

# APPENDIX B REVISED ARCHITECTURAL PLANS AND DESIGN REPORT

Moreau Kusunoki and Genton





ARCHITECTURAL DESIGN REPORT  
ADDENDUM

# POWERHOUSE PARRAMATTA

MOREAU KUSUNOKI — GENTON

8 OCTOBER 2020

Contents

I. INTRODUCTION	5
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II. DESIGN CHANGES	7
--------------------	---

Summary of Design Changes  
Urban Design  
Architecture

III. RESPONSE TO SUBMISSIONS	17
------------------------------	----

Interface with the Civic Link  
Interface with Phillip Street and Wilde Avenue  
Undercroft  
Undercroft Programming and Security  
Clarifications

IV. CONCLUSION	24
----------------	----

APPENDIX	27
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## I. INTRODUCTION

This report has been prepared for Infrastructure NSW as an addendum to the Architectural Design Report for the Powerhouse Parramatta State Significant Development Application (SSDA). It provides a response to the key architectural design issues raised in the submissions received.

In response to the submissions, a series of design changes have been implemented which are detailed throughout this report.

This report has been structured as follows:

- Introduction
- Proposed design changes
- Response to submissions
- Clarifications

This report has been prepared by Genton, the local architect for the Project, in consultation with the lead designer Moreau Kusunoki.





## II. DESIGN CHANGES

The design of Powerhouse Parramatta has undergone a series of amendments to address and satisfy the submissions received during the exhibition phase of the State Significant Development Application.

A further round of minor adjustments were also implemented to reflect optimisations to the brief and operational requirements of the Powerhouse.

Further design development of the Civic Link and the main podium level has enhanced the public domain as an integrated arrival experience to the Powerhouse and gateway to the Parramatta River beyond.

The building design has developed with a reduction in height and scale, setbacks for the development have been increased to the neighbouring buildings and from the river. The steel exoskeleton is optimised for a better interface with the public realm.

Detailed studies of the Parramatta River have informed and guided an urban response that embraces the natural river flows to provide a riverside design of improved public benefit to the City of Parramatta.

### Summary of Design Changes

A summary of the proposed changes to the development is outlined in the list below:

#### Urban Design

- improvement of public domain
- increased building setbacks from Parramatta River and Phillip Street
- reduction of overall building height

#### Architecture

- further resolution of the exoskeleton
- optimisation of overall areas
- addition of rooftop pavilion in the eastern building
- optimisation of the functional stack in the eastern building



Urban Design  
BUILDING ENVELOPE AND SETBACKS

Setbacks

Key building setbacks have been increased in order to respond to submissions pertaining to the building’s relationship with the Parramatta River, Phillip Street and the general public domain.

Riverfront

The setback from the river has been increased to 28.3m, which exceeds the minimum requirement outlined by the DCP and the Civic Link DCP. This provides a more generously scaled public domain north of the building enabling a more appropriate and respectful relationship with the waterfront.

Phillip Street

The setback from Phillip Street has increased to 13.2m, which provides increased curtilage and generosity between Powerhouse Parramatta and the city. The additional setback creates more space to facilitate a multifunctional public domain at street level and facilitates the bus drop off location.

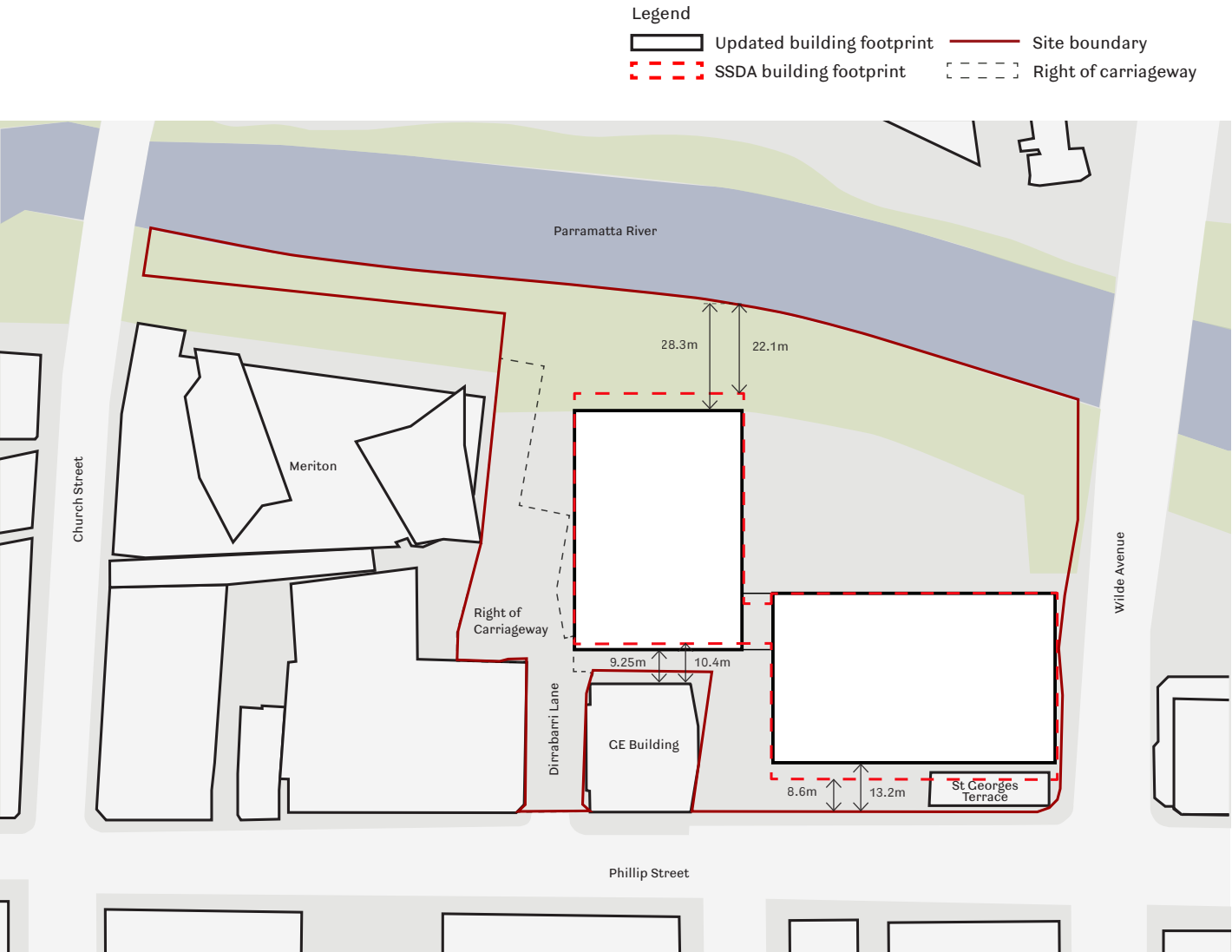
The retention of St George’s Terrace at the corner of Phillip Street and Wilde Avenue, in the south eastern corner of the site, will assist in activating this frontage of Powerhouse Parramatta.

During the design development process further modelling will be undertaken to assess pedestrian flows within the Powerhouse Parramatta precinct in this location.

An adaptive reuse strategy will be developed that could consider the use of St Georges Terrace as part of Powerhouse Parramatta that could include education, commercial and retail uses.

Wilde Avenue

The Wilde Avenue setback has been maintained and continues to be driven by the spatial requirements of the structural foundations supporting the exoskeleton, in ground services and the site boundary.



Setbacks Diagram

Dirrabarri Lane

The setback on Dirrabarri Lane continues to be defined by the Right of Carriageway providing service access to the neighbouring property to the west of the subject site.

GE Building

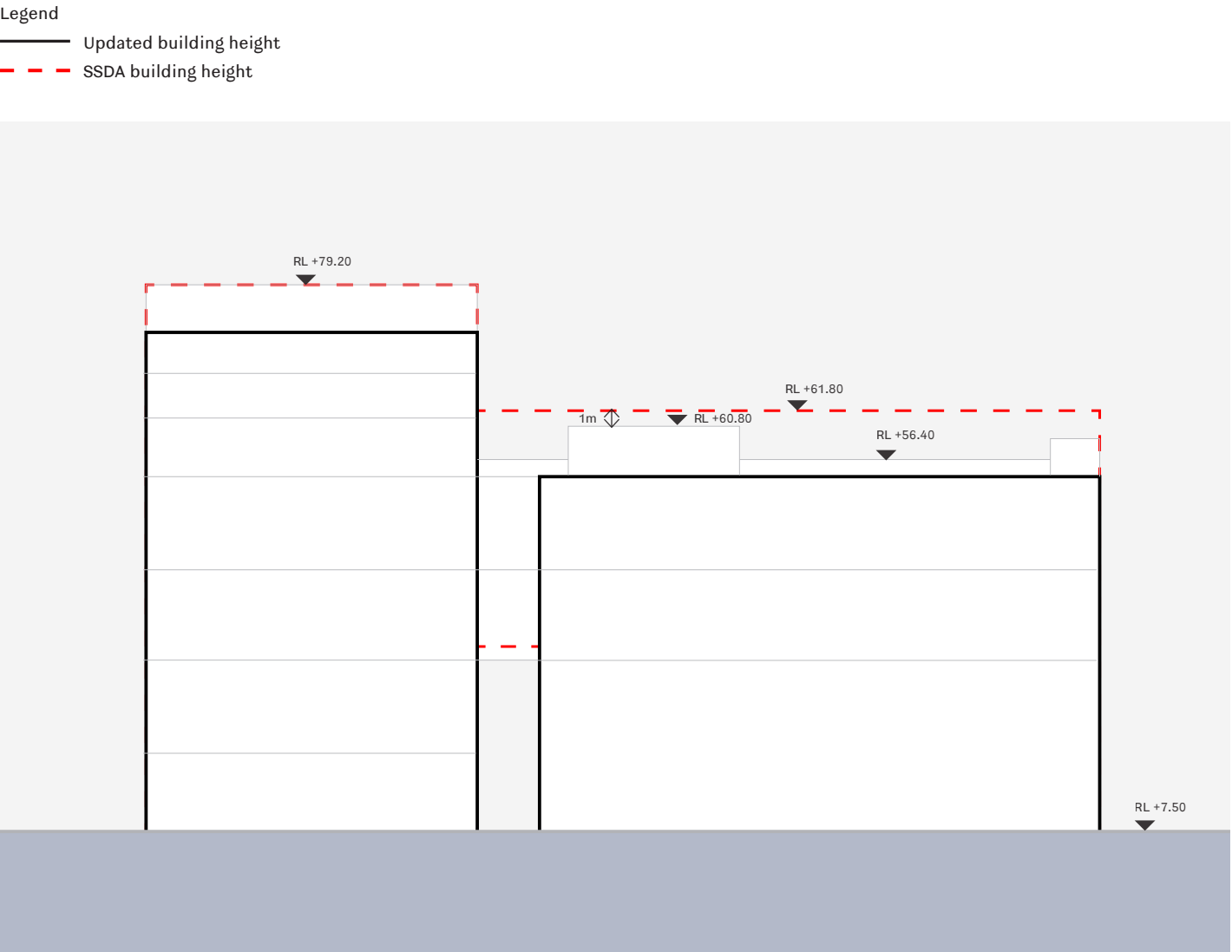
As a result of the above approach which favours the public domain outcome, the setback to the GE building south of the western building has decreased by 1.15m from 10.4m to 9.25m.

Height, Bulk and Scale

The building height has been reduced through a rigorous interrogation of the spatial requirements of all building services, structure and the operational brief.

This optimises the bulk of the building, minimises its solar impact to Phillip Street, the Civic Link to the south and the surrounding public domain, whilst maintaining an appropriate scale and presence that is aligned with the civic importance of Powerhouse Parramatta.

The height of th western building is maintained at RL79.20, and the height of the eastern building is reduced by 1m from RL61.80 to RL60.80.



Height Diagram



PUBLIC DOMAIN

Interface with the River Foreshore

The public domain between the building and the river has been reconfigured to better align with the principles of the original competition scheme. This includes the incorporation of 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.

The river front lawn north of the western building sleeves under the ground floor of the western building in line with the competition scheme and acts as an extension of the waterfront public domain, providing shelter to support its activities whilst satisfying the flood requirements of the site.

The competition scheme provided an accessible path of travel connecting the podium level with the river level, however this was in conflict with the requirement for a programmable external space level with PS1. The current design connects the two levels via a generous and realigned public stair positioned at the northern end of the Civic Link and a public lift, both of which are available for use 24/7. These work alongside pedestrian paths situated along the western and eastern boundaries to provide a network of connections between the two levels.

Collectively, these strategies ensure the public domain of the river foreshore and that of the Powerhouse are registered as a cohesive whole with carefully articulated delineations which allow for the satisfaction of the flooding requirements whilst enabling multiple programmatic overlays to occur in concert. It provides a rigorous framework for public life that enriches ones experience of the city and the river front.

Interface with Phillip Street

The setback on Phillip Street was increased to provide more generosity to the forecourt. The number of buses in the drop off area has been reduced from 3 to 2, allowing them to park within an existing parking lane and enabling the removal of the indented bus bay.

The retention of St George’s Terrace at the corner of Phillip Street and Wilde Avenue will assist in providing activation to this frontage of Powerhouse Parramatta.

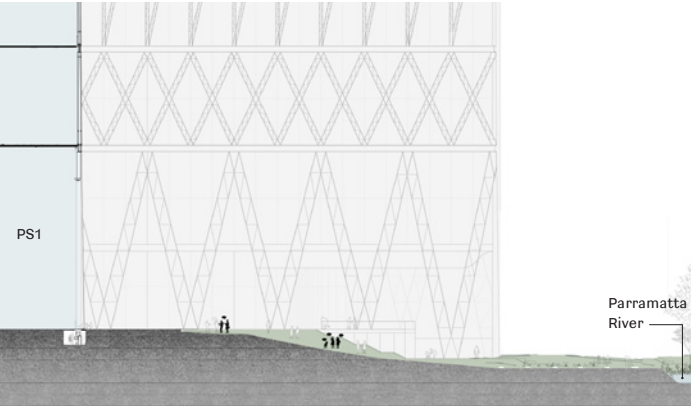
Together, these adjustments work to clarify this street address, creating greater opportunities for activation and improving the building’s engagement with the city. It also allows for more streamlined operation of the various arrival and service functions.

The topmost presentation space within the eastern building has been opened to the city via full height glazing along the south facade, adding dynamism to its relationship with Phillip Street and the city.

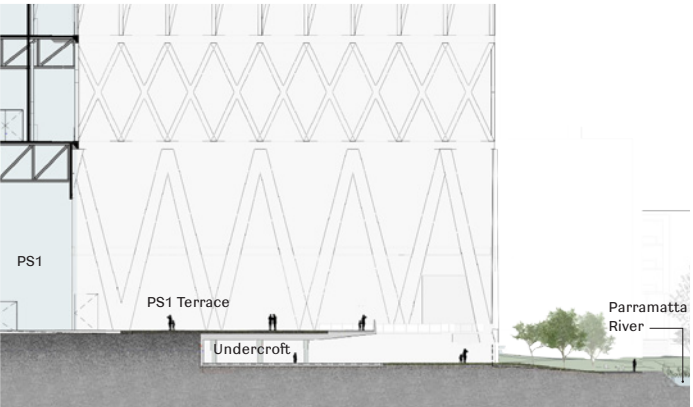
The southern facade of PS1 at street level has been made solid and the fire doors removed in response to the functional and performance requirements of PS1.



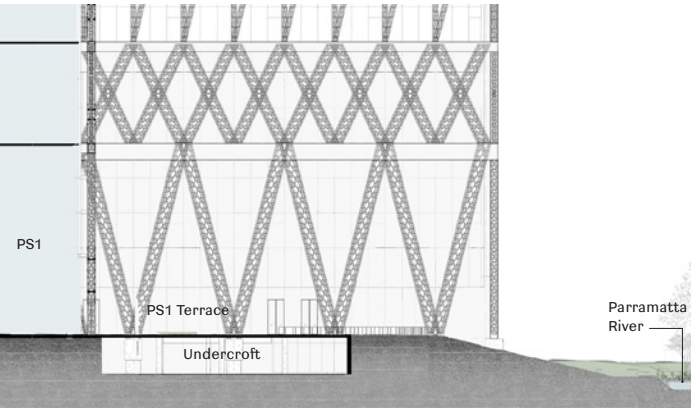
Public Domain Plan



Competition Design - Public Domain Section



SSDA Design - Public Domain Section



Updated Design - Public Domain Section



Architecture

BUILT FORM

Structure

The configuration of the exoskeleton super structure has been amended along the north facade of both buildings to improve its public domain interface and overall structural performance.

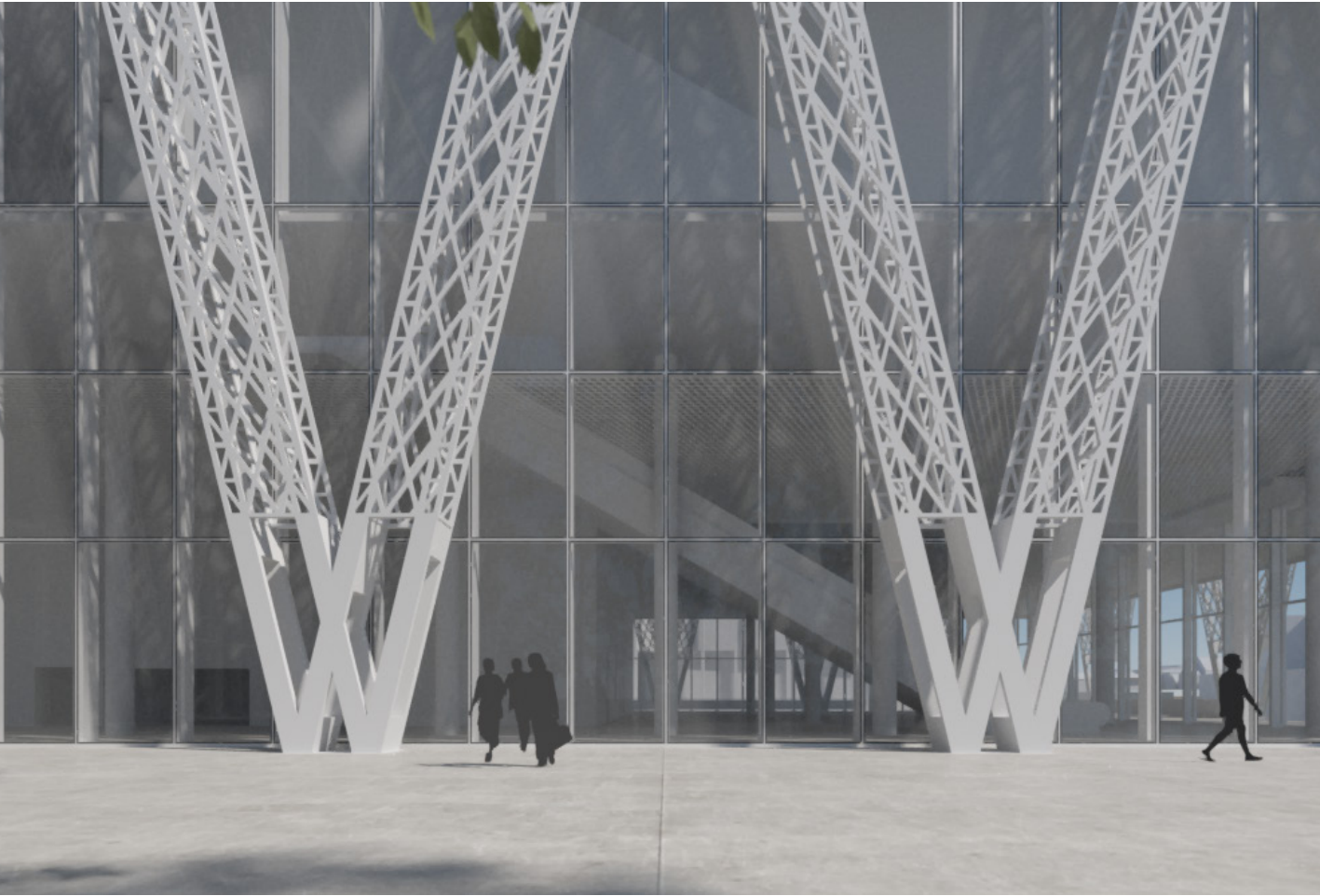
Along the western building, the exoskeleton now extends below the level of the retail terrace to engage the river level, clarifying the structural diagram and its public domain interface in line with the original competition scheme.

Along the eastern building, the exoskeleton continues along the northern facade in front of PS1, resulting in an optimal structural solution and reinforcing the uniformity and therefore massing of the overall building.

The detail design of the exoskeleton has been progressed and refined through ongoing design development and in response to constructability and engineering requirements. It has resulted in a more refined latticework pattern, uniformly applied to the entire exoskeleton except for the point at which it engages the ground plane. Here, the climbability risk was addressed by stopping the latticework 4m above the ground plane and adopting a more solid language of fabricated steel sections.

The datum established by this transition in the language also responds to the pedestrian scale at the ground plane and celebrates the grounding of the structure.

The safety of this pedestrian experience and engagement with the structure is further managed through physically and visually integrated tactile paving which is placed around each point where the exoskeleton meets the ground. This satisfies the safety requirements whilst avoiding the need to incorporate bollards or a balustrade, which would otherwise greatly compromise the public domain experience.



Exoskeleton

Facade

Several adjustments have been made to the facade as a result of further optimisations to the operational requirements of the building. These changes have occurred primarily on the north and south facades. There have been no changes on the eastern or western facades.

North Facade

The height of the large operable door to PS1 has been reduced from 20m to 9.25m. In order to improve the operational usage of this door, it has been changed from a sliding door to a guillotine door. The portion of facade immediately above the door continues to be transparent.

The external terraces on the northern side of PS2 and PS4 were enclosed to create more appropriately scaled circulation zone internally.

The Powerlab terrace on Level 5 of the western building has been reclaimed as internal floor area as part of optimisations to the internal planning of the functional areas. The terrace to PS7 is retained and will continue to

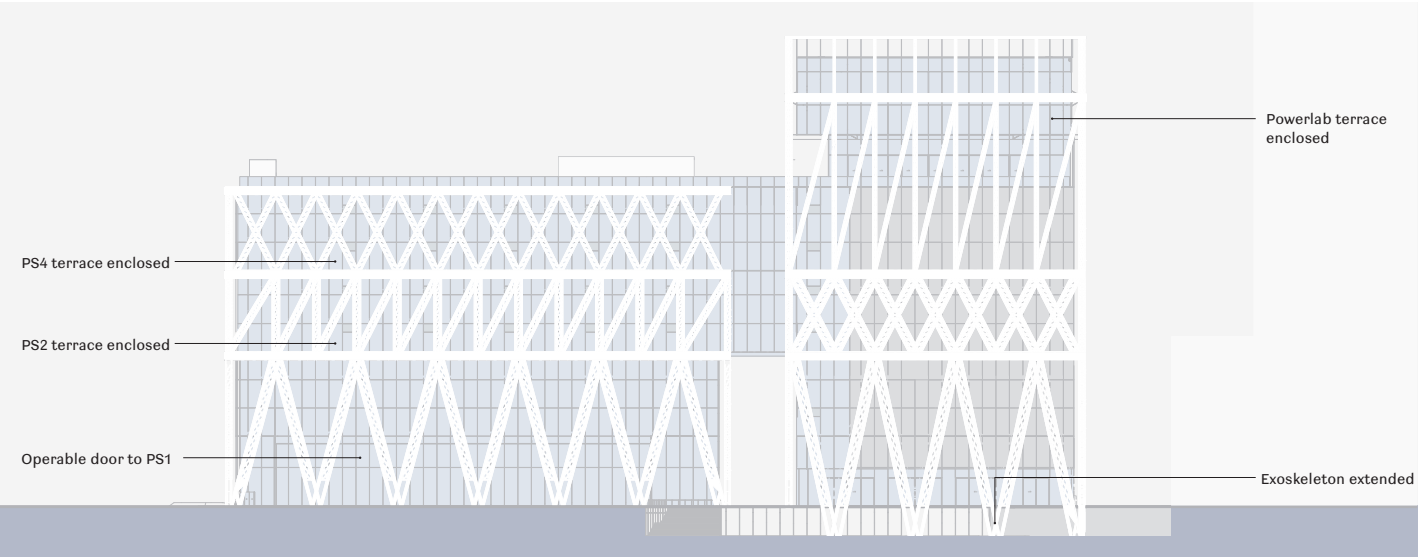
provide activation and dynamism to the northern address of the Powerhouse and to the river front public domain.

South Facade

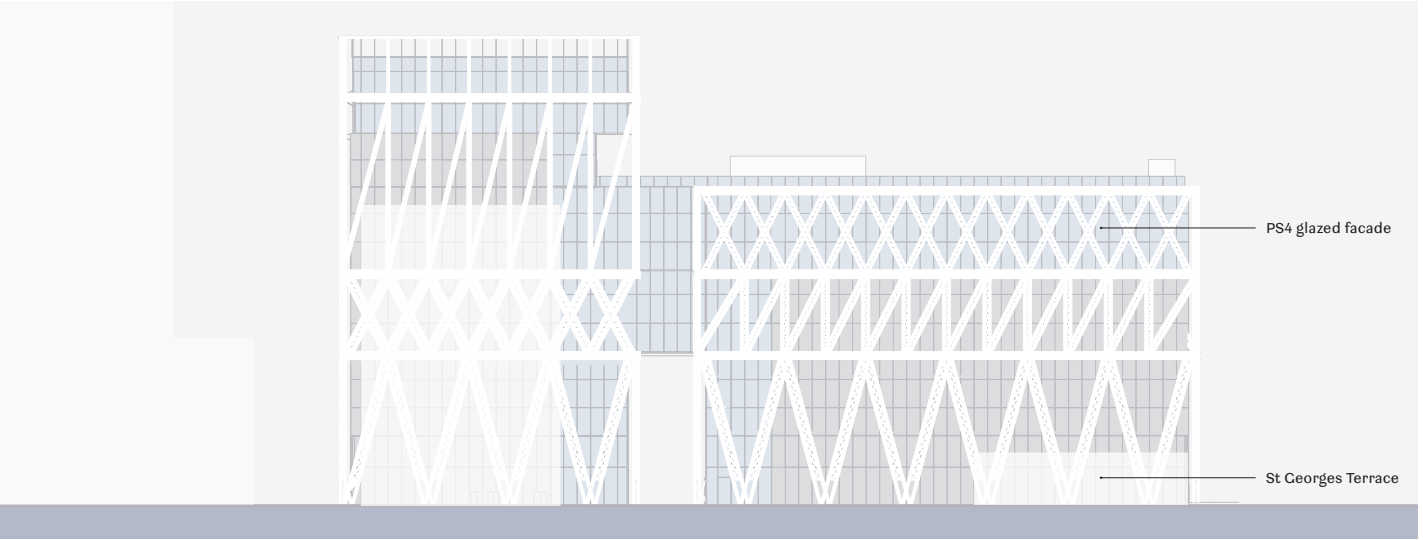
The ground level glazing and fire doors to Presentation Space 1 along the Phillip Street facade of the eastern building has been removed to meet the performance requirements of PS1.

The topmost presentation space within the eastern building has been opened to the city via full height glazing along the south facade.

In addition to the above changes, the panelisation for the glazed and opaque walls has been optimised to 2m to improve constructibility.



North Elevation



South Elevation



FUNCTIONAL USES

As a result of increased setbacks from the river and Phillip Street, some internal building areas have reduced proportionately in area. Design development has continued to focus on delivering a world-class cultural facility maintaining the number and quality of exhibition spaces in line with the competition scheme, and the mix of facilities provided within the building remains unchanged.

Public Circulation and Retail

All public circulation received proportionate decreases in area in line with the setback increases.

A portion of the street level retail along the western facade of the eastern building has been removed following further coordination of egress paths, services and public circulation.

To compensate for this reduction, a rooftop pavilion has been added to the eastern building, providing a multifunctional protected indoor/outdoor space with high visual amenity. This space will be used for education, community and event activity.

Education

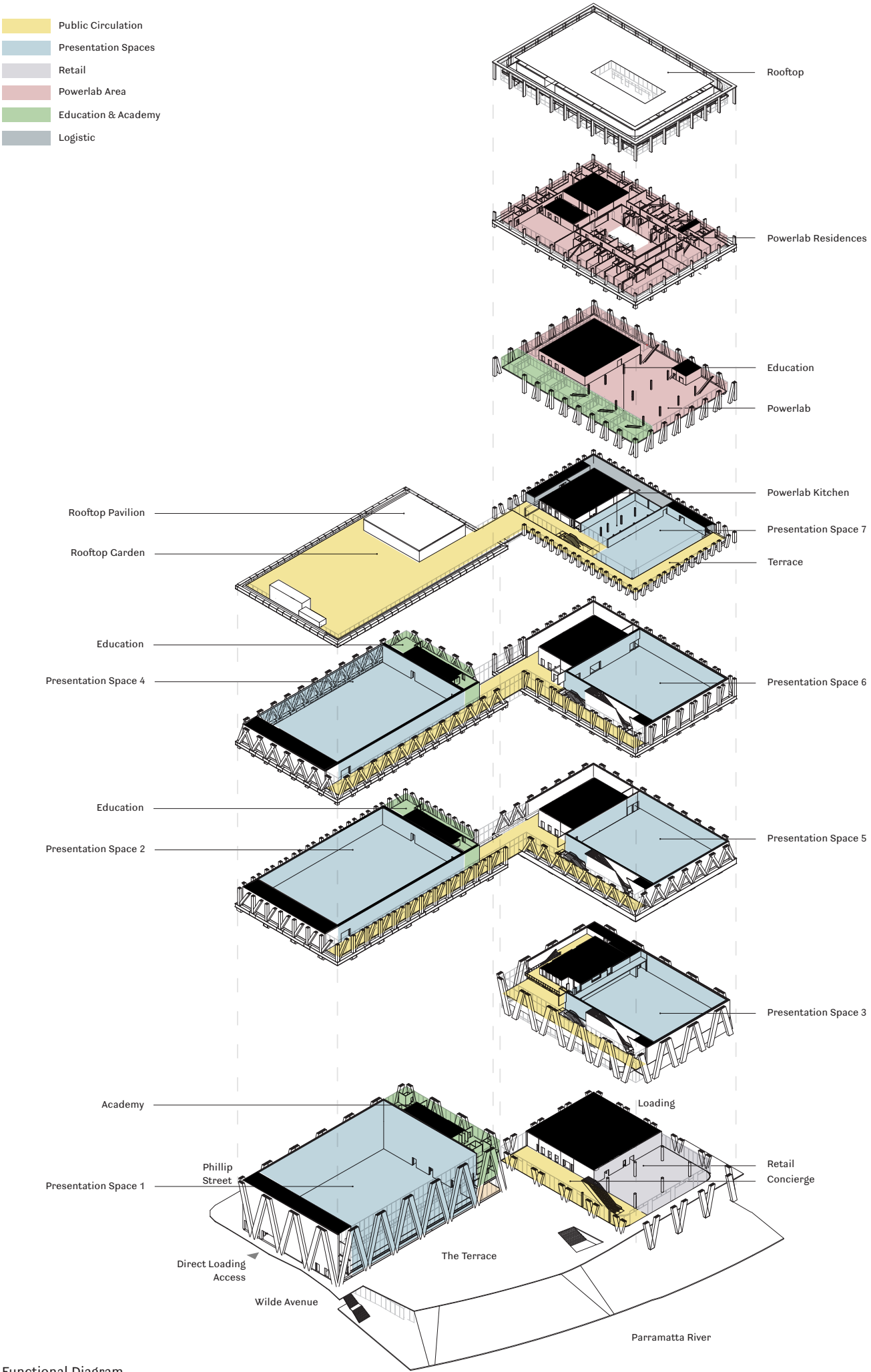
A significant portion of the education spaces have been relocated from the eastern building to the Powerlab on Level 5 of the western building. This enabled the structural design of the eastern building to be further optimised whilst also allowing the proportion of the presentation spaces in the eastern building to improve in line with operational requirements.

Powerlab Offices and Residences

The Powerlab Offices now incorporate capacity for education and community use.

The Powerlab Terrace has been removed to create more internal space for the Powerlab Offices.

The Powerlab Residences have reduced from 40 apartments to 30, creating a more operationally efficient and usable area.



Functional Diagram





### III. RESPONSE TO SUBMISSIONS

The following section outlines the responses to specific issues raised in submissions and provides clarifications in alignment with the updated design.

The responses and clarifications are structured under the following topics:

- the width of the Civic Link
- accessibility in the public domain
- interface with Wilde Avenue and Phillip Street
- the undercroft
- response to the Civic Link Framework Plan



Interface with the Civic Link

The Width of the Civic Link

Powerhouse Parramatta is split into two buildings in order to allow the continuity of the Civic Link to the foreshore whilst reinforcing its definition and providing it with activation.

The width of the Civic Link within the Powerhouse site is generally greater than 20m with the exception of the threshold condition where the two buildings are connected by an overhead bridge. Here, the width of the Civic Link is momentarily constrained to 11.5m before it is released to the River Square. This brief moment of constraint extends for 11.3m and announces the transition between the urban environment to the south and the natural environment of the river foreshore to the north.

The constrained link condition maintains a visual connection to the river whilst also exposing more of the Powerhouse facade within the Civic Link corridor, capitalising on its iconic language to create an urban marker to visually announce the presence of the Powerhouse precinct, thereby driving pedestrian movement from the station end of the Civic Link northwards towards the site and the foreshore environment.

The constraints which set the relative positions of the eastern and western buildings and thereby define the width of the Civic Link at its narrowest point are as follows:

- right of carriageway in Dirrabarri Lane
- in ground services along the eastern boundary

This urban concept of constraint and release is used to celebrate the processional experience of moving through different spaces within the urban environment. The momentary compression of space enriches the sequence of events and experiences associated with the precinct and its unique sense of place.

The eastern termination of Martin Place and its meandering transition into the Domain is an existing example which announces the end of the civic and urban environment of the city and its transition into the more natural environment of the parklands beyond.

A similar condition of constraint is experienced at the southern end of the Civic Link. Here the Civic Link is terminated by Parramatta Square which concludes with an entrance sequence leading to Parramatta Train Station and signifies its southern termination.

The extent of the Civic Link and its definition is therefore book ended by similar spatial conditions which

ceremoniously announce ones arrival and departure. The Civic Link is explicitly terminated by the transport node of Parramatta Station in the south and the cultural precinct of the Powerhouse in the north.

Public Domain Accessibility

The updated public domain design seeks to maximize the physical and visual connectivity between the ground level and the river level.

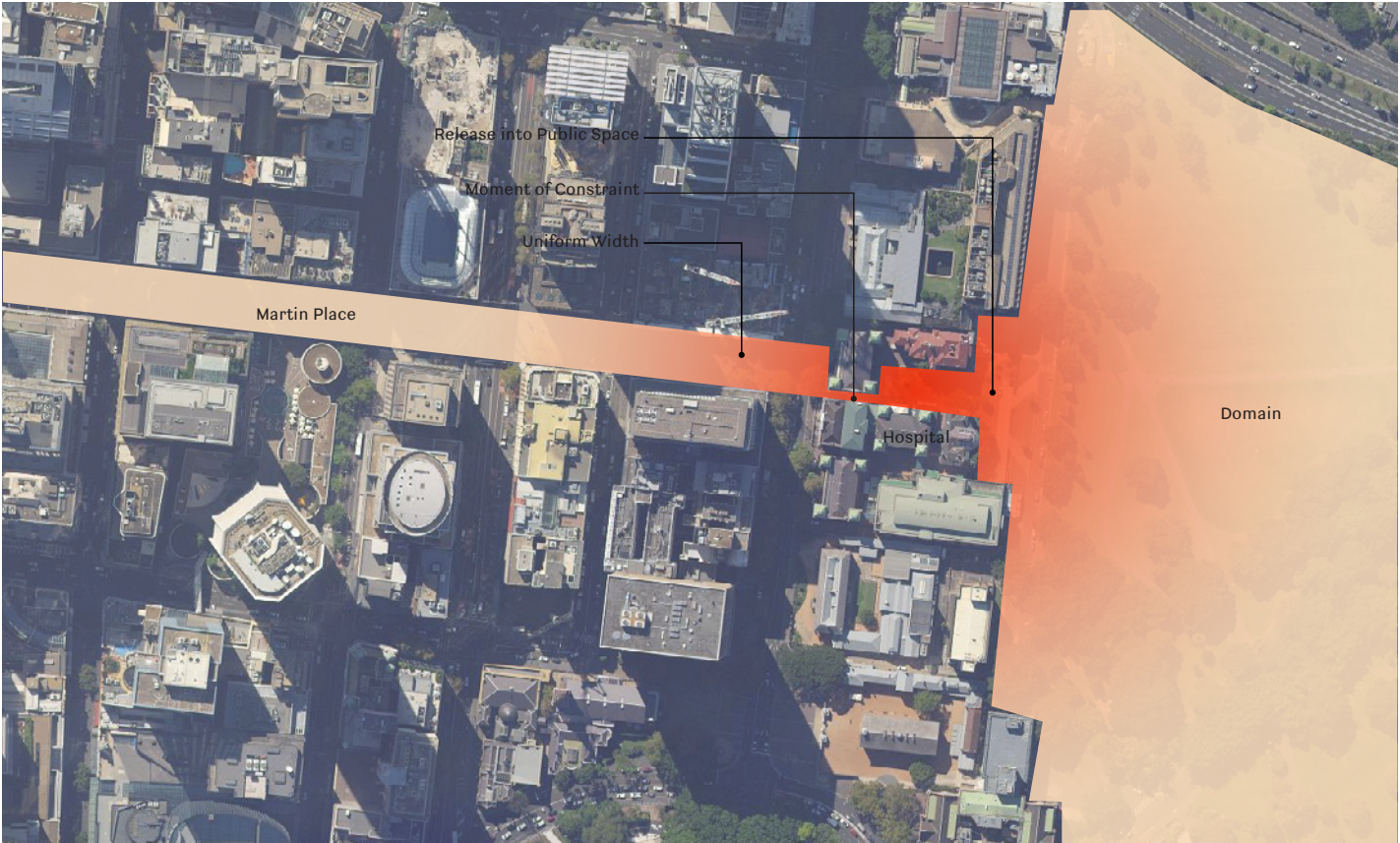
The Civic Link within the site provides 24/7 access to the river foreshore for all users via a generous public stair and accessible lift. These work alongside pedestrian paths situated along the western and eastern boundaries to provide a network of connections between the two levels.

A continuous sloped path which can be used by cyclists to access the river foreshore exists on Dirrabarri Lane on the west or George Khattar Lane to the east.

For further detail refer to Landscape Report.



Civic Link Width Diagram



Martin Place Constraint and Release Diagram



Interface with Phillip Street and Wilde Avenue

Phillip Street

The Phillip Street address is defined by a generous forecourt at street level and an active and dynamic facade that provides a diverse range of opportunities to engage with the large presentation spaces behind.

The topmost presentation space incorporates full height glazing along the entirety of the south facade, exposing its activities to the Phillip Street environment and the city beyond.

At the terrace level, a publicly accessible rooftop and rooftop pavilion adds further dynamism and activation to this address, reinforcing the role of Powerhouse Parramatta as a public asset, visually and physically connected to the broader city and river.

Collectively, these elements support a museum program and provide animation to the Phillip Street address, which elevates the public domain experience and celebrates the relationship between the Powerhouse and the city.

Wilde Avenue

The Wilde Avenue elevation presents as a calm and solid facade which responds to the operational requirements of the enclosed museum exhibition spaces behind and creates a visual and physical barrier to the traffic dominated public domain of this street. District views to the ferry terminal and the river are provided at the northern end of this facade where the solidity gives way to transparent vision glazing creating a unique corner condition. This is in line with the intent conveyed in the competition winning scheme.

The door which provides large scale loading access to PS1 is detailed to be discrete and sized to align with the panelisation of the facade. This door is infrequently used, and unloading is designed to occur within PS1, so the door is only opened to allow access into the Presentation Space, then closed immediately, limiting its visual impact on the streetscape.

Furthermore, all service doors along this facade are detailed to be discrete and are sized to align with the facade panelisation.

The position of the substation has been moved towards the centre of the facade where it avoids the building footings for the exoskeleton and complies with the required setbacks. Factoring all constraints, the substation has been located in the optimal position to minimise its impact on the public domain. The resulting clearance from the substation to the kerb face is approximately 5.5m.

Undercroft

In response to the SSDA submissions, an extensive series of iterative design investigations were carried out for the undercroft and public domain to devise a solution which was better aligned with the intent of the original competition scheme, incorporating the brief for an extended PS1 outdoor terrace whilst satisfying the flood performance requirements.

The resulting design achieves an optimal public domain outcome that creates diverse user opportunities, seamless physical connections between the ground and river level, while complying with the flooding constraints.

The updated design incorporates two openings situated on the eastern and western sides of the undercroft while the north side is largely concealed by a sloped landscaped terrain in line with the original competition scheme. Portions of the undercroft are screened off by an operable metal mesh which will be open during a flood event.

The undercroft floor and soffit heights are determined by flooding requirements and are nominated to avoid aflux to neighbouring sites along the Parramatta River. The resultant clear heights within the undercroft vary from approximately 3m to 3.5m.

Undercroft Space and Flooding

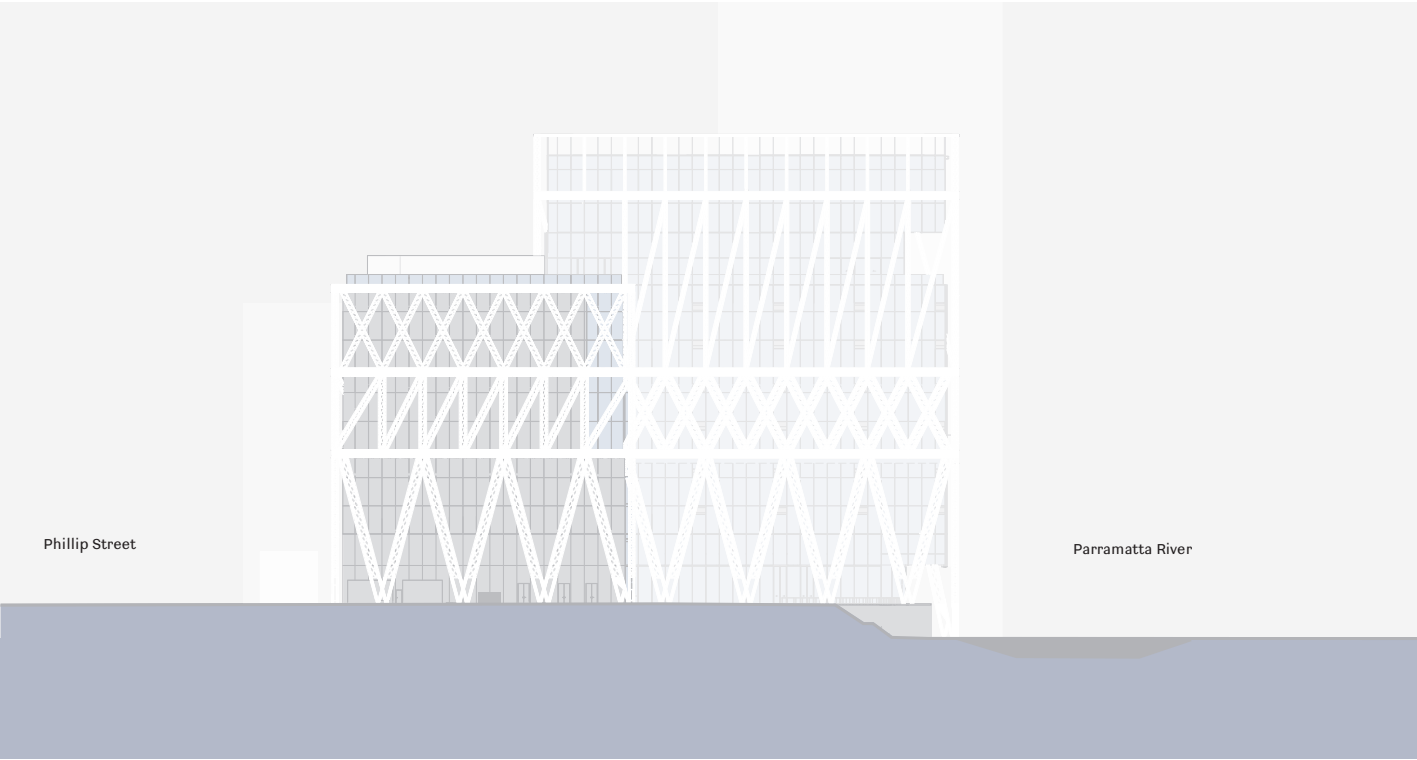
The updated design provides 3 points of evacuation from the undercroft, one along the east, one on the west, and another centered along the northern frontage. The lift which serves the undercroft is included for universal access, not evacuation. It is rated as a flood lift and can withstand exposure to water.

The rate of flooding, even in an extreme event, is very slow. The risk of not being able to evacuate in time is assessed to be low, particularly as extensive flooding tends to result from prolonged and accumulated rainfall, during which time all scheduled programmes will be ceased well in advance.

Undercroft Programming and Security

When not in use, the undercroft will be screened off to prevent occupation. Programmed use of the space will be carefully managed by the Powerhouse with exhaustive risk mitigation measures implemented for each scenario. All supportive infrastructure for each event will be temporary.

For further detail refer to Landscape Report.



Wilde Avenue Elevation



Clarifications

OBJECTIVES OF THE CIVIC LINK FRAMEWORK PLAN

City of Parramatta Council, 2017

Objectives of Civic Link Framework Plan	Response
<div>– Be an identifiable place within the CBD with a memorable name and sense of place</div>	The project provides a highly memorable destination at the end of the Civic Link with the world class cultural institution of the Powerhouse and its surrounding public domain which includes a high-quality public plaza commanding vast views to the Parramatta River.
<div>– Create a fine grained and cultural place and experience</div>	The landscape proposal ties together the city and the river while functioning as an extension of the museum with dynamic connections between the eastern and the western building. The public domain provides a series of delineated zones that provide a flexible backdrop for multiple programmatic overlays and experiences that can be standalone events or extensions of programs housed within the various museum spaces which interface directly with the public domain.
<div>– Connect (physically and symbolically) Parramatta Square Transport Interchange to River Square and corridor</div>	The two museum buildings and the interconnecting bridge, collectively form a gateway between the Civic Link and the River Square beyond. It celebrates the threshold condition within the urban environment and provides strong visual indication of the Powerhouse precinct that announces its presence and is readily identifiable at all points along the Civic Link.
<div>– Complement and extend the vibrant street life (day and night) of Church Street</div>	The Civic Link feeds into the Powerhouse Precinct in a north south orientation parallel to Church Street. Phillip Street and the future Powerhouse Lane provide key avenues of interconnectivity between the two streets creating opportunities for pedestrians to move between these two axes. This aims to strengthen the activation of the precinct as a whole.
<div>– Create a second activated North-South spine through the heart of the commercial core, transitioning from the civic, built environment to the river foreshore environment</div>	The significance of the Powerhouse, its programming and river facing public domain, will establish and reinforce the importance of the Civic Link and will support activation throughout this area of the CBD alongside the richness of the existing north south axis of Church Street.
<div>– Have a “civic” quality</div>	The Powerhouse defines the civic and cultural nature of the northern end of the Civic Link through its clear and formal expression and the monumentality of its architectural language and massing. The clarity of the public domain definition is reinforced by the landscape proposal which responds to the civic need to actively connect the city with the River plaza and foreshore while meeting the needs of a world-class cultural musuem.
<div>– Recognise and respond to heritage along the Link, including interface with George Street</div>	The architectural expression of the Powerhouse facade is clear and uniform. It forms a unique and identifiable presence within the public domain whilst also creating a quieter, more neutral backdrop for the registry and celebration of its existing character. The retention of St George’s Terrace at the corner of Phillip Street and Wilde Avenue will assist in activating the southern frontage of Powerhouse Parramatta.
<div>– Be addressed by buildings that have active façades and regular entries, with minimal back of house elements facing the Link</div>	The Powerhouse building is split into two connected buildings situated on either side of the Civic Link. The frontages that interface directly with Civic Link are populated with active uses such as retail, museum access points and concierge.
<div>– Activate the commercial core beyond 9-5</div>	The Powerhouse facilities and public domain will provide the infrastructure for operations that support a 24 hour economy through museum programming and activation.
<div>– Catalyse the upgrade of adjoining commercial spaces, ground floor areas and the redevelopment and renewal of underutilised sites along the Link</div>	The increase in foot traffic along the Civic Link bolstered by the presence of the Powerhouse precinct at its northern end and the civic renewal to the south and the inherent uplift in character this brings, should create more lucrative and attractive commercial conditions along the entire length of the Civic Link.
<div>– Respond to and incorporate Council's broader social, cultural, transport and environmental aspirations into it's development and future design</div>	The Powerhouse, through its appropriateness of design, rigoreous social and cultural programming and environmental design, will establish a high benchmark for the immediate precinct and hopefully inform the standard for all future renewal along the Civic Link and beyond.



IV. CONCLUSION

This report outlines the changes made to the development as a result of submissions following lodgement of the State Significant Development Approval Application.

The changes to the development are consistent with the winning competition design. The changes will result in an improvement to the surrounding public domain and will better facilitate the successful realisation of the City of Parramatta Council’s broader aspirations for the city.





## APPENDIX

Architectural Drawings

Materials and Finishes

Shadow Diagrams

Area Schedules



