SYDNEY METRO

BUILDING CODE OF AUSTRALIA 2019
STATE SIGNIFICANT DEVELOPMENT, DEVELOPMENT APPLICATION
(SSD DA)

PITT STREET SOUTH METRO OVER STATION DEVELOPMENT

Report prepared for:	Pitt Street Developer South Pty Ltd
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Contents

DOCUMENT ACCEPTANCE

	Name	Signed	Date
Verified by	Peter Murphy		18/05/2020

REVISION HISTORY

Revision No.	Prepared by	Description	Date
R01	Peter Murphy	BCA Capability Statement for review and comment	06/12/2019
R02	Peter Murphy	Revised BCA Capability Statement based on updated documentation	17/01/2020
R03	Peter Murphy	Revised BCA Capability Statement based on updated documentation	17/02/2020
Revision B	Peter Murphy	Submission to Metro for Landowner's Consent	02/04/2020
Revision C	Peter Murphy	Issue for SSD DA	18/05/2020

1.0 Introduction and Documentation

This report has been prepared to accompany a detailed State Significant Development (SSD) development application (DA) for a residential Over Station Development (OSD) above the new Sydney Metro Pitt Street South Station. The detailed SSD DA is consistent with the Concept Approval (SSD 17_8876) granted for the maximum building envelope on the site, as proposed to be modified.

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment. This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 28 October 2019.

The detailed SSD DA seeks development consent for the construction and operation of

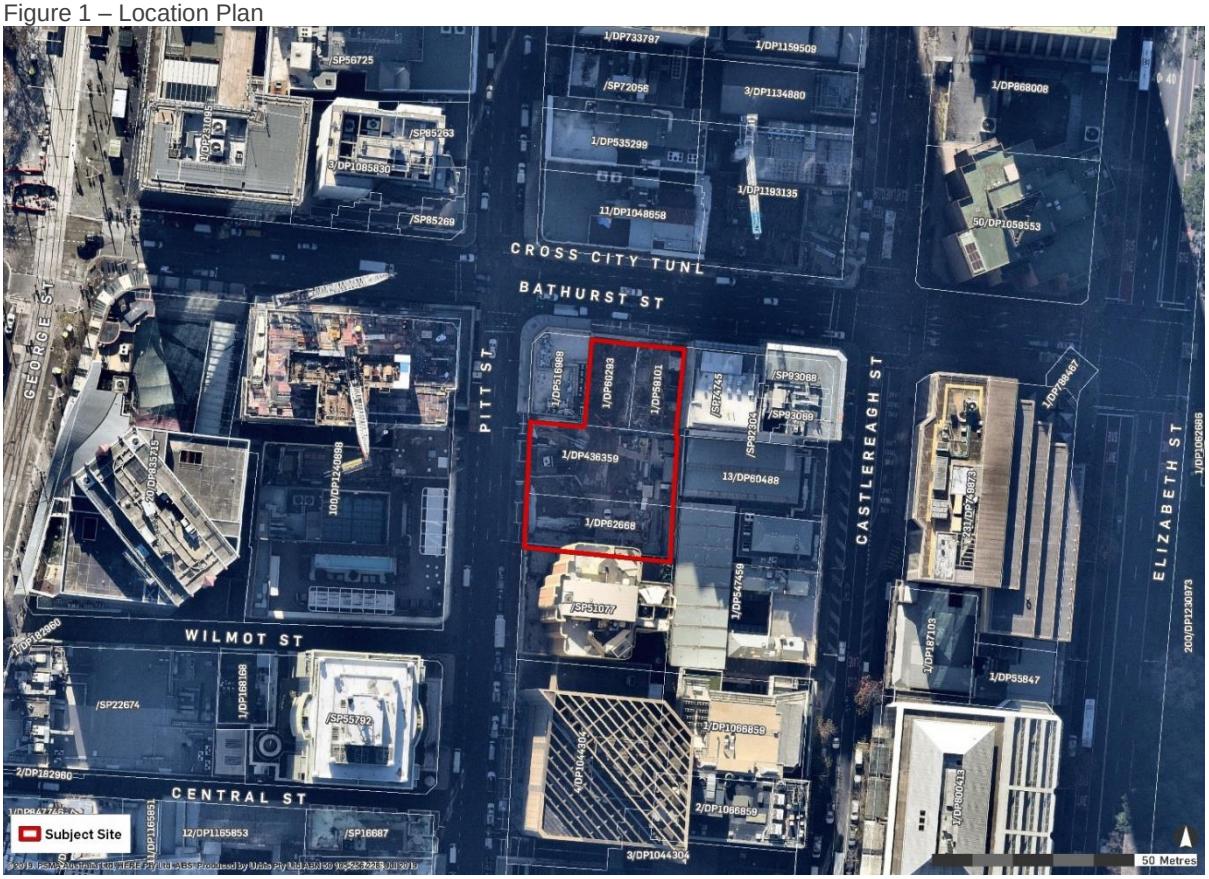
- New residential tower with a maximum building height of RL 171.6, including residential accommodation and podium retail premises, excluding station floor space
- Use of spaces within the CSSI 'metro box' building envelope for the purposes of:
  - *Retail tenancies;*
  - Residential communal facilities, residential storage, bicycle parking, and operational back of house uses
  - Shared vehicle loading and service facilities on the ground floor
  - Landscaping
  - *Utilities and services provision.*
  - *Stratum subdivision (Station/OSD).*
- *Integration with the approved CSSI proposal including though not limited to:*
  - *Structures, mechanical and electronic systems, and services; and*
  - *Vertical transfers;*

The Site

The site is located within the Sydney CBD, on the corner of Bathurst Street and Pitt Street. It has two separate street frontages, Pitt Street to the west and Bathurst Street to the north. The area surrounding the site consists of predominantly residential high-density buildings and some commercial buildings, with finer grain and heritage buildings dispersed throughout.

The site has an approximate area of 1,710sqm and is now known as Lot 10 in DP 1255507. The street address is 125 Bathurst Street, Sydney.

Figure 1 – Location Plan



Sydney Metro Description

Sydney Metro is Australia's biggest public transport program. A new standalone railway, this 21st century network will revolutionise the way Sydney travels.

There are four core components:

- **Sydney Metro Northwest (formerly the 36km North West Rail Link)**

This project is now complete and passenger services commenced in May 2019 between Rouse Hill and Chatswood, with a metro train every four minutes in the peak. The project was delivered on time and $1 billion under budget.

- **Sydney Metro City & Southwest**

Sydney Metro City & Southwest project includes a new 30km metro line extending metro rail from the end of Metro Northwest at Chatswood, under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.

Sydney Metro City & Southwest will deliver new metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new underground metro platforms at Central Station. In addition it will upgrade and convert all 11 stations between Sydenham and Bankstown to metro standards.
In 2024, customers will benefit from a new fully-air conditioned Sydney Metro train every four minutes in the peak in each direction with lifts, level platforms and platform screen doors for safety, accessibility and increased security.

- **Sydney Metro West**

Sydney Metro West is a new underground railway connecting Greater Parramatta and the Sydney CBD. This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between these two areas, linking new communities to rail services and supporting employment growth and housing supply between the two CBDs.
The locations of seven proposed metro stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays.

The NSW Government is assessing an optional station at Pyrmont and further planning is underway to determine the location of a new metro station in the Sydney CBD.

- **Sydney Metro Greater West**

Metro rail will also service Greater Western Sydney and the new Western Sydney International (Nancy Bird Walton) Airport. The new railway line will become the transport spine for the Western Parkland City's growth for generations to come, connecting communities and travellers with the rest of Sydney's public transport system with a fast, safe and easy metro service. The Australian and NSW governments are equal partners in the delivery of this new railway

The Sydney Metro Project is illustrated in the figure below.

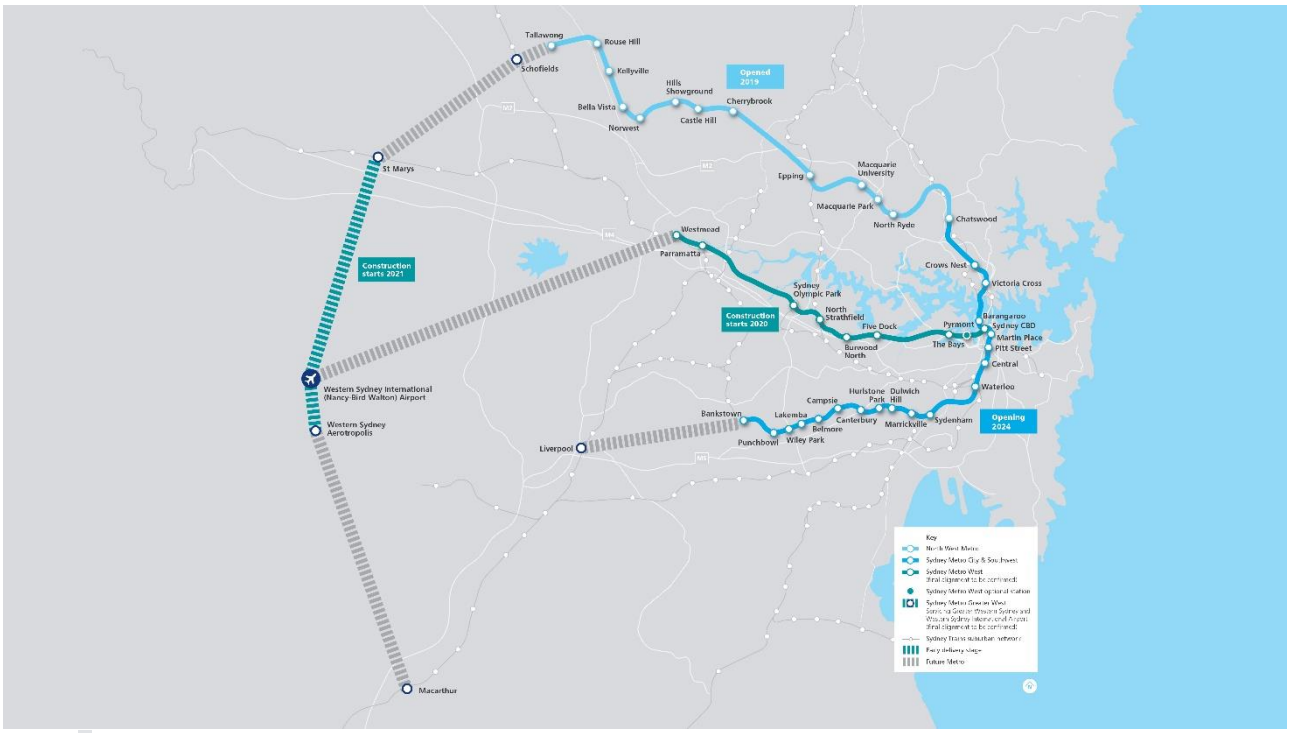


Figure 2 – Sydney Metro Alignment Map, *Source: Sydney Metro*

Services commenced in 2019 in the city's north west with a train every four minutes in the peak. Sydney Metro will be extended into the CBD and beyond to Bankstown in 2024. There will be new metro railway stations underground at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new metro platforms under Central.

On 9 January 2017, the Minister for Planning approved the Sydney Metro City & Southwest - Chatswood to Sydenham project as a Critical State Significant Infrastructure project (reference SSI 15_7400) (CSSI Approval). The terms of the CSSI Approval includes all works required to construct the Sydney Metro Pitt Street Station, including the demolition of existing buildings and structures on both sites (North and South). The CSSI Approval also includes construction of below and above ground works within the metro station structure for appropriate integration with Over Station Developments.

The CSSI Approval included Indicative Interface Drawings for the below and above ground works at Pitt Street South Metro Station site. The delineation between the approved Sydney Metro works, generally described as within the "metro box", and the Over Station Development (OSD) elements are illustrated below. The delineation line between the CSSI Approved works and the OSD envelope is generally described below or above the transfer slab level respectively.

Figure 3 – Pitt Street Station (North-South Section)

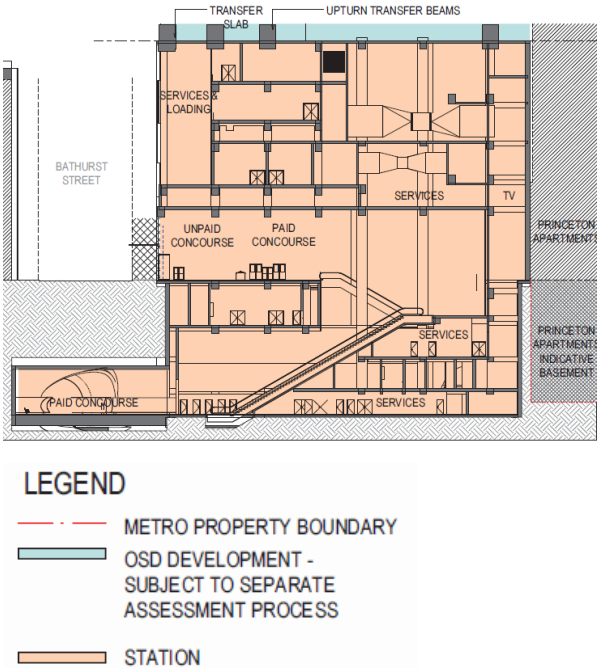
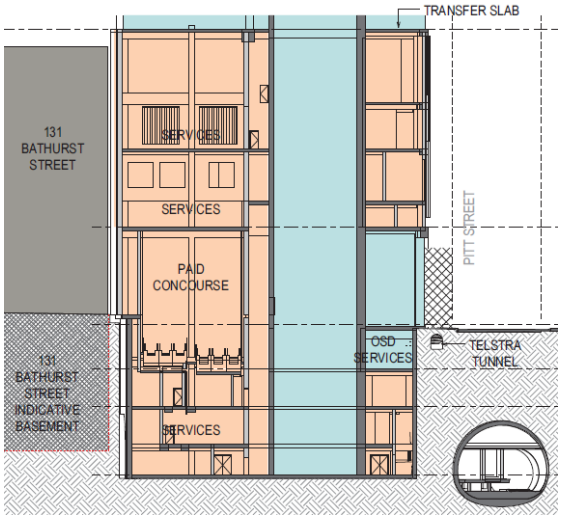


Figure 4 – Pitt Street Station (East-West Section)



Source: CSSI Preferred Infrastructure Report (TfNSW)

The Preferred Infrastructure Report (PIR) noted that the integration of the OSD elements and the metro station elements would be subject to the design resolution process, noting that the detailed design of the "metro box" may vary from the concept design assessed within the planning approval.
As such in summary:

- The CSSI Approval provides consent for the construction of all structures within the approved "metro box" envelope for Pitt Street South.
- The CSSI Approval provides consent for the fit out and use of all areas within the approved "metro box" envelope that relate to the ongoing use and operation of the Sydney Metro.
- The CSSI Approval provides consent for the embellishment of the public domain, and the architectural design of the "metro box" envelope as it relates to the approved Sydney Metro and the approved Pitt Street South Station Design & Precinct Plan.
- Separate development consent however is required to be issued by the NSW DPIE for the use and fit-out of space within the "metro box" envelope for areas related to the OSD, and notably the construction and use of the OSD itself.

As per the requirements of clause 7.20 of the *Sydney Local Environmental Plan 2012*, as the OSD exceeds a height of 55 metres above ground level (among other triggers), development consent is first required to be issued in a Concept (formerly known as Stage 1) DA. This is described below.

Pitt Street South Over Station Development (OSD)

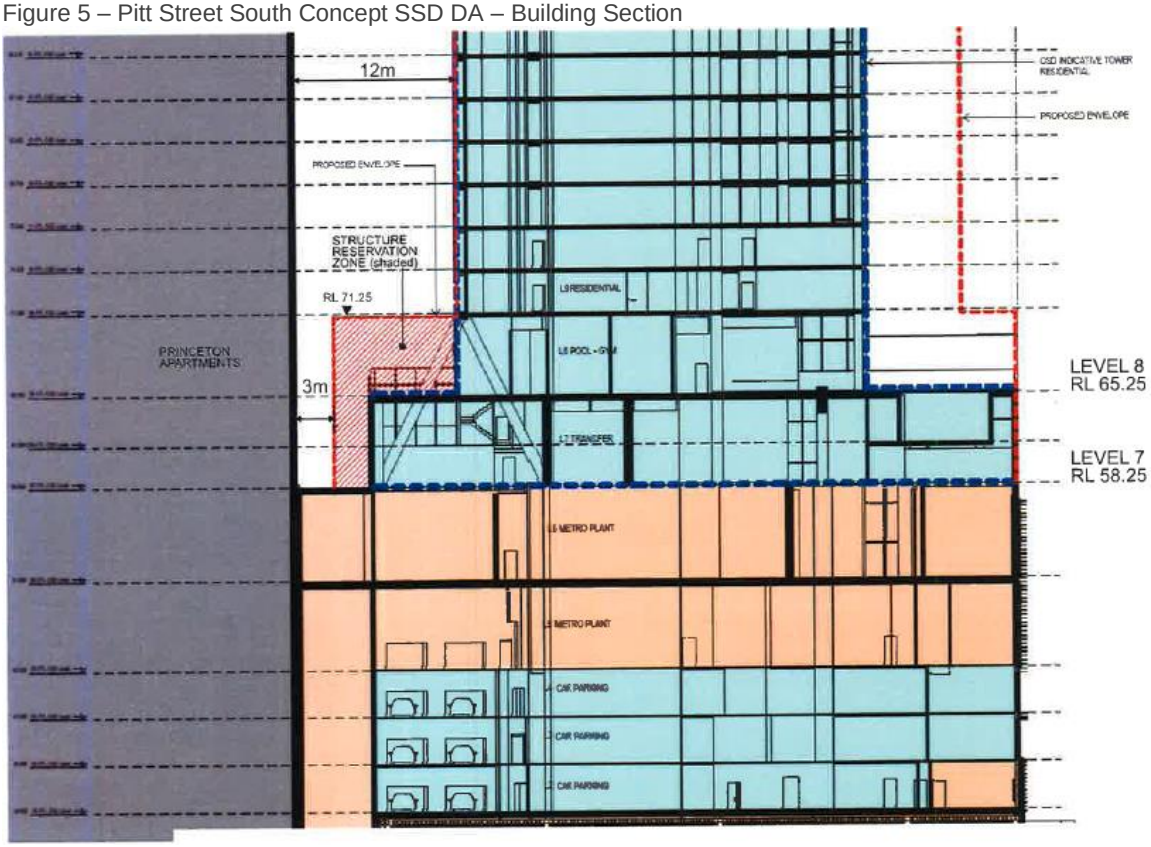
Development consent was granted on 25 June 2019 for the Concept Development Application (SSD 8876) for Pitt Street South OSD including:

- A maximum building envelope, including street wall and setbacks for the over station development.
- A maximum building height of RL171.6.
- Podium level car parking for a maximum of 34 parking spaces.
- Conceptual land use for either one of a residential or commercial scheme (not both). NO maximum Gross Floor Area was approved as part of SSD 8876.

The building envelope approved within the Concept SSD DA provides a numeric delineation between the CSSI Approval "metro box" envelope and the OSD building envelope. As illustrated in the figures below, the delineation line between the two projects is defined at RL 58.25 (Level 7).

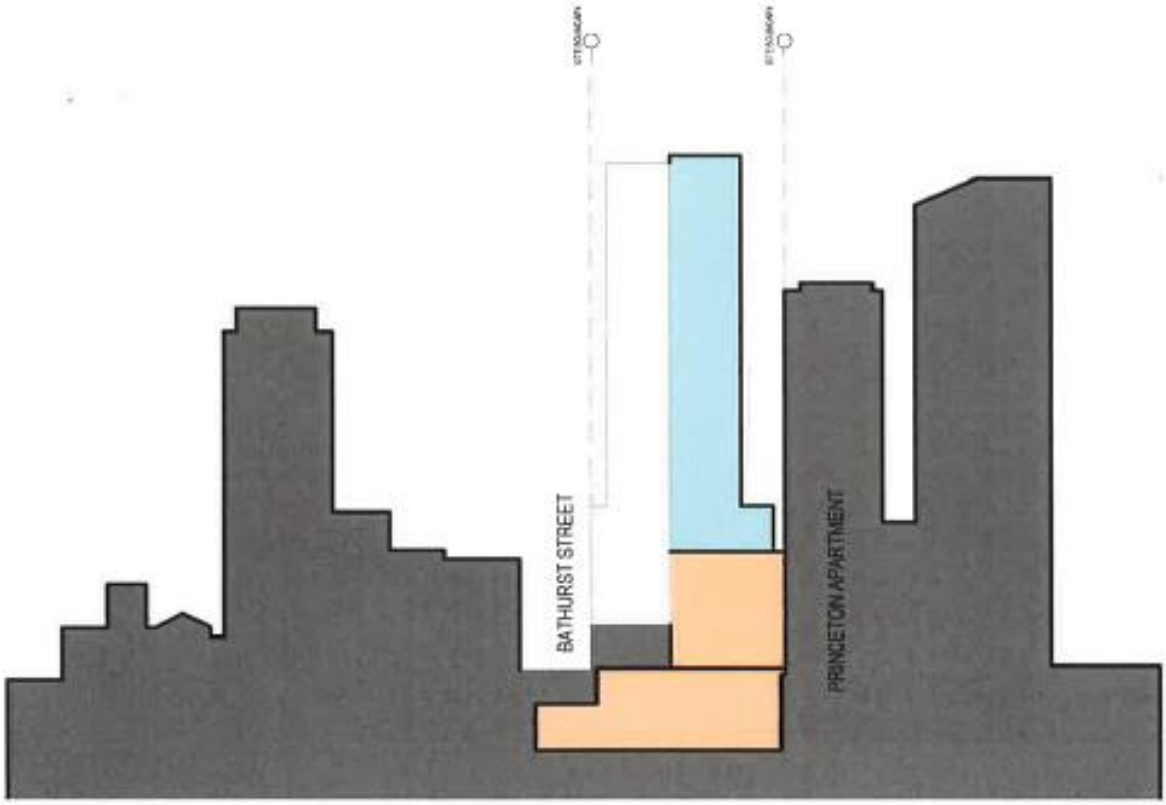
For the purposes of the Detailed (Stage 2) SSD DA, it is noted that while there are two separate planning applications that apply to the site (CCSI and SSD DA), this report addresses the full development across the site to provide contextual assessment.

Figure 5 – Pitt Street South Concept SSD DA – Building Section



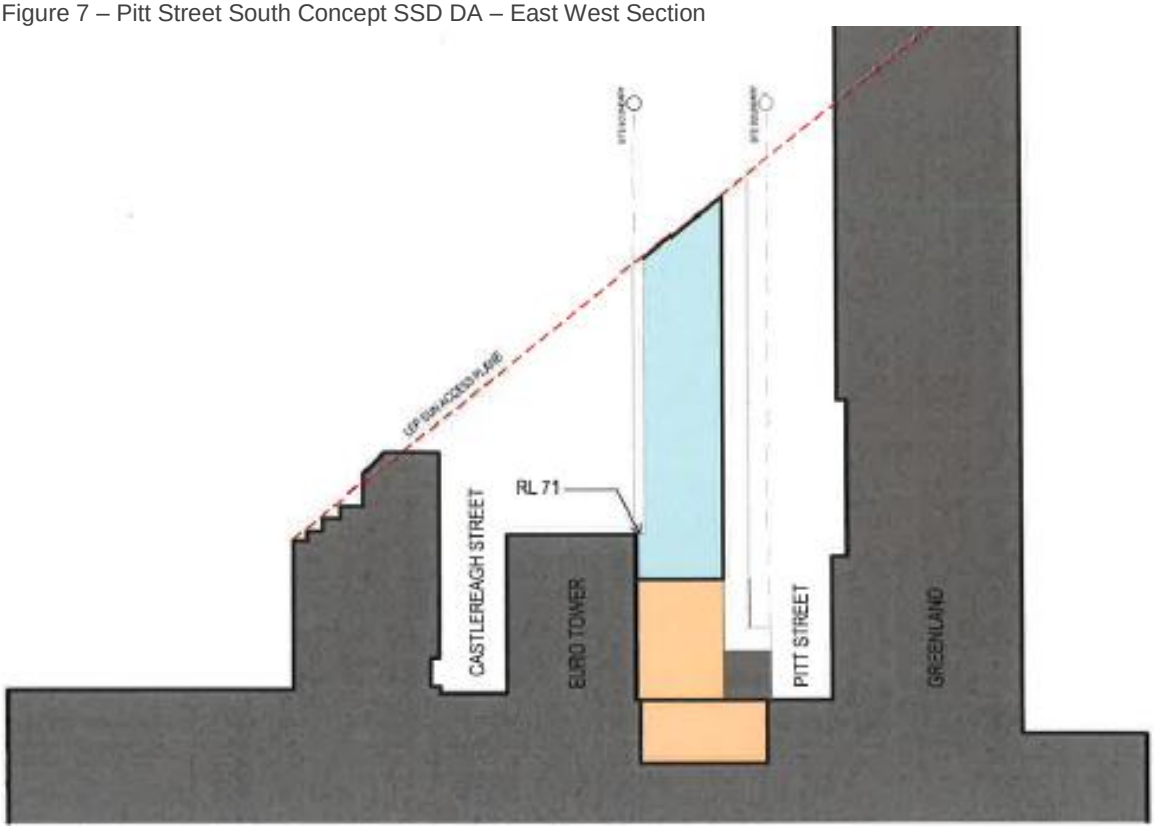
Source: SSD 8876 Concept Stamped Plans

Figure 6 – Pitt Street South Concept SSD DA – North South Section



Source: SSD 8876 Concept Stamped Plans

Figure 7 – Pitt Street South Concept SSD DA – East West Section



Source: SSD 8876 Concept Stamped Plans

The design has been reviewed against the deemed to satisfy provisions of the Building Code of Australia and we offer the following comments within the body of the report. This report covers the main issues under Parts B, C, D, E, F, G, H and J of the Building Code of Australia. Any reference to BCA throughout this report infers BCA 2019. As the design develops and is resolved further regulatory reviews will be undertaken to ensure compliance is achieved.

This report does not assess the impact of the Disability Discrimination Act (DDA) which is outside the scope of the BCA nor does it include compliance with Part D3 of the BCA. Refer to Philip Chun Access Consulting report numbered SMCSWSPS-PCH-OSS-PL-REP-000002 to address Part D3, DDA and any relevant conditions as they relate to accessibility.

This report is for the exclusive use of the client and cannot be used for any other purpose without prior permission from Philip Chun & Associates Pty Ltd. The report is valid only in its entire form. "Philip Chun and Associates accepts no responsibility for any loss suffered as a result of any reliance upon such assessment or report other than as being accurate at the date the documentation was reviewed for the purposes of the assessment or report."

Documentation available:
The preliminary SSDA drawings are those issued by Bates Smart:

Drawing No. (Revision)	Titled	Dated
SMCSWSPS-BAT-OSS-AT-DWG-900000-C	COVER SHEET	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-910041-C	SITE PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930041-C	L00 GROUND LEVEL - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930141-C	L01 - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930241-D	L02 - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930341-C	L03 - GENERAL ARRANGMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930441-C	L04 - GENERAL ARRANGMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930541-C	L05 - GENERAL ARRANGMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930641-C	L06 - GENERAL ARRANGMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930642-C	L06 MEZZANINE - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930741-D	L07 - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930841-D	L08 - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-930941-C	L09-13 - TYPICAL LOWRISE GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-931441-C	L14-34 - TYPICAL HIGHRISE GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-933541-C	L35 - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-933641-C	L36 - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-933741-C	L37 PLANT - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-	L38 PLANT - GENERAL ARRANEGMENT PLAN	31/03/2020

Drawing No. (Revision)	Titled	Dated
933841-C		
SMCSWSPS-BAT-OSS-AT-DWG-933941-C	L39 ROOF - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-939542-C	B01 MEZZANINE - GENERAL ARRANGEMENT PLAN	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-950141-C	SECTION A-A	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-950241-C	SECTION B-B	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-960001-D	NORTH ELEVATION - BATHURST STREET	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-960002-D	WEST ELEVATION - PITT STREET	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-960003-C	SOUTH ELEVATION	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-960004-D	EAST ELEVATION	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-960005-C	BATHURST STREET - STREETSCAPE ELEVATION	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-960006-C	PITT STREET - STREETSCAPE ELEVATION	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-970041-D	GFA AND LAND USE PLANS - PODIUM LEVELS	31/03/2020
SMCSWSPS-BAT-OSS-AT-DWG-970141-D	GFA AND LAND USE PLANS - TOWER LEVELS	31/03/2020

2.0 Building Code of Australia 2019 Comments

Summary of BCA Parameters

Building Classification(s)	Basement 01 Mezzanine	OSD pump room and Plant Space – Ancillary to Class 2
	Ground level	Loading dock – Class 7b Entry lobby – Ancillary to Class 2
	Level 1	Plant space – Ancillary to Class 2 Substation – Class 8
	Level 2	Restaurant – Class 6 Residential Facilities – Ancillary to Class 2
	Level 3	Storage – Class 7b
	Level 4	Plant space – Ancillary to Class 2
	Level 5	Plant space – Ancillary to Class 2
	Level 6	Residential Facilities – Ancillary to Class 2
	Level 7-34	Residential SOU's – Class 2
	Level 35	Residential SOU's – Class 2 Residential Facilities – Ancillary to Class 2
	Level 36	Residential SOU's – Class 2
	Level 37-38	Plant space – Ancillary to Class 2
Overall Levels Contained	40 – Level B1 Mezzanine to L38 Plant	
Rise in Storeys	38 – As calculated in accordance with C1.2 of the BCA	
Type of Construction	Type A Construction	
Effective Height (m)	131.7m	

The following information and documentation is required prior to the issue a Construction Certificate.

2.1 Section B – Structure

1. **Structural Provisions** – The building will have a rise in storey of 38 and is therefore required to be of not less than Type A construction. The building needs to comply with the requirements BCA B1.2 & Specification B1.2.

   Structural engineer to design the building to withstand individual actions in accordance with the following Standards; AS1170.1, AS1170.2 and AS1170.4.

   The structural engineer will need to ensure the structural requirements of BCA clause B1.1, B1.2 B1.4 is considered in the design stage. The importance level of the building is to be determined in accordance with Table B1.2a of the BCA.
   Compliance readily achievable.

2.2 Section C – Fire Resistance / Compartmentation / Separation

1. **Type of Construction** – The building will have a rise in storey of 38 and is therefore required to be of not less than Type A construction. The building needs to comply with BCA Table 3 for Type A Construction (See appendix A). Structural engineer will need to confirm at CC stage the FRL's of the columns slabs and load bearing walls in accordance with Table 3 of Spec C1.1 i.e. -

   Class 2 – 90 mins
   Class 6 – 180 mins
   Class 7b / 8 – 240 mins
   Compliance readily achievable.

2. **Fire Compartmentation** – The fire compartmentation of the Class 2 (Residential) building components are based on a floor by floor separation which is deemed compliant as no floor area limitations under Table C2.2 is applicable to Class 2 building parts.

   The fire compartmentation of the Class 6 and 7 building components are required to meet C2.2 of the BCA which requires a maximum floor area of 5000m² and 30,000m³ for class 6 and 7 areas.
   Compliance readily achievable.

3. **Lightweight construction** (C1.8) –
   (a) Lightweight construction must comply with Specification C1.8 if it is used in a wall system—
      (i) that is required to have an FRL; or
      (ii) for a lift shaft, stair shaft or service shaft or an external wall bounding a public corridor including a non fire-isolated passageway or non fire-isolated ramp, in a spectator stand, sports stadium, cinema or theatre, railway station, bus station or airport terminal.
   (b) If lightweight construction is used for the fire-resisting covering of a steel column or the like, and if—
      (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and
      (ii) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.
   Compliance readily achievable.

4. **Non-Combustible materials** (C1.9) –
   (a) In a building required to be of Type A or B construction, the following building elements and their components must be non-combustible:
      (i) **External walls** and **common walls**, including all components incorporated in them including the facade covering, framing and insulation.
      (ii) The flooring and floor framing of lift pits.
      (iii) Non-loadbearing internal walls where they are required to be fire-resisting.
   (b) A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in—
      (i) a building required to be of Type A construction; and
      (ii) a building required to be of Type B construction, subject to C2.10, in—
         (A) a Class 2, 3 or 9 building; and
         (B) a Class 5, 6, 7 or 8 building if the shaft connects more than 2 storeys.
   (c) A loadbearing internal wall and a loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1.
   (d) The requirements of (a) and (b) do not apply to the following:
      (i) Gaskets.
      (ii) Caulking.
      (iii) Sealants.
      (iv) Termite management systems.
      (v) Glass, including laminated glass.
      (vi) Thermal breaks associated with glazing systems.

(vii) Damp-proof courses.

(e) The following materials may be used wherever a non-combustible material is required:

(i) Plasterboard.

(ii) Perforated gypsum lath with a normal paper finish.

(iii) Fibrous-plaster sheet.

(iv) Fibre-reinforced cement sheeting.

(v) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.

(vi) Sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5.

(vii) Bonded laminated materials where—

(A) each lamina, including any core, is non-combustible; and

(B) each adhesive layer does not exceed 1 mm in thickness and the total thickness of the adhesive layers does not exceed 2 mm; and

(C) the Spread-of-Flame Index and the Smoke-Developed Index of the bonded laminated material as a whole do not exceed 0 and 3 respectively.

Compliance readily achievable.

5. **Fire Hazard Properties** (C1.10) – All new surface finishes, assemblies and linings are to comply with BCA Clause C1.10 (Specification C1.10) with regard to Fire Hazard Properties.
Compliance readily achievable.

6. **Ancillary Elements** (C1.14) **–** An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following;
   - An ancillary element that is non-combustible.
   - A gutter, downpipe or other plumbing fixture or fitting.
   - A flashing.
   - A grate or grille not more than 2m² in area associated with building service.
   - An electrical switch, socket-outlet, cover plate or the like.
   - A light fitting.
   - A required sign etc.

   Compliance readily achievable.

7. **Spandrels** (C2.6) – not applicable to a sprinkler protected building.

8. **Separation of classifications in the same storey** (C2.8) – If a building has parts of different classifications located alongside one another in the same storey—
   (a) each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or
   (b) the parts must be separated in that storey by a fire wall having—
   (i) the higher FRL prescribed in Table 3 of Spec C1.1.

   Compliance readily achievable.

9. **Separation of classifications in different storeys** (C2.9) **–** The floor between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 Table 3 Type A Construction for the classification of the lower storey.
Compliance readily achievable.

10. **Separation of lift shafts –** (C2.10) Any lift connecting more than 2 storeys, or more than 3 storeys if the building is sprinklered must be separated from the remainder of the building by enclosure in a shaft which, in a building required to be of Type A construction is to be separated from the rest of the building as per Table 3 of Spec C1.1.
Compliance readily achievable.

11. **Separation of equipment** (C2.12) **–** Essential / emergency equipment including lift motor rooms, switch rooms, emergency generators, central smoke control plant, boilers or batteries are to be separated by fire rated construction with a fire resistance level as required by Specification C1.1 but not less than 120/120/120.
    Compliance readily achievable.

12. **Electricity supply system** (C2.13) **–** Where emergency equipment is required in a building, all switchboards in the electrical distribution system, which sustain the electricity supply to the emergency equipment, must provide full segregation by way of enclosed metal partitions designed to prevent the spread of any fault from non-emergency equipment switchgear to the emergency equipment switchgear.
    Compliance readily achievable.

13. **Public corridors in Class 2 and 3 buildings** (C2.14) **–** In a Class 2 or 3 building, a public corridor, if more than 40m in length, must be divided at intervals of not more than 40 m with smoke-proof walls complying with Clause 2 of Specification C2.5.
    Compliance readily achievable.

14. **Protection of openings in external walls** (C3.2) – Any openings in an external wall required to have an FRL must be protected in accordance with BCA C3.4 and if used, wall-wetting sprinklers are to be externally fitted.
    Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

15. **Doorways in fire walls** (C3.5) – to be fire rated with an FRL of not less than that required by Specification C1.1 for the fire wall except that each door must have an insulation level of at least 30mins.
16. ***Compliance readily achievable.***

    Openings in fire isolated exits (C3.8) **–** Any doors opening into a fire isolated passageway, stair or ramp must be a fire door with an FRL of not less than -/60/30 that are self closing **or** an automatic closing door activated by smoke detector or other detector suitable in accordance with AS 1670 or any other required suitable fire alarm system, including a sprinkler system complying with Spec E1.5.
    Compliance readily achievable.

17. **Service penetrations in fire isolated exits** (C3.9) **–** All fire isolated exits must not be penetrated by any services other than – electrical wiring permitted by Clause D2.7 of the BCA, water pipes for fire services or ducting associated with a stair pressurization system.
    Compliance readily achievable.

18. **Openings in fire isolated lift shafts** (C3.10) **–** Entrance doorways in lift shafts required to be fire isolated must be constructed with an FRL of not less than -/60/- and must comply with AS1735.11, and to remain close when not in use.
    Compliance readily achievable.

19. **Openings in floors and ceilings for services** (C3.12) –
    (a) Where a service passes through—
        (i) a floor that is required to have an FRL with respect to integrity and insulation; or
        (ii) a ceiling required to have a resistance to the incipient spread of fire, the service must be installed in accordance with (b)
    (b) A service must be protected—
        (i) in a building of Type A construction, by a shaft complying with Specification C1.1; or
        (ii) in a building of Type B or C construction, by a shaft that will not reduce the fire performance of the building elements it penetrates; or
        (iii) in accordance with C3.15.

(c) Where a service passes through a floor which is required to be protected by a fire-protective covering, the penetration must not reduce the fire performance of the covering.
Compliance readily achievable.

20. **Openings in shafts** (C3.13) **–** In a building required to be of Type A construction, any opening in a wall providing access to ventilating, pipe, garbage or other services shafts must be protected by - an access panel having an FRL of not less than –/60/30 **or** a self-closing –/60/30 fire door or hopper.
Compliance readily achievable.

21. **Openings for service installations** (C3.15) - Electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrations that are required to have an FRL with respect to integrity or insulation or a resistance to the incipient spread of fire, must be fire sealed, fire rated or otherwise comply with listed standards.
Compliance readily achievable.

2.3 Section D – Access and Egress

1. Access and Egress – Residential Apartments (Class 2)

- Not less than 2 exits must be provided to any below ground levels as well as any storey where a building has an effective height greater than 25m (D1.2)
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- The entrance doorway of any sole-occupancy unit must be not more than 6m from an exit or from a point from which travel in different directions to 2 exits is available or 20m from a single exit serving the storey at the level of egress to a road or open space (D1.4)
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- Exits that are required as alternative means of egress must be located so that alternative paths of travel do not converge such that they become less than 6m apart or more than 45 apart. The exit paths shall be not less than 9m apart as per D1.5. The discharge point of alternative exits must be located as far apart as practical (D1.10)
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- Widths of exits and corridors must be sufficient to provide safe passage for occupant egress. The unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1m (D1.6)
  Compliance readily achievable.

- A doorway must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from a public corridor, public lobby or the like, a soul occupancy unit occupying the entire storey or a sanitary compartment or air lock (D1.7).
- ***Compliance readily achievable.***

- Each fire-isolated stair must provide independent egress from each storey served and discharge directly by way of its own fire isolated passageway to a road or open space **OR** to a point in a storey or space within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter **OR** into a covered area that adjoins a road or open space, is open for at least 1/3 of its perimeter and has an unobstructed clear height throughout including the perimeter openings of not less that 3m and provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6m (D1.7).
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- If a stairway serving as an exit is required to be fire-isolated there must be no direct connection between a flight rising from a storey below the lowest level of access to a road or open space and a flight descending from a storey above that level***.***
  Compliance readily achievable.

- Doors to the required exits must open in the direction of egress (D2.20)
  Compliance readily achievable.

- The construction and discharge of stairs, landings, thresholds, balustrades and handrails must meet the requirements of the BCA
  Compliance readily achievable.

- An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it (D1.10)

Compliance readily achievable.

- Due to exceeding 25m in effective height doors of a fire isolated exit must not be locked from the inside throughout the fire stair unless the doors are fitted with a fail safe device that auto unlocks the doors on fire trip and on at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available or otherwise an intercom system operated from within the enclosure is to be provided near the doors (D2.22).
  Compliance readily achievable.

- Signage should be provided to the fire doors leading to the fire-isolated exits. The signage should be in accordance with Clause D2.23 & D3.6 of the BCA.
  Compliance readily achievable.

- Fall protection needed to unit bedroom windows located less than 1.7m high required in accordance with Clause D2.24.
  Compliance readily achievable.

2. **Access and Egress – Retail, Plant and Communal Areas (Class 2 non-residential & Class 6 and Class 7b)**

- Not less than 2 exits must be provided to any below ground levels as well as any storey where a building has an effective height greater than 25m (D1.2)
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- The maximum distance of travel to an exit is 40m where two exits are available with a point of choice at 20m from the point of origin (D1.4)
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- The distance between alternative exits is not to exceed 60m (D1.5)
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- Paths of travel must not converge closer than 6m (D1.5)
  Compliance readily achievable.

- A doorway must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from a public corridor, public lobby or the like, a soul occupancy unit occupying the entire storey or a sanitary compartment or air lock (D1.7).
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

  Each fire-isolated stair must provide independent egress from each storey served and discharge directly by way of its own fire isolated passageway to a road or open space **OR** to a point in a storey or space within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter **OR** into a covered area that adjoins a road or open space, is open for at least 1/3 of its perimeter and has an unobstructed clear height throughout including the perimeter openings of not less that 3m and provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6m (D1.7).
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- Widths of exits and corridors must be sufficient to provide safe passage for occupant egress (D1.6)
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it (D1.10).
  Compliance readily achievable.

- Doors to swing in the direction of egress.
  Compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

- The construction and discharge of stairs, landings, thresholds, balustrades and handrails must meet the requirements of the BCA.
  Compliance readily achievable.

- A swinging door in a required exit or forming part of a required exit must not encroach (D2.20) – ***Compliance readily achievable.***

- All doors need to be provided with a free lever latch located at 900-1100mm high or be fitted with fail-safe device which automatically unlocks the door upon fire trip (D2.21).
  Compliance readily achievable.

- Signage should be provided to the fire doors leading to the fire-isolated exits. The signage should be in accordance with Clause D2.23 & D3.6 of the BCA and Clause 183 of the Environmental Planning and Assessment Act 2000.
  Compliance readily achievable.

3. **Access for people with disabilities** – Compliance with part D3 of the BCA including AS1428.1 is required for the development. It is expected that the development will comply with all relevant requirements through meeting either the Deemed to Satisfy provisions of the BCA and the relevant performance requirements through development of performance solutions if required. Refer to separate Philip Chun Accessibility report numbered SMCSWSPS-PCH-OSS-PL-REP-000002.

2.4 Section E – Services and Equipment

1. **Fire Hydrants (E1.3) –** The building must be served with fire hydrants complying with the requirements of BCA Clause E1.3 and AS 2419.1.
   Fire Services designers are proposing to utilise AS2419.1-2017 in lieu of the current BCA adopted AS 2419.1-2005. The current design details indicate compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

2. **Hydrant Booster –** To comply with AS 2419.1-2005 except where a sprinkler system is installed throughout a building in accordance with AS 2118.1, AS 2118.4 or AS 2118.6 the fire hydrant booster protection requirements of clauses 7.3(c)(ii) and 7.3(d)(iii) of AS 2419.1 do not apply.
   Compliance readily achievable.

3. **Pumprooms** – Pumprooms located within a building shall have—
   (a) a door opening to a road or open space, or a door opening to fire-isolated passage or stair which leads to a road or open space; and
   (b) except where the building is sprinkler protected in accordance with AS 2118.1, enclosing walls with an FRL not less than that prescribed by the BCA for a firewall for the particular building classification served by the fire hydrant system.
   Compliance readily achievable

4. **Fire Hose-reels (E1.4) –** The plant, retail and storage areas of the building must be provided with hose-reel coverage complying with the requirements of BCA Clause E1.4 and AS 2441-2005. Hose-reels are to be located within 4m of an exit or an internal fire hydrant.
   Compliance readily achievable.

5. **Sprinklers (E1.5) –** A Sprinkler system is required to be provided throughout the entire building as per BCA Clause E1.5 and AS2118.1 or AS2118.6 (if combined sprinkler and hydrant system). Sprinkler valve enclosure / room location to be confirmed in accordance with the requirements of Clause 6 of Specification E1.5 of the BCA.
   Compliance readily achievable.

6. **Extinguishers (E1.6) –** Fire extinguishers are required to be installed to the class 2 building parts in lieu of fire hose reels. Extinguishers are to be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS2444. Fire extinguishers must be provided to all locations which are deemed a potential risk to the occupants of the building, i.e. areas such as main switchboards.
   Compliance readily achievable.

7. **Fire Control Centre (E1.8) –** A fire control centre facility in accordance with Specification E1.8 is required to be installed in the building as the effective height is greater than 25m. A fire control centre must be so located in a building that egress from any part of its floor, to a public road or open space, does not involve changes in level which in aggregate exceed 300 mm (refer Clause 3 of Specification E1.8 of the BCA).
   The Fire Control Centre is proposed to be provided with a single access point adjacent to the main entrance of the building in lieu of being accessible by two paths of travel. The current design details indicate compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

8. **Smoke Hazard Management (Part E2 of the BCA) -** The buildings mechanical services design is to meet the requirements of Part E2 of the BCA –
   The current design details indicate compliance will be achievable through a combination of deemed to satisfy provisions and performance based solution.

9. **Emergency Lift** – At least 1 emergency lift is required to be installed in a building having an effective height of more than 25m and where two or more lifts are provided serving all storeys of the building at least two emergency lifts are to be provided. The emergency lifts may be combined with the passenger lifts as the passenger lifts serve every storey. Emergency lifts must serve every level of the building including the basement levels and must be accessible for people with disabilities.
Goods lift to serve as the emergency lift for the development. Compliance readily achievable.

   All lift cars must be provided with fire service controls in accordance with AS 1735.2. A stretcher facility must be provided to at least one emergency lift and must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level.
Compliance readily achievable.

10. **Exit and emergency lighting –** Emergency lighting must be installed in every fire isolated stair or passageway and in every storey of a class 6 and 7 building with a floor area greater than 300 square meters.
Compliance readily achievable.

11. **Emergency Warning and Intercom Systems (EWIS)** – A EWIS is required to comply with AS1670.4-2018 as the effective height of the building exceeds 25m.
Compliance readily achievable.

2.5 Section F – Health and Amenity

1. **Weatherproofing** (FP1.4) - A roof and external wall (including openings around windows and doors) must prevent the penetration of water that could cause—
   (a) unhealthy or dangerous conditions, or loss of amenity for occupants
   (b) undue dampness or deterioration of building elements.
   Weatherproofing performance solution to be developed for the building. Compliance readily achievable.

2. **Stormwater drainage** (F1.1) - Stormwater drainage must comply with AS/NZS 3500.3.
   Compliance readily achievable.

3. **Waterproofing of wet areas in buildings** (F1.7) – In a Class 2 building, building elements in wet areas must—
   (i) be water resistant or waterproof in accordance with Table F1.7; and
   (ii) comply with AS 3740.
   Compliance readily achievable.

   In a Class 6 and 7 building, building elements in the bathroom or shower room, a slop hopper or sink compartment, a laundry or sanitary compartment must—
   (i) be water resistant or waterproof in accordance with Table F1.7; and
   (ii) comply with AS 3740,
   as if they were in a Class 2 or 3 building or a Class 4 part of a building.
   Compliance readily achievable.

4. **Provision of floor wastes** (F1.11) In a Class 2 building, a bathroom or laundry located at any level above a sole-occupancy unit or public space must have—(a) a floor waste; and (b) the floor graded to the floor waste to permit drainage of water.
   Compliance readily achievable.

5. **Sanitary Facilities** (F2.1) **–** Sanitary and other facilities for Class 2 building and a must be provided in accordance with Table F2.1.
   Within each sole-occupancy unit, provide—

   a) a kitchen sink and facilities for the preparation and cooking of food; and
   b) a bath or shower; and
   c) a closet pan and washbasin.

   Laundry facilities, provide either—
   a) in each sole-occupancy unit—
      (i) clothes washing facilities, comprising at least one washtub and space for a washing machine; and
      (ii) clothes drying facilities comprising—
         A. clothes line or hoist with not less than 7.5 m of line; or
         B. space for one heat-operated drying cabinet or appliance in the same room as the clothes washing facilities; or

   Note: A kitchen sink or washbasin must not be counted as a laundry washtub.
   Compliance readily achievable.

6. **Sanitary Facilities** (F2.3) – Sanitary facilities must be provided throughout all areas of the building for both females and males in accordance with the requirements of Table F2.3 of the BCA. Employees and the public may share the same facilities in a Class 6 part of a building if the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public.
   Compliance readily achievable.

7. **Construction for sanitary facilities** (F2.5) **-** Doors to fully enclosed sanitary compartments are to open outwards, or slide or have 1.2 metres clear space between door and closet plan or be readily removable from the outside of the sanitary compartment**.**
   Compliance readily achievable.

8. **Room Sizes** (F3.1) - The minimum ceiling height of 2.7m is required to all habitable rooms excluding kitchens. All other rooms are required to have a minimum height of 2.1m. Retail / Commercial space requires 2.4m. Note that SEPP 65 will require 2.7m minimum ceiling height to habitable rooms.
   Compliance readily achievable.

9. **Light –** Natural light must be provided to all habitable rooms within the apartments in accordance with Clause F4.2 of the BCA. The windows should have an aggregate light transmitting area of not less than 10% of the floor area of the room. Where a required window that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is greater than 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill.
   Compliance readily achievable.

   Artificial lighting must comply with Clause F4.4 of the BCA and AS/NZS 1680.0-2009.
   Compliance readily achievable.

10. **Mechanical ventilation –** Mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS/NZS 3666.1 must be provided where natural ventilation cannot be provided.
    Compliance readily achievable.

11. **Commercial kitchen Exhaust** (F4.12) – A commercial kitchen must be provided with a kitchen exhaust hood complying with AS1668.1 and 1668.2 where required by specifics of clause.
    Compliance readily achievable.

12. The proposal will need to meet the sound insulation requirements of Part F5 of the BCA.
    Compliance readily achievable.

2.6 Section G - Ancillary Provisions

1. **Occupiable Outdoor Areas (G6)** – outdoor areas that are normally occupied such as balconies and Communal areas greater than 10m² will need to comply with Part G6 of the BCA. Items for consideration by the design team include:
   - All linings materials or assemblies in an outdoor occupiable area must comply with C1.10 of the BCA.
   - Must be provision made for egress from the outdoor occupiable area in accordance with Part D1 and D2 of the BCA.
   - Fire fighting equipment including portable fire extinguishers and/or fire hose reels and hydrant coverage will need to be provided to any outdoor occupiable area in accordance with Part E1 of the BCA.
   - Lighting to be provided to the outdoor occupiable area in accordance with Part F4 of the BCA.

   Compliance readily achievable.

2. **Window Cleaning NSW** (G1.101)
   a) A building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level.
   b) A building satisfies (a) where—
      (i) the windows can be cleaned wholly from within the building; or
      (ii) provision is made for the cleaning of the windows by a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.

   Compliance readily achievable.

2.7 Section J – Energy Efficiency

1. **Energy Efficiency (Part J) –** This section is mandatory for Class 5 to 9 projects. The building is within Climate Zone 5 and will be required to comply with Parts J5 and J6**,**
   Energy Efficiency Consultant's report required including JV3 report if this is the preferred method of meeting compliance with Part J. Compliance readily achievable.

3.0 Performance solutions - Fire Safety Engineering and others

Based on the reviews to date, we note that Fire Engineered and other minor design Performance Solutions are required for this development. These will be further defined and detailed as the design progresses.

Where compliance with the deemed to satisfy provisions is not readily achievable, performance based assessment and performance solutions will be used to demonstrate compliance with the BCA. The report provides an outline of recommended performance solutions. As the design develops and is resolved, further regulatory reviews will be undertaken to ensure compliance is achieved with the requirements of BCA 2019.

A summary of the performance solutions based on the current design are provided in the table below:

No.	Description	DtS Clause	Comments
1.	Separation between the OSD South Tower and Metro Station	BCA C2.7	The OSD South Tower will be separated from the Station building by a combination of vertical and horizontal fire and smoke rated construction in lieu of DtS vertical fire walls. The station and OSD Towers will be treated as separate buildings for the purposes of approvals.
2.	Protection of openings in the external wall	C3.2	The North Western façade adjacent to the Edinburgh Castle Hotel which stand less than 3m from a side boundary will not be protected above an effective height of 36m. Level 3 plant will have openings within 3m of the side boundary which will not be protected in accordance with C3.4 of the BCA.
3.	Single exit serving some floors	BCA D1.2	The following floors will be served by a single exit: - Level 05 is served by a single exit with travel distance of 21m. - Level 37 and 38 plant are served by a single exits with travel distance up to 26m
4.	Exit travel distances will exceed the requirements of the BCA	BCA D1.4 and D1.5	- Egress distances at level 2 are proposed to be 50m to a single exit and 70m between exits in lieu of DtS 40m and 60m respectively to allow for future fitout flexibility. - Egress distances to a point of choice or to a single exit on levels 3-4, 6, 35 and 37-38 will be 30m in lieu of DtS 20m. - Egress distances to a point of choice on SOU floors will be up to 13m in lieu of DtS 6m.
5.	Location of exits will not comply with the requirements of the BCA	BCA D1.5	- Exits on level 2 will be located to be less than 9m apart.
6.	Required egress width	BCA D1.6	Level 2 will not have the required egress width for the expected population on the floor.
7.	A doorway must not open directly into a fire-isolated stair unless it is from a public corridor, public lobby or the like	BCA D1.7	Alternate fire stair serving level B01 Mezzanine floor will be accessed via the OSD Fire pump room
8.	Occupants within the OSD South Tower will egress using the Station Stairs	BCA D1.7	The OSD is technically considered a separate building therefore independent egress from the separate buildings is not achieved.

9.	Exit doors will not swing in the direction of egress	BCA D2.20	It is noted that due to the design requirement of the Energy Supply Authority, exits serving substations within the development will swing against the direction of egress. The exit serving the loading dock will also not swing in the direction of egress.
10.	Fire Hydrant System	BCA E1.3 and AS2419.1	It is proposed to utilise AS2419.1-2017 in lieu of the current BCA adopted AS 2419.1-2005.
11.	Location of Fire Control Room	BCA E1.8 and Specification E1.8	The main Fire Control Room serving the station will be designed to only have a single entrance from the street in lieu of two paths of access.
12.	Separation of fire systems	E1.3, E1.4, E1.5, E1.8, E2.2, E3.4, E4.9	OSD South is considered to be a separate building form the Station. This performance solution focuses on the fire services system and ancillary areas affected by the separation however various elements of fire services infrastructure will be shared on common floors.
13.	Smoke Exhaust System	BCA E2.2	A zone smoke control system is not proposed to be provided to the station, retail and storage areas of the OSD Tower. The Basement Mezzanine stair is not proposed to be pressurised although connected to a pressurised tower egress stair by way of door at ground floor.
14.	External roof/ walls Weatherproofing	BCA FP1.4	Weatherproofing performance solution to be developed for the project.

4.0 Conclusion on capability

We have assessed the drawings with respect to the Building Code of Australia 2019. In our opinion, Development Consent should not be withheld for concern that the works cannot meet a combination of the Deemed-to-Satisfy and Performance Requirements of the Building Code of Australia 2019**.** Areas of the design are still being developed and will be addressed prior to issue of a construction certificate following the requirements of the Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulations 2000.

Appendix A – FRL Requirements

Table 3 - 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, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	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 m 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