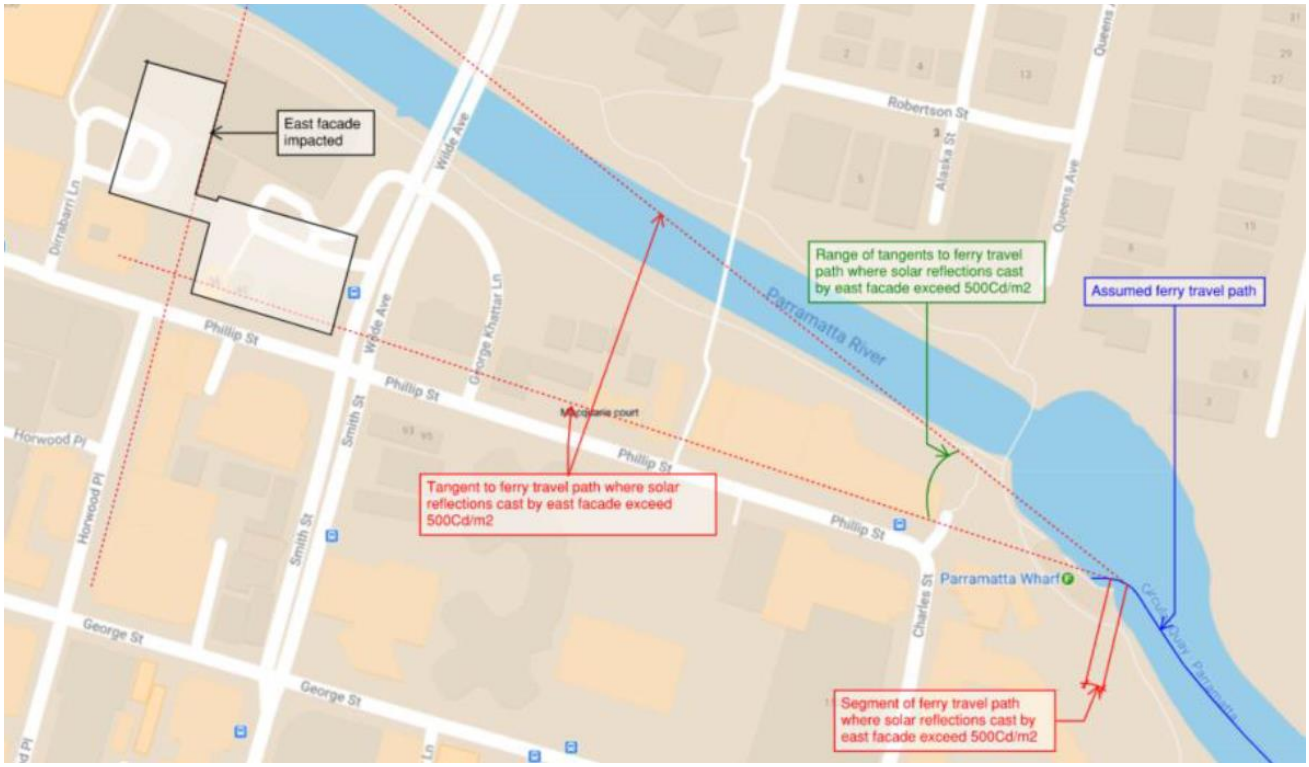



**Figure 7 Ferry's travel path intersecting with solar reflections above 500 Cd/m$^2$**

*Source: Arup*

### 5.7.2 Pedestrian wind environment

DPIE requested a response to the concerns raised in relation to wind impacts, including the reliability and accuracy of the wind modelling undertaken.

#### Proponent's response

Arup confirms that the methodology between physical and simulated modelling is identical, with the results of the analysis being combined with the same wind climate and compared against the same assessment comfort and safety criteria. The only difference is the technique for acquiring the wind data. Numerical modelling acquires data across the entire modelled volume and, therefore, does not have the limitations of testing at discrete points as experienced with physical modelling. As tested at full-scale, it has no Reynolds Number scaling issues with small passages and internal flows, which is important for this development.

In addition, simulated modelling provides both wind speed and wind direction, rather than just wind speed from the physical modelling. This allows more refined Mitigation Measures to be developed as required.

The wind modelling undertaken by Arup and provided as Appendix W of the EIS is both reliable and accurate.

### 5.7.3 Overshadowing and solar access

The potential for overshadowing was assessed in Section 6.3.2 of the EIS and the overshadowing plans accompanying the EIS (Appendix A). The analysis demonstrated that the proposed development would not cast shadows on public open space areas or surrounding residential development, and the minor additional overshadowing of the Meriton serviced apartments would be short-lived only occurring in the mornings of the summer solstice (21 December) and March equinox (21 March), and not during the winter solstice (21 June). All remaining shadows are cast on the Phillip Street and Wilde Avenue road reserves and non-residential development within the Parramatta CBD. Accordingly, it was clear that the proposed development would not give rise to any unacceptable overshadowing impacts including for the amenity of surrounding residences and open space areas.

The proposed development remains wholly compliant with the applicable height and floor space development standards that define the scale of development on this site. There is no Development Application (DA) under assessment for the purposes of residential development in the immediate surrounding area that requires assessment or consideration. It is noted that adjoining sites have the potential under existing and future planning controls to building substantially higher than the Powerhouse buildings, and would therefore benefit from significant unimpeded solar access across the lower Powerhouse buildings.

The amended design as described in this report and the revised Design Statement at **Appendix B**, has been overall reduced in height and site coverage, further minimising the potential shadows cast by the proposed development. Powerhouse Parramatta, therefore, remains appropriate and acceptable in its CBD context and does not warrant any additional Mitigation Measures.

### 5.7.4 View impacts

The proposed development was the subject of a Visual Impact Assessment (VIA) submitted as Appendix V of the EIS to identify, describe and assess the significance and appropriateness of the potential visual impacts of the Powerhouse Parramatta. The assessment summarised at Section 6.3.1 of the EIS confirmed that the development would have a reasonable impact on private views from the existing residences to the north and west of the site and a reasonable impact on public views of the Parramatta CBD. The development complies with planning controls for FSR and height under the Parramatta LEP and has been designed with as a landmark to reflect its community function and support wayfinding.

While some private commercial views of the Parramatta CBD available over the existing Riverside Carpark will be reduced, this CBD vista will likely be retuned in some form by the future development of tall towers in the field of vision as permitted under the LEP. The proposal does not impact upon any iconic views. The proposal is appropriate for and entirely reasonable within the CBD context of the precinct and Parramatta Council's intended future character for the CBD.

As identified above and the addendum statement at **Appendix M**, the amended design has been overall reduced in height and site coverage, which does not significantly change views. However, the retention of St George's Terrace *contributes to an* increase level of visual amenity and resulted in a more sympathetic response to the existing streetscape. The Terrace does not significantly detract from the ability to appreciate the legibility of the Powerhouse as a unique, iconic visual landmark and does not adversely affect assessment of sensitivity, magnitude or significance, or result in non-compliance with the planning framework.

The proposed development, therefore, remains appropriate and acceptable and does not warrant any additional Mitigation Measures.

## 5.8 Flooding, drainage and stormwater

DPIE has requested a comprehensive response to the flooding concerns raised by DPIE's Environment, Energy and Science Group, City of Parramatta and public submissions. This includes further consideration of flood events greater than the 1% AEP [6], justification for the proposed undercroft space, further details demonstrating that the structure can withstand floodwater forces, and consideration of any alternative or additional measures to ensure safe emergency evacuation.

**Proponent's response**

The Flood Risk and Stormwater Management Addendum at **Appendix J** provides a revised assessment of the updated design and responses to the submissions received. Arup confirms that the approach to flood risk management for this development and site has been founded in a range of considerations including an assessment of the probability and types of flood events, the flood hazards and consequences for these events, and a strong focus on not impacting any neighbouring properties. The ultimate resilience of the development has been assessed against both the mandated flood events (such as the 1% AEP), and rare flood events resulting from climate change. In response to these issues, the design has been further developed to maintain floodplain conveyance through the undercroft area and provide a suitable level of flood resilience for the building contents and occupants.

[6] AEP refers to the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. A 1% AEP is a flood that has a 1% chance of occurring, or being exceeded, in any one year and refers to a flood that occurs on average once every 100 years.

Flooding risk to the development site is a function of two separate influences, being riverine flooding of the Parramatta River and overland flow through the CBD which could result in flooding if the runoff exceeds the capacity of the local stormwater infrastructure. Peak overland flow flooding occurs within the first hour of rainfall, while riverine flooding peaks between 7 and 9 hours, depending on the storm event. Overland flow flood waters are higher than the riverine flooding level for the 100 year floor event (1% AEP), meaning flooding from the CBD is considered by Arup to be the foremost flooding consideration for the Powerhouse Museum rather than the site's proximity to the river.

Arup identifies the following responses to these potential risks:

- The ground floor (finished floor levels) of the eastern and western buildings will comply with the flood planning level set by the Parramatta Development Control Plan. The ground floor of the buildings will be able to withstand an approximately 1 in 1000 year flood event (0.1% AEP) with a 0.5m freeboard [7] (i.e. the museum ground floor would remain 500mm above flood waters in this event). In a 1 in 800 year (0.13% AEP) overland flow flood event, there would still be 0.3m of freeboard to the ground floor. These events are 8 to 10 times rarer than the 1% AEP event. Hence, the probability of ground floor inundation from overland flooding (including an allowance for freeboard) is very low and about 1 in 800 in any year. Alternatively, this risk can be expressed in terms of the design life of the building of 100 years and a probability of 1 in 8 (i.e. 12%) chance of occurring in that period. The probability of ground flood inundation from Parramatta River is approximately 1 in 1000 in any year (including an allowance for freeboard). All floors above the ground floor are above these flooding levels and hence there is no chance of flooding for the buildings upper floors which would house the majority of the museum collections.
- Sensitivity analysis has also been undertaken to assess the effect of a fully blocked stormwater drainage network on flood levels for the development site and its surroundings. This analysis considers the unlikely event that the stormwater networks within the site and wider Parramatta CBD are 100% blocked. The results demonstrate that the ground floor of the buildings would still be more than 0.3m from the estimated flood level.
- All external substations will be built above the flood planning level in accordance with Endeavor Energy's requirements. Critical electrical infrastructure within the buildings, such as main switchboards and back-up generators are located at Level 1 above this flood level. In extreme flood events where water levels exceed the Flood Planning Level, power supply to critical elements will be provided by the back-up generators which can provide emergency lighting and other essential services for up to 10 hours. Out of 10 lifts serving the museum, 8 will be connected to the back-up power supply.
- The stormwater network in conjunction with the ground plane of the site have been designed for the 5% (i.e. 1 in 500 years) and 1% (i.e. 1 in 100 years) AEP events. As a result, Arup confirms that the proposal will have an overall neutral or beneficial impact in minimising any potential adverse impact on neighbouring sites. The only entry that experiences an adverse impact is the below ground floor services and parking level louvres of the Meriton Building which is already inundated under existing conditions. There are, therefore, no material changes required to the flood warning or evacuation procedures for surrounding properties. A summary of the impact to adjacent buildings is provided in **Table 3** below.

**Table 3 Assessment of flood impacts on adjacent properties**

| Location | RL AHD (level in metres) | 5% AEP (1 in 500 year event) | 1% AEP (1 in 100 year event) | 1% AEP + CC (1 in 100 year event, plus the effects of Climate Change) |
|---|---|---|---|---|
| **30 Phillip Street (Parkroyal Parramatta)** | | | | |
| Vehicle entryway | Approx. 6.57 | Existing: 6.79<br>Proposed: 6.79<br>Change: No change | Existing: 6.88<br>Proposed: 6.87<br>Change: -0.01 | Existing: 6.93<br>Proposed: 6.92<br>Change: -0.01 |
| **32 Phillip Street (GE Building)** | | | | |
| Floor level | Approx. 6.89 | Existing: 6.79<br>Proposed: 6.76<br>Change: -0.03 | Existing: 6.85<br>Proposed: 6.82<br>Change: -0.04 | Existing: 6.91<br>Proposed: 6.89<br>Change: -0.02 |

**7** A factor of safety expressed as the height above the design flood level. Freeboard provides a factor of safety to compensate for uncertainties in the estimation of flood levels across the floodplain, such and wave action, localised hydraulic behaviour and impacts that are specific event related, such as levee and embankment settlement, and other effects such as "greenhouse" and climate change.

| Location | RL AHD (level in metres) | 5% AEP (1 in 500 year event) | 1% AEP (1 in 100 year event) | 1% AEP + CC (1 in 100 year event, plus the effects of Climate Change) |
|---|---|---|---|---|
| Dirrabarri Lane vehicle entryway | Approx. 6.70 | Existing: 6.66<br>Proposed: No flooding<br>Change: No longer subject to flooding | Existing: 6.81<br>Proposed: 6.70<br>Change: -0.10 | Existing: 6.86<br>Proposed: 6.86<br>Change: No change |
| **330 Church Street (Meriton Suites)** | | | | |
| Floor level | Approx. 7.86 | Existing: No flooding<br>Proposed: No flooding<br>Change: No flooding | Existing: No flooding<br>Proposed: No flooding<br>Change: No flooding | Existing: No flooding<br>Proposed: No flooding<br>Change: No flooding |
| External louvres connected to the below ground floor services and parking level | Approx. 6.40 | Existing: No flooding<br>Proposed: No flooding<br>Change: No flooding | Existing: 5.96*<br>Proposed: No flooding<br>Change: No longer subject to flooding | Existing: 6.49*<br>Proposed: 6.53*<br>Change: +0.04 |

* *mainstream flood critical*

*Source: Arup*

Requirement for the undercroft space

A key design element that enables the ground floor of the buildings to be able to withstand flood events, and ensures that the development will not impact surrounding properties, is the proposed undercroft space. During flood events the undercroft space and the public domain on the riverfront will be flooded matching the flood behaviour of the existing site that is subject to a peak flood depth of more than 1m during the 5% AEP (1 in 500 year) event and more than 2m during the 1% AEP (1 in 100 year) event. The filling of the undercroft area with flood waters mimics the floodwater rise of the river. This design of the undercroft ensures that the proposed development is not likely to significantly adversely affect flood behaviour, nor is it likely to significantly affect the environment given it seeks to maintain the existing stability of the riverbank.

This space, therefore, maintains the existing conveyance of flood plain waters in the event of the Parramatta River flooding, and ensures there is no change to the existing conditions or any significant increase in flood levels upstream. As discussed in the section above, the resulting buildings are able to withstand an approximately 1 in 1000 year flood event and a 1 in 800 year overland flow flood event, and will not adversely impact neighbouring properties.

Emergency evacuation

To support the operation of the site, and mitigate any potential flooding risks, an emergency response plan will be prepared prior to the commencement of operations on the site to detail flood evacuation procedures (as required in Mitigation Measure D/O-FL1). The addendum assessment prepared by Arup (**Appendix J**) provides an overview of the Emergency Management Plan which will be built around a shelter-in-place approach. The Emergency Evacuation Plan would be engaged as floodwaters rise out of the river and in response to BoM, SES and FloodSmart Parramatta flood warnings.

The site has been classified as a 'Low Flood Island' in Council's draft *Update of Parramatta Floodplain Risk Management Plans*. This island effect can occur for short durations (less than one hour), and to shallow depths (approximately 0.4m) due to flash overland flooding. It can also occur during rare riverine flood events where Parramatta River breaks it banks upstream of the proposed development and floods the majority of roads within Parramatta CBD. In view of the potential for surrounding areas to be inundated, a 'shelter-in-place' strategy has been proposed consistent with other developments in the surrounding Parramatta CBD.

This requires that occupants within the building and surrounding public realm would shelter inside the building until the flood emergency is over. People taking refuge will be hosted in the front-of-house areas on Levels 1 and 2 of Powerhouse Parramatta, which are above the flood levels. Regular power supply will be available until the ground floor is inundated and emergency power supply will supply power beyond that point. The undercroft area will be closed to the public outside of organised events, however, in the event that people are in this area, evacuation from the undercroft as well as the open space areas along the foreshore will be possible from multiple egress routes.

Arup confirms that 1.8 hours will be available for people to leave the public domain areas via stairs after the engagement of the Emergency Evacuation Plan, including for persons with mobility impairments. These timeframes are adequate and need to be considered in the context of fire escape plans from high-rise buildings where it is common for buildings to be evacuated in less than 15 minutes (without lifts). The period of flooding is expected to be in the order of 5 hours for a Probable Maximum Flood (PMF)[8] event.

The design of the undercroft area to accommodate floodwater (rather than adversely alter that flood behaviour) and the management of the potential impacts of flooding on the development under the Emergency Evacuation Plan demonstrate that the proposal is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

Structural engineering

Arup has prepared an addendum statement (**Appendix N**) identifying the structural elements adopted to satisfy the forces from the flood waters up to the PMF level. The statement confirms that the buildings have been designed and will continue to be developed in accordance with the relevant Australian Standards, BCA, and engineering principles to withstand flood loadings on the structure resulting from 1% AEP +0.5m freeboard and to a PMF (determined in accordance with Australian Standard 5100.2).

No further Mitigation Measures or changes to the measures included in **Section 6.0** is required.

## 5.9 Transport, traffic, parking and access

DPIE has requested further consideration be given to the loading/unloading and drop off/pick up requirements of the proposal, with options explored to reduce the prominence of loading areas in the public domain, minimise pedestrian conflicts and ensure safe and convenient access. Council has also raised the potential for a pickup and drop off area as part of the George Khattar Lane turnaround facility.

### Proponent's response

JMT Consulting has prepared an updated Transport Assessment (**Appendix K**) in response to the submissions received.

Loading/unloading

It is proposed that loading and servicing will primarily occur from Dirrabarri Lane and the two dedicated on-site loading docks provided in the south western corner at the ground floor of the western building. These loading docks have been designed so that all service vehicles will enter and exit the site in a forward direction at all times, with no vehicles required to reverse over public footpaths.

In addition, infrequent loading is proposed to occur from Wilde Avenue to enable direct access to PS1 and PS2 for large (19m long) vehicles. This would only be utilised when changing over large exhibitions in these spaces and would be scheduled to occur outside of peak times so as not to impact the operation of the transport network.

JMT Consulting has confirmed that, given the expected profile of service vehicle movements, the service vehicle parking bays available, and the vehicle duration of stay, the loading area will have sufficient capacity to meet the needs of the future site. Further loading dock management measures have also been identified that will inform a future Loading Dock Management Plan in accordance with Mitigation Measure D/O-TA1 and the recommended conditions of consent. This includes enforcing a 30-minute vehicle time limit to ensure efficient vehicle turnover throughout the day. Despite rarely being on site, vehicles with naturally long dwell times, such as those transporting high value collection items will have deliveries scheduled well in advance and be undertaken outside of busy periods.

**8** PMF refers to the largest flood that could conceivably be expected to occur at a particular location – it defines the maximum extent of flood prone land.

Coaches

In response to the submissions received, the coach layover on Phillip Street has been reduced from three to two spaces allowing buses to park within an existing parking lane and enabling the removal of the indented bus bay. This coach passenger pick-up/drop-off area has been developed in close consultation with Powerhouse staff, taking into account the existing demand for coach parking at the Powerhouse Ultimo site as well as that likely to be generated at the future Powerhouse Parramatta. It should be noted that since the exhibition of the EIS, the NSW Government announced that the retention of the existing Powerhouse Ultimo site. This will have the effect of distributing demand for school groups across these two facilities in Sydney, rather than concentrating all demand at the future Powerhouse Parramatta.

Regarding the management of the coach parking area, school groups will notify Powerhouse staff of their intention to visit the site well before their arrival date. If travelling by bus / coach, the school will be given an arrival and departure window for when their vehicle can use the Phillip Street drop off / pick up area. In this way demand for bus/coach parking will be managed so as not to impact general traffic, bus operations, cyclists and pedestrians. This corresponds with current management protocols in place for school visits to Powerhouse Ultimo.

Coaches can be diverted to find parking off-site in nearby designated areas before returning to Phillip Street to pick up passengers. Given the constraints for coach parking on weekdays in the Parramatta CBD, layover will occur within the Camelia precinct, in line with findings of the transport assessment as well as Council's response. Potential locations for coach parking will be Grand Avenue and Colquhoun Street (see **Figure 8** below).

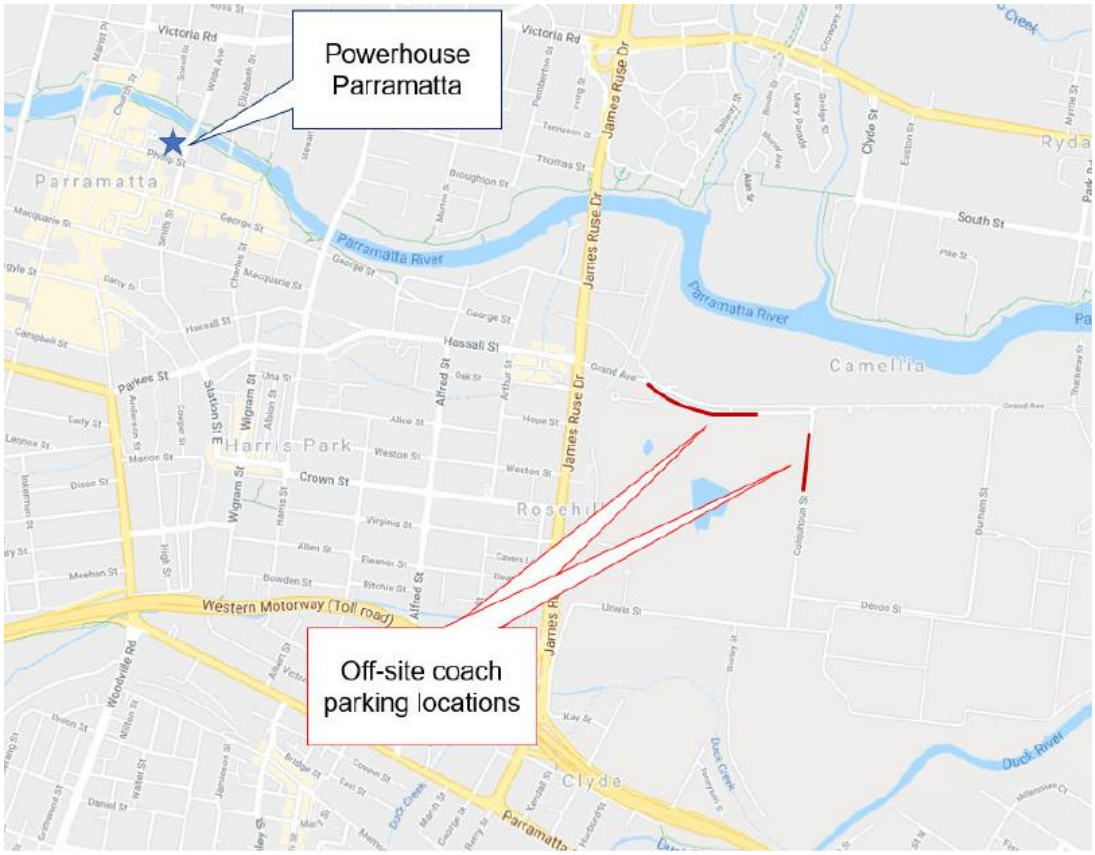



**Figure 8 Weekday coach layover locations**

*Source: JMT Consulting*

Point to point transport

The proposed development benefits from a number of existing locations in close proximity to the Powerhouse Parramatta to support point to point transport vehicles. This includes formal pick up / drop off locations within 2-3 minute walk of the site entry point:

- Phillip Street (full taxi zone)

- George Khattar Lane (set down / pick up area)
- Smith Street (night time taxi zone)

In addition to these existing areas, it is recommended that the proposed coach pick up / drop off area on the northern side of Phillip Street be utilised as a dedicated zone for point to point transport vehicles outside of 9.30am-3.30pm on weekdays. This flexible use of kerbside space provides an efficient solution to managing the transport requirements of the precinct, noting that a higher number of point to point transport journeys are likely to take place in the evenings at times when coach parking for the Powerhouse Parramatta is not required.

The updated Transport Assessment also includes a concept layout of the potential turnaround arrangements on George Khattar Lane (see **Figure 9** below) in response to Council's submission. This facility could accommodate accessible car parking as well as a drop off/pick up area to potentially service the Parramatta Powerhouse. These works may be conditioned to be completed as part of this project, or will be subject to future consultation with other agencies and may be completed via a separate planning process. A more detailed engineering plan will be provided to Council prior to the commencement of any construction, in accordance with Mitigation Measure D/O-TA3.

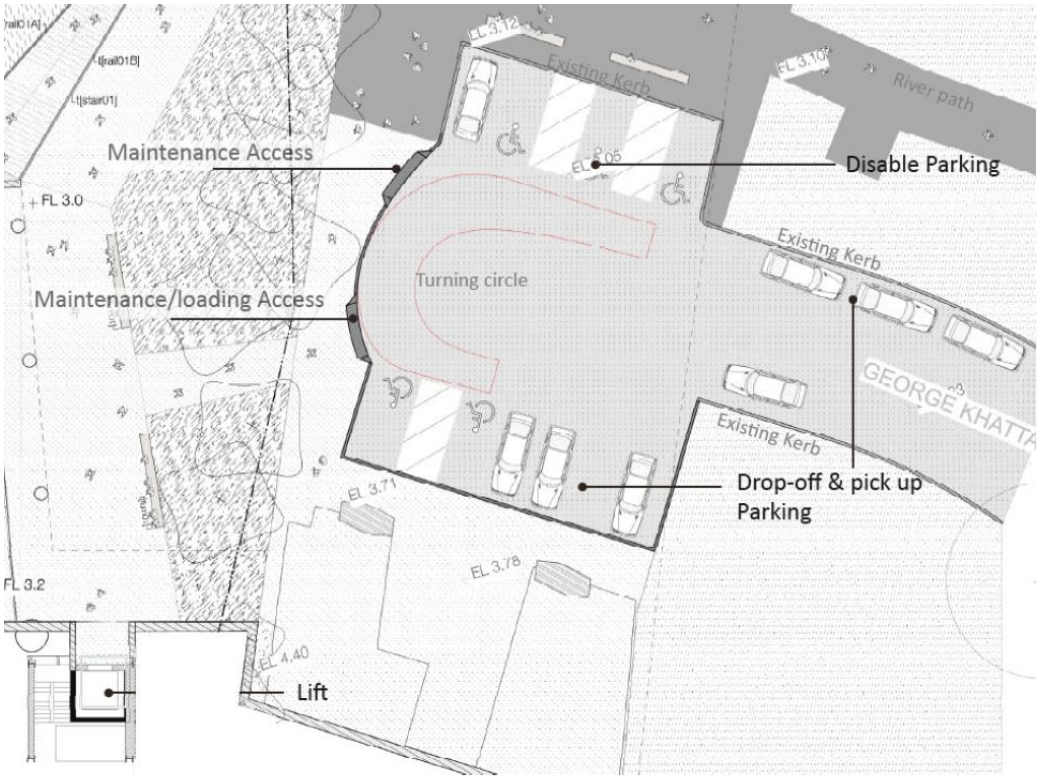



**Figure 9 Potential accessible parking and pickup and drop off facility**

*Source: JMT Consulting*

## 5.10 Biodiversity and tree removal

DPIE and Council have requested that a new Biodiversity Development Assessment Report waiver request be made addressing the number of trees to be removed on the site, which is to be coordinated with the Arboricultural Assessment and the trees to be removed to facilitate the new building and public domain. Further consideration should be given to the retention value of trees outside of the building footprint.

**Proponent's response**

Jacobs prepared a waiver request for the need to prepare a Biodiversity Development Assessment Report, addressing the site conditions and preliminary design of the Powerhouse Parramatta. DPIE and the Environment, Energy and Science Group subsequently granted the waiver on 14 May 2020 noting that the site is not considered to have habitat suitable for any threatened species or fauna. The design for the proposed Powerhouse Parramatta was progressed and refined following this initial assessment prepared by Jacobs and the waiver granted by DPIE.

Accordingly, Jacobs prepared a further subsequent assessment with consideration of the revised plans and strategies accompanying this report, which was submitted to the relevant agencies in August 2020. The waiver was granted on 10 September 2020 (**Appendix S**).

The revised assessment confirmed that 51 planted trees will be removed as part of the proposed development, which are classified and assessed as part of the Arboricultural Impact Assessment submitted with the EIS (Appendix J). This ensures that two (2) trees will be retained on the site as part of the amended development comprising a Eucalypt located adjacent to Lennox Bridge and the Cupressus macrocarpa (Monterey Cypress) located within the front garden area of Willow Grove. Further trees will be preserved outside of the site boundary on the Phillip Street frontage of the site.

The assessment from Jacobs confirmed the following:

- There is native vegetation that has been planted on the site, and two (2) trees that are potentially remnant. The majority of vegetation is not naturally occurring and cannot be assigned to a 'Plant Community Type' as identified in the DPIE BioNet Vegetation Classification. No offsets can therefore be calculated or would be required.
- These existing trees may provide limited foraging resources for threatened species, however, they form a relatively small portion of the available amount of foraging resources in the locality and along the river foreshore. The removal of these trees is identified as being unlikely to significant impact on any threatened species.
- The development site is highly modified from its original state, and the habitat remaining is fragmented and highly isolated. The operating car park and buildings in this location with high levels of human activity ensures the proposed development is unlikely to increase any impacts on native species in the immediate area. It further ensures that the suitability of the site as habitat for threatened species is low, and there is no identified breeding habitat for species in the development site, meaning the development will not have an appreciable impact on threatened species abundance.
- The movement of migratory, nomadic or local species will continue unaltered as the proposed development does not represent significant new obstacles in the flight path.
- No threatened species or ecological communities have been identified on the site as being sustained by water quality, water bodies and hydrological processes.

The proposed development is unlikely to have a significant impact on threatened species or their habitats, and as such no mitigation measures are identified as being necessary. It is emphasised that the amended design has ensured the retention of a further existing tree defining the Willow Grove streetscape, and will be complemented by supplementary landscaping and tree planting contributing to the urban tree canopy and appropriately offsetting the loss of vegetation on the site.

Mitigation Measure CM-5 requires the preparation of a Tree Protection Plan to further assess the degree of impact to any tree protection zones and provide strategies and mitigation measures for how to minimise or mitigate these impacts when the detailed construction plans have been finalised.

**Figure 10 Existing Willow Grove tree to be retained as part of the amended design**

*Source: Powerhouse*

## 5.11 Safety and security

Arup has prepared an addendum CPTED Assessment (**Appendix P**) addressing the proposed changes to the design of Powerhouse Parramatta and matters raised in the submissions received. The recommendations applied to the entirety of the Powerhouse Parramatta site remain unchanged from those made in the original CPTED assessment accompanying the EIS, including those for specific locations including pedestrian walkways, building entrances, open space areas, seating areas (with the addition of two more seating areas), vehicle entrances and coach stop all remain the same.

The addendum CPTED Assessment, however, does provide additional specific recommendations for the proposed undercroft in view of the limited opportunities for passive surveillance and activation, particularly out of hours. The CPTED recommendations for the undercroft area are summarised as follows:

- 24 hour onsite security;
- restricted access except for during managed events or activities;
- comprehensive CCTV coverage monitored by onsite security;
- adequate lighting;
- operational plans dictating the operation hours that people are permitted in the undercroft area; and
- clear wayfinding signage indicating the pathways for patrons.

The amended assessment also addresses the proposed retention of St George's Terrace and the resultant changes to surveillance, pedestrian circulation, and building entrances in this south eastern portion of the site. The recommendations contained in the addendum assessment will reduce the opportunity for crime to occur.

Mitigation Measures D/O-SEC1 to D/O-SEC3 will implement Arup's recommendations with further consideration at the detailed design and construction phase of the project.

## 5.12 Sustainability

DPIE and Council have requested an updated ESD strategy to provide further detail on the strategies shortlisted for implementation and address issues identified by the City of Parramatta with regard to energy efficiency, flood resilience and renewable energy provisions.

### Proponent's response

Arup has prepared an updated ESD Strategy (**Appendix O**) to provide additional information and addresses the sustainability matters raised.

The assessment confirms that to address the SEARs, the proposal nominates the achievement of Green Star Design & As Built rating of 5 stars, which is considered Australian Excellence as defined by the Green Building Council of Australia. It nominates measures included in the current design and operation of the building which exceed the NCC2019 provisions, including

- mixed mode operation of circulation areas;
- extensive climate change adaptation strategies; and
- large landscaped areas and design guided by life cycle assessment of material impacts.

The implementation of these measures aligns with the Greater Sydney Region Plan's objectives for landscape, efficiency and resilience.

Renewable Energy

Photovoltaic cells will be provided as part of the development, with the area containing these panels maximised to cover all available roof area that is not otherwise landscaped, publicly accessible, or required for services and plant. Off-site renewable energy outlets are also intended to offset the proposal beyond what is achieved through the efficiency of the development and the proposed on-site renewable energy sources.

Materials

The Updated ESD Strategy notes that with buildings becoming more efficient, the upfront carbon emanating from buildings emerges as a larger factor in the carbon footprint of buildings. In light of this, the report considers some measures including:

- targeting a 20% lower upfront carbon footprint against a standard practice building of the same design intent;
- optimisation of the building's exoskeleton to dematerialise steel use;
- investigate the use of green concrete with high cement replacement;
- carbon neutral construction site purchasing renewable energy;
- dematerialise (meaning that materials serve a dual purpose) – precast concrete is structural while also acting as internal wall finish;
- use of recycled materials in acoustic layers;
- PVC will be minimised and where used will be best practice PVC pursuant to the GBCA; and
- all timber will be FSC certified (or equivalent).

Building Water Strategy

A number of additional water saving strategies have been included in the updated ESD Strategy. These water saving strategies are summarised as follows:

- the mandatory use of water efficient fixtures and fittings that allow for high levels of water efficiency for toilets, urinals and taps;
- a rainwater harvesting system used in toilet flushing and to supplement heating ventilation and air conditioning (HVAC) cooling tower demands;
- minimised use of cooling towers by also using air cooled chillers;
- connection to future recycled town water;

- implementation of building management system connected water meters with leak detection systems;
- permeable outdoor finishes to reduce run off and erosion;
- the building will target a 20% reduction in potable water use, relative to a standard practice building.

Recycling of Waste

Additional recycling targets have been included in the updated ESD Strategy increase rates of recycling and help in achieving the City of Parramatta's target to increase diversion of waste from landfill by 85% by 2038. These waste targets include:

- the diversion of at least 90% of construction and demolition waste from landfill;
- outsourcing an organic waste recycling service;
- banning single use items; and
- adopting a modular design and offsite construction.

## 6.0 Final mitigation measures

The final list of measures required to mitigate the impacts associated the proposed development are detailed in **Table 4** below. These mitigation measures are based upon those previously identified in the Section 8.0 of the EIS, with revised and additional mitigation measures included to reflect the additional information, clarification or response to submissions contained in this report and the accompanying technical studies. These measures represent the final and full series of mitigation measures proposed for the project pursuant to clause 7(d)(iv) of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*.

**Table 4 Final Mitigation Measures**

| Ref No. | Mitigation Measure |
|---|---|
| **Design and Operation** | |
| **D/O-BF** | **Built form** |
| D/O-BF1 | Design development and the assessment of design integrity shall occur in accordance with the process outlined in the New Museum Design Excellence Strategy approved by DPIE and endorsed by the NSW Government Architect and Council. |
| D/O-BF2 | The detailed fit-out, operation, and signage for the food and drink tenancy and any retail stores are to be the subject of separate and future approval. |
| D/O-BF3 | Details of the exact content, materiality, and illumination of signs within the facade zones will be submitted to the Secretary for endorsement prior to the issue of the relevant Construction Certificate. |
| D/O-BF4 | All external materials and finishes are to have a spectral reflectivity of less than 20%, unless a further Reflectivity Assessment confirms that the design will not result in unacceptable glare. |
| **D/O-HE** | **Heritage** |
| DO-HE1 | Prepare a Heritage Interpretation Plan in accordance with the Heritage Interpretation Strategy focussing on programmatic interpretation strategies, and may include physical installations and visual and oral history archives, that include the multiple histories of the site pre and post-contact, developed in collaboration with relevant stakeholders to identify and interpret the key heritage conservation values of the "Willow Grove and potential archaeological site)" and the "St Georges Terrace (and potential archaeological site)". The Plan is to have reference to:<br>• The conservation policies for interpretation for the "Willow Grove (and potential archaeological site)"; and<br>• The City of Parramatta draft Heritage Interpretation Guidelines 2017, unless superseded. |
| DO-HE2 | Salvaged significant fabric including contents, fixtures and objects must be made available, through a process to be developed by Create Infrastructure NSW in consultation with the City of Parramatta Council and/or local stakeholders. |
| D/O-HE3 | Create Infrastructure NSW is to develop a Willow Grove Relocation Framework for determining the new site for Willow Grove, including opportunities for an appropriate future use for the relocated building and addressing the matters relating to relocation identified in the Addendum Statement of Heritage Impact prepared by Advisian (October 2020). Consultation is to be undertaken with Parramatta Council, the Heritage Council, and the landowners/mangers of the relocation site as well as the local community in preparing the Willow Grove Relocation Framework. The Willow Grove Relocation Framework will confirm the program for the relocation process, including details of any additional approvals required to reconstruct Willow Grove at the proposed site, and will be submitted to the Secretary for endorsement prior to the issue of an Occupation Certificate for the Powerhouse Parramatta. |
| D/O-HE4 | A Conservation Management Plan is to be prepared by a heritage specialist following adaptive reuse of St George's Terrace to guide the ongoing conservation, maintenance and interpretation of St George's Terrace |
| **D/O-TA** | **Transport and accessibility** |
| D/O-TA1 | Prepare a Loading Dock Management Plan prior to the commencement of operations on the site. The LDMP is to detail:<br>• Loading dock management details<br>• Service vehicle volumes including size and frequency<br>• Details around incident management at the access to the loading dock<br>• Management of conflicts between cars accessing the site on<br>• Dirrabarri Lane and vehicle movements to/from the loading dock. |
| D/O-TA2 | A Travel Demand Management Plan will be prepared with reference to the framework contained in the Section 6 of the Transport Impact Assessment by JMT Consulting (September 2020) including provision for periodic monitoring of travel behaviour. |

| Ref No. | Mitigation Measure |
|---|---|
| D/O-TA3 | The proponent will liaise with the Council and TfNSW on the development of the George Khattar Lane turnaround facility. |
| **D/O-FL** | **Flooding** |
| D/O-FL1 | An emergency response plan is to be prepared with consideration of Section 8.3.4 of the Flood Risk and Stormwater Management Addendum prepared by Arup (October 2020) prior to the commencement of operations to detail flood evacuation procedures for Powerhouse Parramatta, including the installation of any physical, visual and/or audible warning mechanisms. The plan should form part of staff induction and training programs. |
| **D/O-NV** | **Noise and vibration** |
| D/O-NV1 | Noise emissions from any external mechanical plant are to be treated such that noise emission complies with the project noise trigger levels at all surrounding receivers. This may require the use of acoustic louvres, enclosures, barriers or attenuators. Measures will be incorporated into the construction drawings as required. |
| D/O-NV2 | Trucks that are 6 tonnes or over, or any articulated trucks, must not enter or leave the loading dock between 10pm and 7am. |
| D/O-NV3 | Noise transmissions through loading dock doors are to be assessed to ensure the doors meet the project noise trigger levels at surrounding receivers. Measures will be incorporated into the construction drawings as required. |
| D/O-NV4 | The operational mitigation measures, including revised 'deemed to comply' conditions to be developed during detailed design, will be incorporated into an Operational Noise Management Plan (ONMP). |
| **D/O-ESD** | **Sustainability** |
| D/O-ESD1 | Develop ESD strategy throughout the design development process including ongoing consultation with Green Building Council of Australia. |
| **D/O-SEC** | **Safety and security** |
| D/O-SEC1 | The final detailed construction drawings are to have consideration of the recommendations in the CPTED Report prepared by Arup (April 2020) and the Addendum CPTED Report (October 2020) as applicable. |
| D/O-SEC2 | A CCTV network for the site is to be designed in consultation with a suitably qualified security consultant. Signage is to be installed at site entries advising visitors that CCTV is in operation throughout the precinct. |
| D/O-SEC3 | A lighting strategy is to be designed and implemented in consultation with a suitably qualified lighting expert to ensure that the CCTV network is effective, and the building will be lit during the night. |
| **Construction Management** | |
| CM-1 | Prepare a detailed Construction Environmental Management Plan prior to the commencement of works on the site including all required technical management plans and with consideration of other nominated mitigation measures. |
| CM-2 | The CEMP is to include a Dust Management Sub-Plan with consideration of the recommendations in Section 6 of the Air Quality Impact Assessment prepared by Wilkinson Murray (April 2020). |
| CM-3 | The CEMP is to be supported by a Construction Waste Management Sub-Plan detailing the waste expected to be generated during the demolition and construction phases of the project development, and the associated processes for sorting, storing and processing waste, including monitoring and reporting programs. |
| CM-4 | The detailed Construction Environmental Management Plan is to include, or be supported by, a communications strategy to communicate the progress and staging of the construction process to the local community. |
| CM-5 | A Tree Protection Plan is to be prepared by the Project Arborist which assesses the degree of impact to any Tree Protection Zones and provides strategies and mitigation measures for how to minimise or mitigate these impacts. Consideration should be afforded to the recommendations in the Arboricultural Impact Assessment prepared by Tree IQ (April 2020). |
| CM-6 | The contractor or others are to consult with the Parramatta Light Rail project to identify any utilities that have been relocated and/or installed by Parramatta Light Rail prior to the commencement of works. |
| **CM-TA** | **Transport and Accessibility** |
| CM-TA1 | A detailed Construction Pedestrian and Traffic Management Plan will be developed with the appointed contractor, confirming the detailed construction methodology and specific measures for safely managing construction traffic in the surrounding area. Consultation with the owners of 32 Phillip Street must be undertaken in the preparation of the CPTMP. |
| CM-TA2 | In the event that a footpath or shared path is obstructed, appropriate diversions are to be implemented. |
| **CM-HER** | **Heritage** |

| Ref No. | Mitigation Measure |
|---|---|
| CM-HER1 | Prepare and educate all on site contractors on an Unexpected Heritage Finds Protocol and Unexpected Aboriginal Finds Policy. Should any suspected archaeological resource/relic be encountered, a stop works would be required in the area of the find, and the project archaeologist contacted. |
| CM-HER2 | Archaeological excavation works within the study area should be undertaken in accordance with the research design detailed in the Historical Archaeological Research Design Report prepared by Curio Projects (April 2020) and the Addendum Historical Archaeology Impact Assessment (October 2020) and Addendum Aboriginal Cultural Heritage Assessment Report (October 2020), and any findings from review by Registered Aboriginal Parties. |
| CM-HER3 | Prior to any deconstruction of Willow Grove, works to St George's Terrace, and the demolition of the substation, an archival photographic record will be prepared in accordance with the relevant requirements of the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (2003) and Photographic Recording of Heritage Items Using Film or Digital Capture (2006) guidelines. |
| CM-HER4 | Prior to the commencement of deconstruction works, Create Infrastructure NSW must complete detailed feasibility and heritage assessments and determine the methodology for the deconstruction and relocation process, with input from a suitably qualified heritage specialist and/or a heritage engineer for sensitive demolition and relocation works and with reference to the Willow Grove Conservation Management Plan and the Addendum Statement of Heritage Impact prepared by Advisian (October 2020). |
| CM-HER5 | Prior to any works occurring to St George's Terrace, a Statement of Heritage Impact is to be prepared by a heritage specialist prior to any proposed works to St George's Terrace in accordance with The Burra Charter and the NSW Heritage Manual. |
| **CM-NV** | **Noise and vibration** |
| CM-NV1 | A Construction Noise and Vibration Management Plan shall be prepared, including the final details of the types of plant to be used and updated estimates of the likely levels of noise and the scheduling of activities. The Plan will have references to the recommendations in Table 24 of the Noise and Vibration Impact Assessment prepared by Arup (April 2020). |
| CM-NV2 | The contractor will refer to the minimum working distances in Table 25 of the Noise and Vibration Impact Assessment prepared by Arup (April 2020), and undertake vibration monitoring at the nearest potential affected building where vibration intensive works are required within these minimum distances. Vibration monitoring should be capable of real-time alerts where measured vibrations exceed the criteria. |
| **CM-SO** | **Soils** |
| CM-SO1 | Where excavating at a depth greater than 2m, the appointed contractor should adhere to Management Procedures in the Acid Sulfate Soils Management Plan prepared by JBS&G (April 2020). |
| CM-SO2 | The detailed Construction Environmental Management Plan must set-out clear protocols in the event of an unexpected find. |
| CM-SO3 | A Construction Flood Risk Management Plan must be prepared prior to the commencement of works, describing the measures (among other things) that must be implemented to manage stormwater and flood flows for small and large sized events during construction. |

# 7.0 Conclusion

The Applicant has reviewed each of the submissions made by members of the general public, community organisations, and State and local Government agencies. In response to issues raised in these submissions, as well as matters identified by DPIE, the Applicant has undertaken further environmental assessment and provided clarification regarding the scope of the proposed development that is the subject of this planning application. The Applicant has refined the proposed development and included new Mitigation Measures to address issues raised in the submissions.

Powerhouse Parramatta responds to the strategic need and objectives for the delivery of a contemporary facility for excellence and innovation in applied arts and sciences, which will be an iconic cultural institution for Parramatta and NSW and provide a range of exhibition, research and education spaces supported by temporary accommodation, offices and co-working spaces, and retail. Powerhouse Parramatta will be the first major, world class cultural institution to be established in Western Sydney, providing significant new opportunities for local participation in the arts as well as contributing to urban amenity, liveability and tourism. It signifies substantial investment in the Parramatta CBD that is the economic anchor to the GPOP economic corridor and the wider development of the Central River City that is fundamental to Sydney's metropolitan planning future.

The SSD DA for the new Powerhouse Parramatta, as supplemented by this Response to Submissions, addresses each of the matters identified by the Secretary's Environmental Assessment Requirements and those matters identified in the *Environmental Planning and Assessment Regulation 2000*. The environmental assessment concludes that, subject to the implementation of final mitigation measures outlined in **Section 6.0** of this report, the proposed development would not result in any unacceptable impacts and will generate a number of significant social and economic benefits for Sydney and NSW. Accordingly, DPIE is requested to complete its assessment of the project and recommend the project be approved by the Minister for Planning and Public Spaces.