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CONCEPT PLAN - MODIFICATION APPLICATION
FIRE ENGINEERING REVIEW

Victoria Cross Over Station Development

Document No: SMCSWSVO-LLC-SVC-FL-REP-000001

Revision - D
Prepared For – Lendlease Building Pty Limited | ABN 97 000 098 162

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Victoria Cross Over Station Development

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Quality information

Title	CONCEPT PLAN - MODIFICATION APPLICATION FIRE ENGINEERING REVIEW
Document No / ref:	SMCSWSVO-LLC-SVC-FL-REP-000001
Zone:	OSD Building
Disciplines:	Fire and Life Safety
Suitability Code:	Issued For Information

Approval Record

Function	Position	Name	Date
Prepared by	*Fire safety engineer*	*Quentin Li*	*24/07/2019*
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Reviewed By	*Accredited fire safety engineer*	*Victor Tung*	*24/07/2019*
Approved by	*OSD Design Manager*	*Stephen Canty*	*25/07/2019*

Amendment Record

Changes made to this document since its last revision, which affect its scope or sense, are marked in the right margin by a vertical bar (|).

Date	Rev	Amendment Description	By
31/05/2019	A	Issued for Information	Stephen Canty
07/06/2019	B	Updated for Submission	Stephen Canty
12/06/2019	C	Updated for Submission	Stephen Canty
25/07/2019	D	Sydney Metro comments incorporated	Stephen Canty

Contents

Acronyms

Abbreviation	Description
CSSI	Critical State Significant Infrastructure
DA	Development Application
FRNSW	Fire and Rescue NSW
FRL	Fire Resistance Level
GFA	Gross Floor Area
IFEG	International Fire Engineering Guidelines
NCC	National Construction Code
OSD	Over Station Development
SSD	State Significant Development

1. Introduction

This report has been prepared to accompany a section 4.55(2) modification application to the State Significant Development (SSD) Concept Approval (reference SSD 17_8874) granted for a commercial mixed-use Over Station Development (OSD) above the new Sydney Metro Victoria Cross Station. This report has been prepared having regard to the Secretary's Environmental Assessment Requirements dated 30 November 2017.

The Minister for Planning granted development consent to the Concept SSD Development Application (DA) on 18 December 2018. Concept Approval was granted for:

- A maximum building envelope, including street-wall and setbacks for the OSD
- A maximum building height of RL 230 or 168 metres, providing:
  - Approximately 40 commercial storeys and 2 additional storeys for rooftop plant for the high-rise portion of the building envelope
  - Approximately 13 storeys for the lower eastern portion of the building envelope at RL 118 or 55 metres
  - A maximum gross floor area (GFA) of 60,000sqm, excluding station floorspace
  - Basement car parking for a maximum 150 parking spaces.

Following Sydney Metro's appointment of Lendlease (Victoria Cross) Pty Limited as the preferred development partner to deliver the Victoria Cross OSD, and ongoing design development, minor modifications to the approved building envelope are now required.

The section 4.55(2) modification application proposes the following changes to the approved building envelope:

- Reduction in the massing and overall dimensions of the building cantilever above the Miller Street special area setback;
- Relocation of building massing from the low-rise levels the tower, north of the through-site link, to the high-rise levels of the tower;
- Reduction of the Berry Street setback from 5 metres to 4.5 metres, extending the building envelope marginally to the north; and
- Increasing the approved maximum GFA for the over station development from 60,000sqm to 61,500sqm.

It is noted that the Concept SSD DA instrument of approval does not consent to any physical works commencing on site until a Detailed SSD DA is granted for the site. A Detailed SSD DA seeking consent for the detailed construction of the proposed development is lodged under a different cover concurrently with this Concept SSD DA modification application.

2. The site

The site is generally described as 155-167 Miller Street, 181 Miller Street, 187-189 Miller Street, and part of 65 Berry Street, North Sydney (the site). The site occupies various addresses/allotments and is legally described as follows:

- 155-167 Miller Street (SP 35644) (which incorporates lots 40 and 41 of Strata Plan 81092 and lots 37, 38 and 39 of Strata Plan 79612)
- 181 Miller Street (Lot 15/DP 69345, Lot 1 & 2/DP 123056, Lot 10/DP 70667)
- 187 Miller Street (Lot A/DP 160018)
- 189 Miller Street (Lot 1/DP 633088)
- Formerly part 65 Berry Street (Lot 1/DP 1230458)

3. Sydney Metro description

Sydney Metro is Australia's biggest public transport project. Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail 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.

In 2024, Sydney will have 31 metro railway stations and a 66km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre. The Sydney Metro Project is illustrated in the Figure below.

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 Victoria Cross station, including the demolition of existing buildings and structures on both sites. The CSSI Approval also includes construction of below and above ground works within the metro station structure for appropriate integration with the OSD.

With regards to CSSI related works, any changes to the "metro box envelope" and public domain will be pursued in satisfaction of the CSSI conditions of approval and do not form part of the scope of the Concept SSD DA for the OSD.

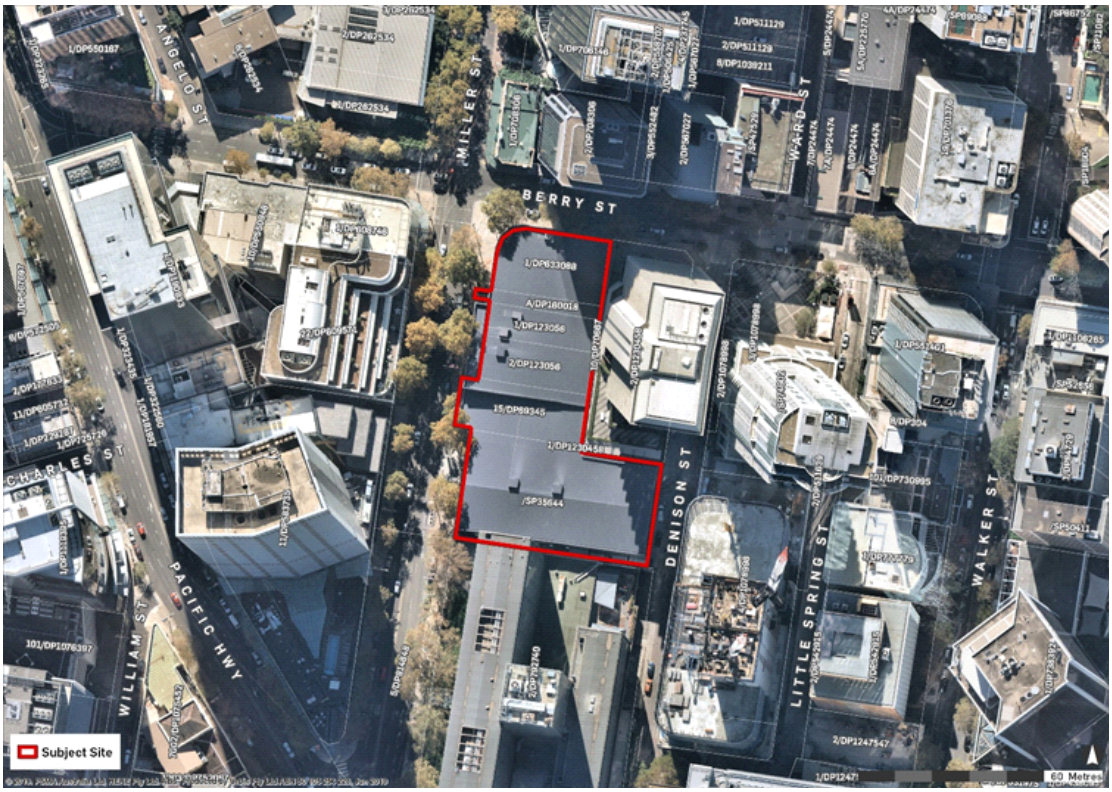

Figure 1 Site aerial

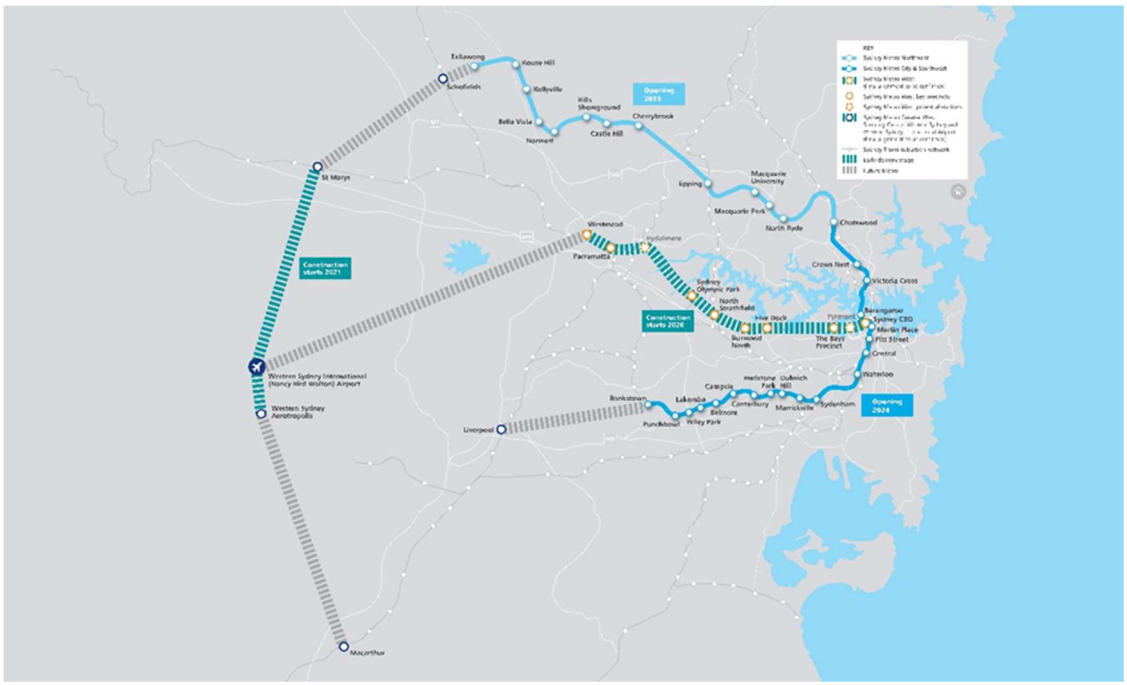

Figure 2 Sydney Metro alignment map

Source: Sydney Metro

4. Description of performance solutions

The designs of the OSD and the CSSI 'metro-box' areas forming part of the OSD uses include areas that do not comply with the DTS provisions of the National Construction Code Volume One – Building Code of Australia (NCC) 2019 and 2016 Amendment 1. We intend to use performance solutions to meet relevant performance requirements of the NCC.

The current extent of the non-compliances with the DTS provisions of the NCC are identified in the Building Code of Australia assessment report 2019/0506 R1.4 dated 9 July 2019 and prepared by Steve Watson & Partners.

Table 1 shows the NCC requirements associated with the performance solutions for the OSD.

4.1 OSD

No	Description of performance solutions	DTS provisions	Performance requirements
1.	Openings to the lift lobbies on levels 16 to 39 are located within 3m of the eastern boundary and are not proposed to be protected.	Clauses C3.2 and C3.4	CP1, CP2 and CP8
2.	The OSD incorporates the following maximum travel distances: • 30m to a point of choice • 60m to the nearest exit • 90m between alternative exits.	Clauses D1.4 and D1.5	DP4, DP6 and EP2.2
	Shortfall in aggregate exit width on the mid-rise office levels – 2m proposed instead of 2.5m required for a population of 220 persons.	Clause D1.6	

Table 1 NCC requirements associated with the performance solutions – OSD

4.2 CSSI 'metro-box' areas

Table 2 shows the NCC requirements associated with the performance solutions for the CSSI 'metro-box' areas forming part of the OSD uses.

No	Description of performance solutions	DTS provisions	Performance requirements
1.	The FRLs of the retail areas are proposed to be reduced from 3 hours to 2 hours.	Clauses C1.1, C2.8 and specification C1.1	CP1, CP2 and CP8
2.	The FRLs of the bicycle parking facility in basement level 2 are proposed to be reduced from 4 hours to 2 hours.	Clauses C1.1, C2.8 and specification C1.1	CP1, CP2 and CP8
3.	The podium office is provided with a single exit instead of two.	Clause D1.2	DP4 and EP2.2
4.	The maximum travel distance to a single exit in the podium office is 30m instead of 20m. The maximum travel distance to a point of choice in the southern laneway building is 30m instead of 20m.	Clause D1.4	DP4 and EP2.2
5.	The basement carpark incorporates the following maximum travel distances: • 30m to a point of choice • 60m to the nearest exit • 90m between alternative exits.	Clauses D1.4 and D1.5	DP4 and EP2.2
6.	The gates providing egress via the OSD lobby on level 2 achieve a width of 900mm instead of 1m.	Clause D1.6	DP4 and DP6
7.	The fire-isolated stair serving the OSD, the basement carpark and the podium office requires occupants to travel within a fire-isolated passageway that is shared with Victoria Cross Station before discharging to road and open space.	Clause D1.7	DP4, DP5 and EP2.2
8.	The fire-isolated stair serving the basement carpark discharges within a covered area – ie below the Miller / Denison through link – that is not open for at least 1/3 of its perimeter and travel to open space is more than 6m.	Clause D1.7	DP4, DP5 and EP2.2
9.	The non-fire-isolated stair serving the level 3 plant room does not provide a continuous means of evacuation to road or open space.	Clause D1.9	DP4 and EP2.2
10.	For security purposes, the automatic doors to the OSD sky lobby are not proposed to open automatically if there is power failure or on activation of a fire or smoke alarm in the building. The doors will be openable by a green push button device to allow occupant evacuation.	Clause D2.19	DP2

No	Description of performance solutions	DTS provisions	Performance requirements
11.	Fire hose reels are not proposed to be provided to the retail areas.	Clause E1.4	EP1.1
12.	The stair pressurisation system for the basement carpark is to be designed with three doors open - i.e doors from two car park levels and the final discharge door	Clause E1.4	EP1.6
13.	Access to the fire control room requires a change in level greater than 300mm. The two paths of travel to the fire control room are not from the front entrance of the building or from a fire-isolated passageway.	Clause E1.8 and specification E1.8	EP1.6
14.	A zone smoke control system is not proposed to be provided to retail areas and the podium office.	Clause E2.2 and specification E2.2a	EP2.2

Table 2 NCC requirements associated with the performance solutions – CSSI 'metro-box' areas

5. Review

As detailed in this report, it is possible to develop performance solutions for the issues identified to demonstrate compliance with the relevant performance requirements of the NCC without major changes to the proposed OSD design.

The details of the proposed performance solutions are subject to the outcome of the fire engineering brief and analysis which will be carried out generally in accordance with the International Fire Engineering Guidelines (IFEG).

The performance solutions for the building will be developed as part of the ongoing design and development process and documented in a format suitable for submission to the relevant approval authorities. It is noted that additional performance solutions may be identified during the ongoing design development process in consultation with the design team.

Appendix A Drawings and information

Drawing title	Dwg no	Date	Drawn
Denison Street Plan	SMCSWSVI-LLC-SVC-AT-DWG-521000	24/06/19	Bates Smart
Miller Street Plan	SMCSWSVI-LLC-SVC-AT-DWG-521001	24/06/19	Bates Smart
Level 01 Plan (Podium Office)	SMCSWSVI-LLC-SVC-AT-DWG-521010	24/06/19	Bates Smart
Level 02 Plan (OSD Lobby)	SMCSWSVI-LLC-SVC-AT-DWG-521020	24/06/19	Bates Smart
Level 03 Plan (Podium Office + Plant)	SMCSWSVI-LLC-SVC-AT-DWG-521030	24/06/19	Bates Smart
Level 03 Mezzanine Plan (Podium Office L04)	SMCSWSVI-LLC-SVC-AT-DWG-521035	24/06/19	Bates Smart
Level 04 Plan (Podium Office)	SMCSWSVI-LLC-SVC-AT-DWG-521040	24/06/19	Bates Smart
Level 05 Podium Office and Tower	SMCSWSVO-LLC-SVC-AT-DWG-420050	24/06/19	Bates Smart
Level 06-14 Low Rise Typical	SMCSWSVO-LLC-SVC-AT-DWG-420060	24/06/19	Bates Smart
Level 15 Mid Level Plant	SMCSWSVO-LLC-SVC-AT-DWG-420150	24/06/19	Bates Smart
Level 16-27 Mid Rise Typical	SMCSWSVO-LLC-SVC-AT-DWG-420160	24/06/19	Bates Smart
Level 28 Mid Rise Lift Overhead	SMCSWSVO-LLC-SVC-AT-DWG-420280	24/06/19	Bates Smart
Level 29 Mid Rise Terrace	SMCSWSVO-LLC-SVC-AT-DWG-420290	24/06/19	Bates Smart
Level 30-39 High Rise Typical	SMCSWSVO-LLC-SVC-AT-DWG-420300	24/06/19	Bates Smart
Level 40 Roof Plant	SMCSWSVO-LLC-SVC-AT-DWG-420400	24/06/19	Bates Smart
Level 43 Roof	SMCSWSVO-LLC-SVC-AT-DWG-420430	24/06/19	Bates Smart
North Elevation	SMCSWSVO-LLC-SVC-AT-DWG-430001	24/06/19	Bates Smart
West Elevation	SMCSWSVO-LLC-SVC-AT-DWG-430002	24/06/19	Bates Smart
South Elevation	SMCSWSVO-LLC-SVC-AT-DWG-430003	24/06/19	Bates Smart
East Elevation	SMCSWSVO-LLC-SVC-AT-DWG-430004	24/06/19	Bates Smart
North/South Section	SMCSWSVI-LLC-SVC-AT-DWG-540001	24/06/19	Bates Smart
East/West Section	SMCSWSVI-LLC-SVC-AT-DWG-540002	24/06/19	Bates Smart
Laneway Section	SMCSWSVI-LLC-SVC-AT-DWG-540003	24/06/19	Bates Smart
North/South Section	SMCSWSVI-LLC-SVC-AT-DWG-540005	24/06/19	Bates Smart

Other information	Ref no	Date	Prepared by
Building Code of Australia assessment report	2019/0506 R1.4	09/07/19	Steve Watson & Partners
Fire engineering brief – Stage 1 design: Underground stations design & technical services	NWRLSRT-MET-SRT-FL-REP-000003 rev P08	05/03/18	Metron