STEVE WATSON
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Sydney Flight Training Facility
28 – 30 Burrows Road, St Peters

BCA Assessment Report
Report 2022/0877 R1.1

Prepared for LOGOS Development Management Pty Ltd
5th October 2022

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SWP Quality System

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Revision History

Rev No	Date	Revision Details	Author	Verifier
R1.0	03/10/2022	Short BCA Report to accompany a submission to the consent authority	Joshua Hawke	Andrew Rys
R1.1	05/10/2022	Updated Short BCA Report to accompany a submission to the consent authority – Updated drawing references	Joshua Hawke	Andrew Rys

Disclaimer:
This report is based on a desktop audit of preliminary DA documentation only.
Details contained in the report address issues of significance to broad BCA compliance relevant to this stage of design resolution.
This report is based on a review of the DA design documentation only. It represents a compliance report for "documentation to this point in time" and will be subject to amendment and further detailed assessment at the Construction Certificate stage.

Introduction

Steve Watson and Partners has been commissioned by LOGOS Development Management Pty Ltd to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the State Significant Development Application (SSD-4760170) for the proposed flight training centre at 28-30 Burrows Road, St Peters.

Summary of BCA Parameters

Building Use:	Flight Training Facility
Class of Occupancy:	Class 9b
Type of Construction required:	Type A (Large Isolate Buildings)
Rise in Storeys:	3 Storeys
Number of Storeys:	3 Storeys
Effective Height:	<25m

Description of the site and locality

The site is located at 28-30 Burrows Road, St Peters and comprises land known as Lot 2 of DP 212652 and Lot 15 of DP 32332. The site is identified in the figure below.

Source: Urbis 2022

Key features of the site are as follows:

- The site is approximately 7,961sqm and is rectangular in shape. The primary frontage to Burrows Road is approximately 123m in length and the site maintains a depth of approximately 63.5m.
- The site has a high point at an RL of 2.85 within the hardstand areas and low point of RL 2.34 towards the canal. The site is currently occupied by two industrial / warehouse buildings with a large hardstand area for vehicle parking and deliveries. Alexandra Canal runs along the southern boundary of the site. A Site Survey Plan accompanies the application which details the topographic characteristics of the site.
- Limited vegetation is located along both the road frontage and the canal. The proposed development is to include a setback of 10m along the southern boundary to align with the City of Sydney's vision for a pedestrian and cycling network along the water's edge.
- Vehicular access to the site from the local road network is available from Burrows Road which links the site to the WestConnex road network in the north and Sydney Airport to the west.
- Two stormwater outlets are currently in place from the site into the Alexandra Canal. A new stormwater outlet is being proposed as part of the development.
- Industrial land uses extend along Burrows Road and Euston Road. St Peters railway station is approximately 1.5km from the site. The nearest residential neighbours south of the site are about 300m away and are separated by industrial warehouse buildings and the Alexandra Canal.
- The site is located within the City of Sydney LGA.

Key feature of the locality are:

The site is approximately 6km south-west of the Sydney CBD. It is close to Sydney Airport (1km north) and the Gateway Project which will link the new St Peters Interchange with Sydney Airport domestic and international terminals and Port Botany. A new bridge will be constructed over Canal Road.

The site is surrounded by a variety of uses, including:

- North: The site has a direct road frontage to Burrows Road, close to the intersection with Campbell Road. Directly opposite the site to the north is the Westconnex Transurban MCC Main Office which comprises car parking facilities for motorists at the St Peters interchange. Sydney Park is further north on the opposite side of Campbell Parade.
- East: The immediately adjoining site to the east comprises industrial development. Campbell Road and Campbell Road Bridge are further east, with additional industrial land uses on the opposite side of Alexandra Canal, including Alexandria and Rosebery. Campbell Road connects the site to the broader Westconnex road network.
- South: The site is bound to the south by Alexandra Canal, a State Significant Heritage Item. Additional industrial land uses are located across the canal to the south, primarily comprising warehouse and distribution centres. Gardeners Road and Bourke Street provide access to Mascot and Eastlakes. Sydney Kingsford Smith Airport is further south.
- West: The immediately adjoining land comprises industrial development. The St Peters WestConnex Interchange is located to the north-west, with the Princes Highway beyond. Further west is low density residential and industrial land uses in the suburb of Sydenham. Sydenham Train Station is approximately 1.5km west of the site, providing services to the Sydney CBD.

Project Description

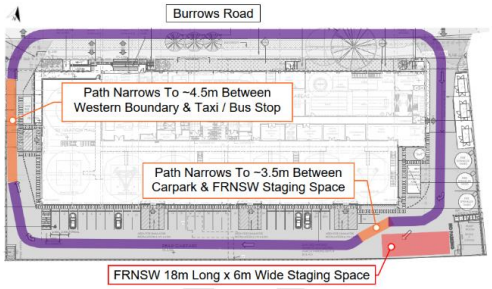
The proposed flight training facility will enable pilots and flight crews from Qantas and other airlines to undertake periodic training and testing to meet regulatory requirements by simulating both aircraft and emergency procedural environments. The flight training centre will be situated within a three-storey industrial warehouse and will include:

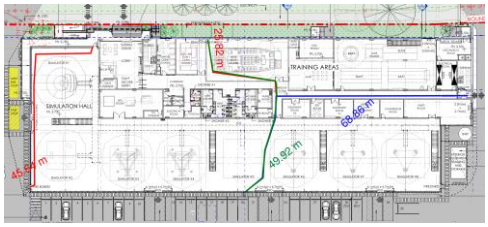
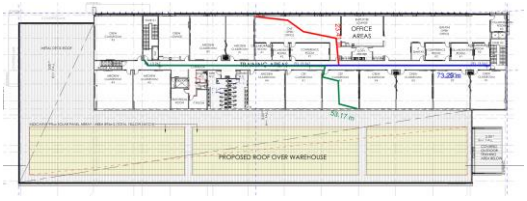
- Flight simulator hall:
  - 8 x simulator bays – State of the art full motion flight simulators with visual fidelity, motion and sound. This allows crew to be trained in all aspects of normal and non-normal operations, including instrument approaches and landings in all weather conditions.
  - The proposed simulators will complement the flight training facilities in other states.
- Emergency procedures component including:
  - Cabin evacuation emergency trainer – Full-scale cabin mock-up is used as practical training device. These facilities allow emergency situations to be accurately portrayed and allow pilots and cabin crew to handle emergency situations in both wide and narrow-bodied aircraft.
  - Slide descent tower – Enables realistic training of deployment and use of slides to evacuate aircraft for pilots and cabin crew.
  - Door trainers – Enables realistic training of use of emergency exits to evacuate aircraft for pilots and cabin crew.
- Ancillary spaces (administration and training areas) including:
  - Equipment room – Storage of emergency equipment (oxygen tanks, defibrillators etc.) that supports the training and assessment of cabin crew and pilots of aviation medicine.
  - Pilots lounge – Area for pilots to wait prior to simulator sessions
  - Meeting rooms and lunch room.
  - Reception area.
  - Toilets, plant, loading dock.

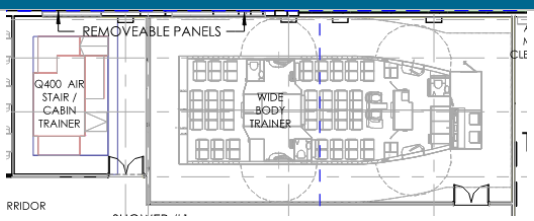
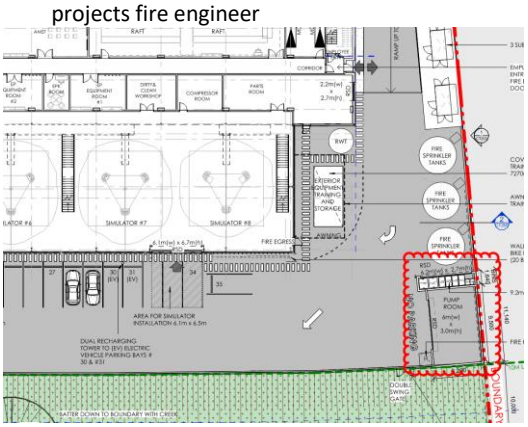
Assessment

Steve Watson and Partners have undertaken a review of the proposed design that will form part of the application to the Consent Authority. We confirm the design as shown on the drawings referenced below are capable of achieving compliance with the BCA and the Disability (Access to Premises – Buildings) Standards 2010. Further detailed regulatory reviews will need to be progressively undertaken as the design develops to ensure compliance is achieved.

Other aspects of the design are proposed to be addressed by way of a Performance Solution to meet the relevant Performance Requirements of the BCA (Fire Engineering). A detailed review at Construction Certificate stage will need to be undertaken to confirm the entirety of the issues however, the anticipated Performance Solutions to be addressed through the projects fire engineer include:

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
1.	**Fire Resisting Construction**	**Clause & Spec C1.1**	The following departures are required to be addressed through means of a performance solution • Installation of a polycarbonate translucent roof sheet in areas in lieu of the roof construction being entirely of non-combustible materials; and • Roller shutters installed to the ground floor simulator hall are proposed to be of insulated panel materials in lieu of complying with the requirements of AS1530.1-1994	CP2
2.	**Ancillary Elements**	**Clause C1.14**	External backlit building identification signage is proposed to be installed around the perimeter of the building which does not conform with the concessions granted under clause C1.14(h)(i) 	CP2
3.	**Requirements for open space and vehicular access**	**Clause C2.4**	The following performance solutions are required to be addressed through means of a performance solution prepared by the projects fire engineer: • The perimeter vehicle path provided contains zones that are less than the required 6m in width due to obstructions such as parking zones as well as the hardstand affiliated with the sprinkler booster location; and  • Obstructions such as gates are documented around the perimeter of the site obstructing a fee passage for the appliances	CP9
4.	**Exit Travel Distances & Distance Between Alternative Exits**	**D1.4 & D1.5**	The following travel distances are applicable to the development and are to be assessed through the projects fire engineer: **Ground Floor**	DP4 & EP2.2

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
			• Distance to a point of choice – **26m** • Distance to the nearest available exit through a point of choice – **50m** • Distance between alternative exits- **Upwards of 70m**  **<u>Level 1 & 2</u>** • Distance to a point of choice – **25m** • Distance to the nearest available exit through a point of choice – **55m** • Distance between alternative exits- **Upwards of 80m**  	
5.	**Dimensions of exits and paths of travel to exits**	**D1.6**	The following reduced widths are to be considered by means of a performance solution through the projects fire engineer: • The flight simulator envelope within the SIM bays has the potential to encroach on the path of travel to the exits depending on its orientation and location  • Widths of paths on the gantry on Level 1 will be reduced to less than 1m due to operation of the draw bridges; the minimum clear width is to be not less than 750mm  • Widths located within the training rooms are not provided with a required 1m width	DP2, DP4 & DP6

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
				
6.	**Fire Hydrants**	**Clause E1.3**	• External hydrants located within proximity to an external wall are to be considered external albeit not treated with a compliant radiant heat shield (90/90/90 FRL) a minimum 2m each side of the hydrant and 3m above the base of the hydrant	EP1.3
7.	**Sprinklers**	**Clause E1.5**	The following Performance solutions are proposed to be addressed through the projects fire engineer: • Clause 4.14.1 of AS2118.1-2017 requires the sprinkler booster to be located as per the requirements of AS2419.1-2005 which stipulates being located adjacent to the vehicular entrance and within site of the main entrance of the building. As the location of the sprinkler booster is located at the rear of the precinct alongside the tanks a performance solution is required to be documented by the projects fire engineer  • Omission of sprinklers is proposed to be provided to the following zones / rooms: ○ The exterior equipment training and storage area, situated in the south-eastern corner of the building, is covered by an awning which is physically attached to the main structure; ○ Within the eight aircraft cockpit flight simulators located on the ground level simulation hall; ○ Fire sprinkler coverage shall be shielded beneath the eight aircraft flight simulators; ○ Within the ground level "wide body training" aircraft cabin and Level 1 door trainer areas. ○ Within ground level MDB / Electrical Room; and ○ Within the Level 1 computer rooms.	EP1.4
8.	**Smoke Hazard**	**Clause**	A performance solution is required to be provided to	EP2.2

Item	Non-Compliance	DTS Clause	Description	Performance Requirement
	Management	**E2.2, Spec E2.2a & Spec E2.2b**	address the departures from the DTS provisions from the project fire safety engineer. The following are to be considered and addressed: • Rationalisation of the smoke exhaust system rates within the development	
9.	**Design and operation of exit signs**	**Clause E4.8 & AS2293.1-2005**	Exit signs within the sim hall are proposed to be installed at a height greater than 2.7 metres from floor level	EP4.8

Referenced Drawings

The following drawings issued by Pace Architects have been assessed as part of this report

Drawing No.	Title	Issue	Date	Drawn By
C1000	Cover Page	19	04/10/2022	PACE Architects
C1100	Site Plan	16	20/09/2022	PACE Architects
C1101	Ground Floor Plan	18	30/09/2022	PACE Architects
C1102	Level 1 & Level 2 Plan	19	04/10/2022	PACE Architects
C1200	Sections – Long	17	26/09/2022	PACE Architects
C1201	Sections – Short	17	26/09/2022	PACE Architects
C1202	Elevations – North & South	19	04/10/2022	PACE Architects
C1203	Elevations – East & West	17	26/09/2022	PACE Architects
C1204	3D Perspective – East Corner	16	20/09/2022	PACE Architects
C1205	3D Perspective – West Corner	16	20/09/2022	PACE Architects
C1206	3D Perspective – Alexandria Canal	16	20/09/2022	PACE Architects
C1207	3D Axonometric Aerial View	16	20/09/2022	PACE Architects
C1207-1	3D Axonometric Aerial View 2	16	20/09/2022	PACE Architects
C1207-2	3D Axonometric Aerial View 3	16	20/09/2022	PACE Architects
C1208	Materials	16	20/09/2022	PACE Architects
C1209	3D Perspective – Burrows Road	16	20/09/2022	PACE Architects
C1210	Signage & Wayfinding Site Plan	19	04/10/2022	PACE Architects
C1212	GFA Plans	16	20/09/2022	PACE Architects

Fire Rating Requirements – Type A Construction

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

Statutory Fire Safety Measures

Measure	Standard of Performance
Access Panels, Doors And Hoppers To Fire Resisting Shafts	BCA 2019 Amendment 1 Clause C3.13 and tested prototypes (AS 1530.4 – 2014)
Automatic Fail Safe Devices	Scheduled devices release upon trip of smoke detection, fire detection and sprinkler activation in accordance with BCA 2019 Amendment 1 Clause D2.21.
Automatic Fire Detection And Alarm System *(Smoke Detection System)*	BCA 2019 Amendment 1 Clause 4 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Detection System To Automatically Shutdown Air-Handling System)*	BCA 2019 Amendment 1 Clause 6 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Detection And Alarm System *(Smoke Detection System To Activate Smoke Exhaust System)*	BCA 2019 Amendment 1 Clause 5 of Specification E2.2a and AS 1670.1 – 2018
Automatic Fire Suppression Systems *(Sprinklers)*	BCA 2019 Amendment 1 Specification E1.5 and AS 2118.1 – 2017
Building Occupant Warning System	BCA 2019 Amendment 1 Clause 7 of Specification E2.2a and AS 1670.1 – 2018
Emergency Lighting	BCA 2019 Amendment 1 Clause E4.2, E4.4 and AS/NZS 2293.1 – 2018
Exit Signs	BCA 2019 Amendment 1 Clause E4.5, NSW E4.6, E4.8 and AS/NZS 2293.1 – 2018
Fire Alarm Monitoring System	BCA 2019 Amendment 1 Clause 8 of Specification E2.2a and AS 1670.3 – 2018
Fire Dampers	BCA 2019 Amendment 1 Clause C3.15 and AS 1668.1 – 2015 (AS 1682.1 – 2015 and AS 1682.2 – 2015)
Fire Doors	BCA 2019 Amendment 1 Specification C3.4 and AS/NZS 1905.1 – 2015
Fire Hydrants Systems	BCA 2019 Amendment 1 Clause E1.3 and AS 2419.1 – 2005
Fire Seals Protecting Opening In Fire Resisting Components Of The Building	BCA 2019 Amendment 1 Clause C3.15, Specification C3.15, AS 1530.4 – 2014, AS 4072.1 – 2005 and installed in accordance with the tested prototype.
Hose Reel System	BCA 2019 Amendment 1 Clause E1.4 and AS 2441 – 2005
Lightweight Construction	BCA 2019 Amendment 1 Specifications C1.8, Clause A2.3 and AS 1530.4 – 2014
Mechanical Air Handling System *(Automatic Shut Down Of Air-Handling System)*	BCA 2019 Amendment 1 Clause E2.2 and AS 1668.1 – 2015
Mechanical Air Handling System *(Automatic Smoke Exhaust System)*	BCA 2019 Amendment 1 Specification E2.2b

Measure	Standard of Performance
Perimeter Vehicle Access For Emergency Vehicles	BCA 2019 Amendment 1 Clause C2.4
Portable Fire Extinguishers	BCA 2019 Amendment 1 Clause E1.6 and AS 2444 – 2001
Warning And Operational Signs	BCA 2019 Amendment 1 Clauses D2.23, D3.6 & Specification D3.6, E3.3, E3.9 & E3.10

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