POWERHOUSE PARRAMATTA
ENVIRONMENTAL IMPACT STATEMENT

APPENDIX GG
BUILDING CODE OF AUSTRALIA ASSESSMENT

Steve Watson and Partners

NSW GOVERNMENT

STEVE WATSON & PARTNERS

Powerhouse Parramatta

34 – 54 and 30B Phillip Street and 338 Church Street, Parramatta

BCA Statement of Compliance

Report 2020/0234 R1.0

Prepared for Infrastructure NSW

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Introduction

This report has been prepared to accompany a submission of a State Significant Development (SSD) to the Department of Planning and Environment for the construction of the Powerhouse Parramatta located at 34-54 & 30B Phillip Street and 338 Church Street, Parramatta.

This report presents the findings of a preliminary assessment undertaken by Steve Watson & Partners against the Deemed-to-Satisfy (DtS) provisions of Building Code of Australia (BCA) 2019.

It has been prepared by building regulations consultants and certifiers Steve Watson and Partners for Infrastructure NSW.

Purpose

The assessments been undertaken for the purpose of, and to the extent necessary for, submission with the State Significant Development Application to the Department of Planning, Industry and Environment.

Scope

The scope of this assessment is limited to the design documentation referenced in Appendix A of this report

Description of Proposed Development

The SSD DA seeks consent for the construction and use of the Powerhouse Parramatta at 34-54 & 30B Phillip Street and 338 Church Street, Parramatta, and is not a staged development in the meaning of Section 4.22 of the EP&A Act. The application seeks approval for the following development:

The application seeks approval for:

- Site preparation works, including the termination or relocation of site services and infrastructure, tree removal, earthworks and remediation, and the erection of site protection hoardings and fencing;
- Demolition of existing buildings including the existing Riverbank Carpark, 'Willow Grove', 'St George's Terrace' and all other existing structures located on the site;
- Construction of the Powerhouse Parramatta, including:
- Front and back-of-house spaces;
- Seven major public presentation spaces;
- Studio, co-working and collaboration spaces comprising the 'Powerlab', supported by residences (serviced apartments) for artists, students, researchers and scientists, and dormitory beds for school students;
- Education and community spaces for staff, researchers and the Powerlab Residents, the community, and education and commercial hirers;
- Commercial kitchen comprising the 'Powerlab Kitchen' used for research and product development, and as a destination, education and event space;
- Film, photography, and postproduction studio that will connect communities with industry and content that will interpret the Powerhouse Collection;
- Public facing research library and archive for community, industry, students and researchers to access materials; and
- A mix of retail spaces including food and drink tenancies.
- Construction and establishment of the public domain within the site, comprising:
- Hard and soft landscaping works;
- Publicly accessible event and operational areas;
- Provision of pedestrian and cycling facilities.
- Operation and use of the Powerhouse Parramatta including use of the public domain provided on the site to support programs and functions;

- Maintenance of the existing vehicular access easement via Dirrabarri Lane, the removal of Oyster Lane and termination of George Khattar Lane, and the provision of a new vehicular access point to Wilde Avenue for loading;
- Extension and augmentation of utilities and infrastructure as required; and
- Three (3) business identification signage zones.

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

Summary of Construction Determination	
Building Use	**Exhibition, Event & Educational premises including Office retail and accommodation**
BCA Classification	**Class 3 (Academy Accommodation & Level 6 Power Lab Residences), Class 5 (Offices), Class 6 (Retail), Class 9b (Exhibition, Event Spaces & Education)**
Number of storeys contained	**18 Storeys (Western Building)**
Rise in storeys	**18 Storeys (Western Building)**
Type of construction required	**Type A Construction**
Largest Compartment	**Exceeds permissible limitations set under table C2.2 of the BCA (Refer to the note below)**
Effective height	**72.7m** (Level 6.1 RL 76.200 – Lower Ground Level RL 3.500)
Climate Zone	**Zone 6**

Fire Compartment Note

Compliance of the maximum fire compartment size required of Table C2.2 (Class 6: 5,000m² and 30,000m³; and Class 5 & 9b: 8,000m² and 48,000m³) are not achievable in the current design as the building is considered to be a single compartment. A performance-based compartmentation strategy will be investigated through the projects fire safety engineers.

Assessment / Conclusion

A review of the proposed design that forms part of the submission to the Department of Planning, Industry and Environment has been undertaken. SWP confirm that the design as shown in the drawings referenced in Appendix A are capable of achieving compliance with the BCA, and where additional details are required SWP will undertake an assessment of the design development documentation and specifications issued for construction.

It is noted that aspects of the design are proposed to be addressed by way of a performance solution to meet the relevant performance requirements of the BCA however, will be dealt with as part of the approval process through the appointed project's fire engineers ARUP.

Appendix A – Referenced Documentation

The following documentation issued by Genton were used in the preparation of this report:

DRAWING NO.	DRAWING TITLE	REVISION NO.	REVISION DATE
000 - General			
DA000	Cover Page	3	01/04/20
DA001	Drawing List	3	01/04/20
050 - Site			
DA050	Locality and Context Plan	3	01/04/20
DA051	Future Locality and Context Plan	3	01/04/20
DA052	Site Analysis Plan	3	01/04/20
DA060	Existing Site Plan	3	01/04/20
DA061	Site Demolition Plan	4	01/04/20
DA062	Proposed Site Master Plan	3	01/04/20
DA070	Excavation Plan	1	01/04/20
100 - GA Plans			
DA100	Lower Ground Level Floor Plan	8	21/04/20
DA101	Ground Floor 0 Floor Plan	5	01/04/20
DA102	Ground Level Mezzanine 1 Floor Plan	5	01/04/20
DA103	Ground Level Mezzanine 2 Floor Plan	5	01/04/20
DA110	Level 1 Floor Plan	5	01/04/20
DA111	Level 1.1 Floor Plan	5	01/04/20
DA112	Level 1.2 Floor Plan	5	01/04/20
DA120	Level 2 Floor Plan	5	01/04/20
DA121	Level 2.1 Floor Plan	5	01/04/20
DA122	Level 2.2 Floor Plan	5	01/04/20
DA130	Level 3 Floor Plan	5	01/04/20
DA131	Level 3.1 Floor Plan	5	01/04/20
DA132	Level 3.2 Floor Plan	5	01/04/20
DA140	Level 4 Floor Plan	5	01/04/20
DA141	Level 4.1 Floor Plan	4	01/04/20
DA150	Level 5 Floor Plan	5	01/04/20
DA160	Level 6 Floor Plan	5	01/04/20
DA161	Level 6.1 Floor Plan	5	01/04/20
200 - GA Elevations			
DA200	External Elevation South	4	01/04/20
DA201	External Elevation East	4	01/04/20
DA202	External Elevation North	4	01/04/20
DA203	External Elevation West	4	01/04/20
250 - GA Sections			
DA250	Section A	4	01/04/20
DA251	Section B	5	01/04/20
DA252	Section C	4	01/04/20
300 - Materials			
DA300	Materials and Finishes	3	01/04/20
400 - Shadow Diagrams			
DA400	Shadow Diagrams	3	01/04/20
500 - Area Calculations			
DA500	GFA Diagrams and Schedule	3	01/04/20
DA501	GFA Diagrams and Schedule	1	01/04/20
DA502	GFA Diagrams and Schedule	1	01/04/20
DA503	GFA Diagrams and Schedule	1	01/04/20
DA504	GFA Schedule Summary	3	01/04/20

Appendix B – Schedule of proposed statutory Fire Safety Measures

Measure	Standard of Performance
Access panels, doors and hoppers to fire resisting shafts	BCA2019 Clause C3.13 and tested prototypes (AS 1530.4 – 2014 and AS 4072.1-2005)
Automatic fail safe devices	Scheduled devices release upon trip of smoke detection and/or sprinkler activation in accordance with BCA2019 Clauses D2.19 and D2.21.
Automatic fire detection and alarm system (within atriums)	BCA2019 Specification G3.8 and AS 1670.1 – 2018
Automatic fire detection and alarm system (smoke detection system to operate stair pressurisation system, automatic shutdown of the air-handling system and to activate the smoke exhaust system)	BCA2019 Clause 6 of Specification E2.2a and AS1670.1-2018
Automatic fire suppression systems (Sprinklers)	BCA2019 Specification E1.5, AS 2118.1 – 2017 and AS2118.6-2012 (for a combined system)
Emergency lifts	BCA2019 Clause E3.2, E3.4, E3.6, & E3.7
Emergency lighting	BCA2019 Clause E4.2, E4.4 and AS 2293.1 – 2005
Emergency Warning And Intercommunication System	BCA2019 Clause E4.9, Specification G3.8 and AS 1670.4 – 2018
Exit signs	BCA2019 Clause E4.5, NSW E4.6, E4.8 and AS 2293.1 – 2005
Fire Alarm Monitoring system	BCA2019 Clause 8 of Specification E2.2a and AS1670.3-2018
Fire Control Room	BCA2019 Specification E1.8
Fire dampers	BCA2019 Clause C3.15 and AS/NZS 1668.1 – 2015 (AS 1682.1-1990 and AS 1682.2-1990)
Fire doors	BCA2019 Clause C2.12, C2.13, C3.2, C3.4, C3.8, C3.10, AS 1905.1 – 2015 and manufacturer's specification
Fire hydrants systems	BCA2019 Clause E1.3 and AS 2419.1 – 2005
Fire seals protecting opening in fire resisting components of the building	BCA2019 Clause C3.15, Specification C3.15 and AS 1530.4 –2014 and AS 4072.1 – 2005 and installed in accordance with the tested prototype.
Hose reel system	BCA2019 Clause E1.4 and AS 2441 – 2005
Lightweight Construction	BCA2019 Clause C1.8 & AS 1530.3 – 1999 and manufacturer's specification
Mechanical air handling system *(automatic shutdown of air-handling system)*	BCA2019 Clause E2.2 and AS/NZ 1668.1-2015
Mechanical air handling system *(automatic air pressurisation system)*	BCA2019 Table E2.2a and Specification G3.8 and AS/NZ 1668.1-2015
Mechanical air handling system *(automatic smoke exhaust system)*	BCA2019 NSW Table E2.2b, Spec. G3.8 & Spec. E2.2b
Portable fire extinguishers	BCA2019 Clause E1.6 and AS 2444 – 2001
Stand-by power systems	BCA2019 Clause 6 of Specification G3.8
Wall-Wetting Sprinklers (TBC)	BCA2019 Clause C3.4 & AS 2118.2 – 1995
Warning and operational signs	BCA2019 Clauses C3.6, D2.23, D3.6 & E3.3
Performance Solution by ARUP	Additional measures will be specified within the Fire Engineering Report which will need to be included as part of the relevant approval

Appendix C – Fire-resistance levels

The below table contain the fire-resistance levels (FRL) required under Specification C1.1 of the BCA. Class 9b FRL's are required for the development

Type A Construction: FRL of Building Elements				
Building element	**Class of building - FRL:** (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 9 or 7a	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is-				
For loadbearing parts-				
less than 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 TO LESS THAN 3 M	90/60/60	120/ 90/ 90	180/180/120	240/240/180
3 OR MORE	90/60/30	120/ 60/ 30	180/120/90	240/180/ 90
For non-loadbearing parts-				
less than 1.5 m	-/90/90	- /120/120	- /180/180	- /240/240
1.5 TO LESS THAN 3 M	-/60/60	- / 90/ 90	- /180/120	- /240/180
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an external wall-				
For loadbearing columns	90/ - / -	120/ - / -	180/ - / -	240/ - / -
For non-loadbearing columns	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS and FIRE WALLS	90/90/90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS-				
Fire-resisting lift and stair shafts-				
Loadbearing	90/90/90	120/120/120	180/120/120	240/120/120
Non-loadbearing	- /90/90	- /120/120	- /120/120	- /120/120
Bounding public corridors, public lobbies and the like-				
Loadbearing	90/90/90	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- /60/60	- / - / -	- / - / -	- / - / -
Between or bounding sole-occupancy units-				
Loadbearing	90/90/90	120/ - / -	180/ - / -	240/ - / -
Non-loadbearing	- /60/60	- / - / -	- / - / -	- / - / -
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of Combustion-				
Loadbearing	90/90/90	120/ 90/ 90	180/120/120	240/120/120
Non-loadbearing	- /90/90	- / 90/ 90	- /120/120	- /120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES AND COLUMNS	90/ - / -	120/ - / -	180/ - / -	240/ - / -
FLOORS	90/90/90	120/120/120	180/180/180	240/240/240
ROOFS	90/60/30	120/ 60/ 30	180/60/30	240/ 90/ 60