

Eastern Creek Data Centre Expansion Environmental Impact Statement

August 2022





Prepared for:



DCI Data Centers
90 Peter Brock Drive
EASTERN CREEK NSW 2766

Prepared by:



pjep environmental planning Pty Ltd, abn. 73 608 508 176
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striving for balance between economic, social and environmental ideals...

PJEP Ref: _EIS_Eastern Creek Data Centre_Aug22

DISCLAIMER

This document was prepared for the sole use of DCI Data Centers (DCI) and the regulatory agencies that are directly involved in this project, the only intended beneficiaries of our work. No other party should rely on the information contained herein without the prior written consent of PJEP Environmental Planning and DCI.



DECLARATION BY AUTHOR

Environmental Impact Statement

Prepared under Part 4 of the
*Environmental Planning and
Assessment Act 1979*

EIS prepared by

Name

Position

Qualifications

Company

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PJEP Environmental Planning

Development to which Part 4 applies

Application number

Development

Applicant name

Applicant address

SSD-21342738

Eastern Creek Data Centre Expansion Project

NineZero DC Sub TC I Pty Ltd

90 Peter Brock Drive

EASTERN CREEK NSW 2766

Land to be developed

Lot 34 in DP 1131779, Lots 32 and 33 in DP
1140168, and Lot 25 in DP 1122038, Peter Brock
Drive, Eastern Creek

Declaration

I certify that I have prepared the contents of this
document, and to the best of my knowledge the
EIS:

- (i) has been prepared in accordance with Part
4 Division 4.7 of the EP&A Act and the
Regulations (including Part 8, Division 5);
- (ii) contains all available information that is
relevant to the environmental assessment
of the development; and
- (iii) is neither false nor misleading.

Signature

Name Phillip Jones

Date 3 August 2022



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EXECUTIVE SUMMARY

NineZero DC Sub TC I Pty Ltd (trading as DCI Data Centers, or DCI) is proposing to expand its existing data centre at 90 Peter Brock Drive Eastern Creek, within the Raceway Precinct in the Western Sydney Employment Area.

The Eastern Creek Data Centre was originally developed by Woolworths Limited (Woolworths), in accordance with a major project approval granted by the then Minister for Planning on 15 December 2008, under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (MP 08_0108).

The existing data centre site has a total area of approximately 3.5 hectares. The data centre, referred to by DCI as 'SYD01', has a nominal power consumption of 7.2 megawatts (MW), and comprises:

- a predominately single storey data storage building with a total floor area of 10,145m² (or 7,070 m² gross floor area, GFA), including:
 - 3 data storage halls;
 - attached 2 level uninterruptible power supply (UPS) rooms serving each data hall; and
 - attached ancillary office, storage areas, workshops and amenities;
- a detached Emergency Power Generation (EPG) building;
- a detached 2 level central chiller plant building; and
- ancillary plant, services and facilities.

DCI acquired the data centre from Woolworths in 2019, and has been operating the facility in accordance with the project approval since this time.

In November 2020, the Sydney Central City Planning Panel (the Panel) approved a development application (SPP-19-00009) from DCI for the partial demolition of the data centre and construction of an 8 storey extension with associated works (excluding fitout). The 8-storey extension, referred to by DCI as 'SYD02', would increase the GFA of the Eastern Creek Data Centre by approximately 26,403m², to an overall GFA of 31,779m². DCI has not commenced the works approved under SPP-19-00009 to date.

Since obtaining consent for the expanded SYD02 data centre, DCI has undertaken further detailed design and review of its requirements for the Eastern Creek Data Centre expansion. This review has identified an alternative strategy to progress the data centre expansion, involving a more 'lateral' expansion of the facility onto neighbouring landholdings, rather than the 'vertical' SYD02 expansion proposed under SPP-19-00009.

To this end, DCI has acquired additional landholdings immediately to the west of the existing Eastern Creek Data Centre site, and is proposing to expand the data centre facility onto these sites. DCI has also acquired an additional landholding immediately to the south-east of the data centre site, and is proposing to develop a zone substation on this site to service the data centre. The expanded site has a total area of 4.1 hectares.

The key components of the proposal, referred to by DCI as 'SYD03', include:

- subdivision to consolidate the expanded data centre site into a single lot;
- demolition of existing industrial buildings and structures on the expansion lots, and some existing structures on the existing data centre site, to facilitate the proposal;
- construction and operation of the expanded data centre, with an additional GFA of approximately 13,210m² (and overall GFA of 20,280m²), including:
 - a new 4 level data centre building to the west of the existing data centre, comprising 10 additional data halls and an additional power consumption of approximately 32MW;



- a new 4 level ancillary office building adjacent to the new data centre building;
 - a new zone substation to the south-east of the existing data centre;
 - some modifications to the existing data centre to facilitate the expansion; and
- ancillary infrastructure and services to facilitate the expansion.

The development has a capital investment value of approximately \$330 million (exc. GST), and would generate approximately 150 jobs during construction and 100 high technology jobs once operational.

If the proposed SYD03 expansion is approved and acted upon, DCI would not proceed with the SYD02 expansion approved under SPP-19-00009.

The proposal constitutes 'State Significant Development' under Part 4, Division 4.7 of the EP&A Act, and consequently the Minister for Planning¹ is the consent authority for the development.

The key environmental issues identified for assessment in this environmental assessment include:

- design and visual amenity, including in relation to building height and interaction with Prospect Nature Reserve;
- consistency with strategic and statutory planning instruments;
- infrastructure servicing requirements, particularly electrical services and back-up power generation;
- soil and water, including integrated water cycle management;
- noise and vibration;
- air quality and greenhouse gas;
- traffic and transport, including parking; and
- hazards, including bushfire and dangerous goods.

Assessment of these and other environmental issues indicates that the development is able to be conducted in a manner that would not result in any significant environmental impacts, or impacts on the amenity of surrounding land users. In particular, environmental assessment indicates that:

- the development is not expected to result in any adverse visual impacts, as:
 - the proposed SYD03 expansion would significantly reduce the maximum building height compared to the approved SYD02 development (ie. by more than 18 metres);
 - the proposed SYD03 expansion would reduce the relative building height by an even greater amount compared to the approved SYD03 expansion (ie. by approximately 25 metres), as the proposed 4 level data storage building would be located in the lowest part of the site;
 - the proposed facilities have been designed to a high architectural and landscape quality, providing good articulation and a range of high quality materials and finishes;
 - the proposal respects and addresses the attributes and constraints of the site, including the Prospect Nature Reserve to the south of the site; and
 - visual assessment, including detailed photomontages, indicates that the proposed SYD03 data centre expansion would not result in any significant adverse impacts on surrounding receivers, and would result in a considerable reduction of visibility compared to the approved SYD02 expansion;
- the proposal is generally consistent with, and promotes the objectives of, relevant strategic and statutory planning instruments;
- all required infrastructure for the development is (or will be) in place, with the proposal providing for development of a substation to service the electrical needs of the facility;
- soil and water aspects (including erosion and sedimentation, contamination, salinity, drainage and flooding, riparian areas and pollution) are not significant, and are able to be effectively managed;
- noise and air emissions are predicted to comply with applicable criteria, including during power outages when back-up power generators would be operating;

¹ Or the Independent Planning Commission if the proposal meets certain thresholds.



- greenhouse gas emissions would be low compared to contemporary data centre facilities in Australia, given DCI's commitments to best practice energy savings technologies, and its commitments to net zero emissions by 2050;
- traffic volumes would be modest, and would not result in any significant traffic or parking impacts; and
- hazards (including bushfire and dangerous goods) would not be significant and are able to be effectively managed.

The development is considered to be compatible with the future desired character of the area under the Raceway Precinct Plan and the *State Environmental Planning Policy (Industry and Employment) 2021* (including the Western Sydney Employment Area SEPP), as well as the wider Greater Sydney Region Plan and other applicable strategic plans.

The expanded data centre would have significant social and economic benefits for Blacktown and Western Sydney, through the generation of approximately 100 high technology jobs at the facility, provision of increased data storage and high technology service opportunities, as well as a significant capital investment in the site.

Accordingly, it is considered that the development represents orderly development of the land. It is respectfully requested that the Minister or his delegate², having due regard for the information submitted in this Environmental Impact Statement, grants approval to the proposed Eastern Creek Data Centre Expansion in the Western Sydney Employment Area.

² Or the Independent Planning Commission



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CONTENTS

1	INTRODUCTION	1
1.1	Overview	1
1.2	DCI Data Centers.....	1
1.3	Background.....	2
1.4	EIS Project Team.....	5
2	THE SITE	7
2.1	Location and Context.....	7
2.2	Site Description and Ownership	7
2.3	Land Use.....	8
2.4	Existing Environment	9
2.5	Infrastructure and Services.....	9
2.6	Description of the Existing Data Centre.....	10
3	PROPOSED DEVELOPMENT	12
3.1	Development Summary	12
3.2	Subdivision.....	17
3.3	Demolition and Earthworks	17
3.4	Facility Description.....	18
3.5	Staging.....	21
3.6	Hours of Operation.....	22
3.7	Capital Investment	22
3.8	Employment	22
3.9	Infrastructure and Services.....	22
3.9.1	Access and Road Network	22
3.9.2	Electricity	23
3.9.3	Back-up Power Generation	24
3.9.4	Stormwater Drainage.....	25
3.9.5	Other Services.....	26
3.10	Resource Use Management	27
3.10.1	Energy Conservation.....	27
3.10.2	Water Conservation.....	27
3.11	Landscaping.....	27
3.12	Fencing, Lighting and Security	28
3.13	Signage.....	28
4	PLANNING CONTEXT	29
4.1	Strategic Context	29
4.1.1	Greater Sydney Region Plan.....	29
4.1.2	Central City District Plan	29
4.1.3	Other Strategic Plans	30
4.2	Statutory Context	32
4.2.1	Permissibility.....	32
4.2.2	State Significant Development	33
4.2.3	Integrated and Other Approvals	33
4.2.4	Objects of the Act	34
4.3	Environmental Planning Instruments.....	34
4.3.1	SEPP (Biodiversity Conservation) 2021.....	35
4.3.2	SEPP (Resilience and Hazards) 2021	35
4.3.3	SEPP (Transport and Infrastructure) 2021.....	36
4.3.4	SEPP (Planning Systems) 2021.....	36



4.3.5	SEPP (Industry and Employment) 2021	36
4.4	Raceway Precinct Plan	40
4.5	Development Contributions.....	44
5	CONSULTATION AND IDENTIFICATION OF KEY ISSUES	46
5.1	Stakeholder Identification.....	46
5.2	Secretary's Environmental Assessment Requirements.....	47
5.3	Issue Identification	47
5.4	Key Issues	48
6	ENVIRONMENTAL ISSUES	50
6.1	Design and Visual	50
6.1.1	Architectural and Landscape Design.....	50
6.1.2	Visual Amenity.....	52
6.2	Soil and Water	58
6.2.1	Erosion and Sedimentation	58
6.2.2	Site Contamination	58
6.2.3	Salinity	60
6.2.4	Acid Sulfate Soils.....	61
6.2.5	Riparian Areas and Waterbodies	61
6.2.6	Stormwater Management	61
6.2.7	Flooding.....	63
6.2.8	Soil and Water Pollution	64
6.3	Noise and Vibration.....	64
6.3.1	Operational Noise.....	65
6.3.2	Construction Noise	67
6.3.3	Construction Vibration	68
6.3.4	Traffic Noise	68
6.4	Air Quality and Greenhouse Gas	69
6.4.1	Air Emissions.....	69
6.4.2	Odour.....	72
6.4.3	Greenhouse Gases and Energy Efficiency	72
6.5	Flora and Fauna.....	74
6.6	Heritage.....	76
6.6.1	Aboriginal Heritage	76
6.6.2	Historical Heritage	76
6.7	Traffic and Parking.....	78
6.7.1	Existing Road Network	78
6.7.2	Access and Internal Circulation.....	78
6.7.3	Traffic Generation and Impacts	79
6.7.4	Parking	80
6.7.5	Pedestrians, Cycling and Public Transport	81
6.8	Wastes and Hazards.....	81
6.8.1	Wastes.....	81
6.8.2	Bushfire Hazard.....	82
6.8.3	Crime Risk	84
6.8.4	Dangerous Goods and Hazardous Substances.....	85
6.9	Social and Economic	86
7	JUSTIFICATION AND CONCLUSION.....	88
7.1	Summary of Mitigation Measures	88
7.2	Consideration of Alternatives.....	89
7.3	Project Need and Justification	91
7.4	Conclusion	92



TABLES

- 1.1: EIS Project Team
- 3.1: Eastern Creek Data Centre Expansion Development Summary
- 3.2: Eastern Creek Data Centre Expansion Development Schedule
- 4.1: WSEA SEPP Development Standards Consideration
- 4.2: Raceway Precinct Plan Compliance
- 5.1: Stakeholder Consultation and Issues Raised
- 6.1: Summary of Visual Impact Assessment
- 6.2: Water Quality Modelling Results
- 6.3: Operational Noise Predictions
- 6.4: Sleep Disturbance Assessment
- 6.5: Construction Noise Predictions
- 6.6: Existing Local Air Quality
- 6.7: Industry NABERS Scores
- 6.8: Predicted GHG Emissions
- 6.9: Industry GHG Emissions Comparison
- 6.10: Intersection Modelling Results
- 7.1: Summary of Mitigation Measures
- 7.2: Consideration of Alternative Back-Up Power Generation

FIGURES

- 1.1: Regional Context
- 1.2: Western Sydney Employment Area
- 1.3: Existing SYD01 Data Centre Site Plan
- 1.4: Existing SYD01 Data Centre Perspective
- 1.5: Approved SYD02 Data Centre Expansion Site Plan and Section
- 1.6: Approved SYD02 Data Centre Expansion Perspective
- 2.1: Location Plan
- 2.2: Raceway Precinct Plan
- 2.3: Aerial Photo and Lot Details
- 3.1: Site Plan
- 3.2: Level 1 Floor Plan
- 3.3: Representative Elevations – SYD03 Data Centre
- 3.4: Representative Elevations – Ancillary Office Building
- 3.5: Representative Elevations – Substation
- 3.6: Representative Perspectives
- 3.7: Proposed Plan of Consolidation
- 3.8: Indicative Staging Plan
- 3.9: Electricity Servicing Strategy
- 3.10: Stormwater Management Strategy
- 4.1: Central River City Vision
- 4.2: Central City District Structure Plan
- 4.3: Zoning Plan
- 4.4: WSEA SEPP Precincts
- 6.1: Relative Building Heights
- 6.2: Viewpoint Locations
- 6.3: Photomontage – VP1
- 6.4: Photomontage – VP2
- 6.5: Photomontage – VP3



- 6.6: Photomontage – VP4
- 6.7: Photomontage – VP7
- 6.8: Photomontage – VP8
- 6.9: Photomontage – VP9
- 6.10: Site Contamination Sampling Locations
- 6.11: Precinct Stormwater Management Plan
- 6.12: Flood Modelling – 1 in 500 year ARI
- 6.13: Noise Catchment Areas
- 6.14: Noise Contours During Emergency Operations
- 6.15: Predicted Project Only 24-Hour PM_{2.5} Contours – Scenario 1
- 6.16: Predicted Project Only 24-Hour PM₁₀ Contours – Scenario 1
- 6.17: Predicted Cumulative NO₂ Contours – Scenario 2
- 6.18: Heritage Items
- 6.19: Bushfire Risk Areas
- 6.20: Defendable Space Plan

APPENDICES

- A SEARS and Additional Stakeholder Feedback
- B Architectural Design Plans
- C Landscape Design Plans
- D Draft Plan of Consolidation
- E Civil Design Plans
- F Architects Design Statement
- G BCA Compliance Assessment
- H Soil and Water Management Plan
- I Energy and Greenhouse Gas Assessment
- J Visual Assessment
- K Site Contamination Assessment
- L Salinity Assessment and Management Plan
- M Noise and Vibration Assessment
- N Air Quality Assessment
- O Aboriginal Heritage Assessment
- P Statement of Heritage Impact
- Q Traffic Assessment
- R Waste Management Plan
- S Bushfire Assessment
- T Hazards Analysis



1 INTRODUCTION

1.1 Overview

NineZero DC Sub TC I Pty Ltd (trading as DCI Data Centers, or DCI) is proposing to expand its existing data centre at 90 Peter Brock Drive Eastern Creek, within the Raceway Precinct in the Western Sydney Employment Area (see **Figures 1.1** and **1.2**).

This Environmental Impact Statement (EIS) has been prepared by PJEP Environmental Planning Pty Ltd (PJEP) on behalf of DCI, to assist the consideration of the development under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

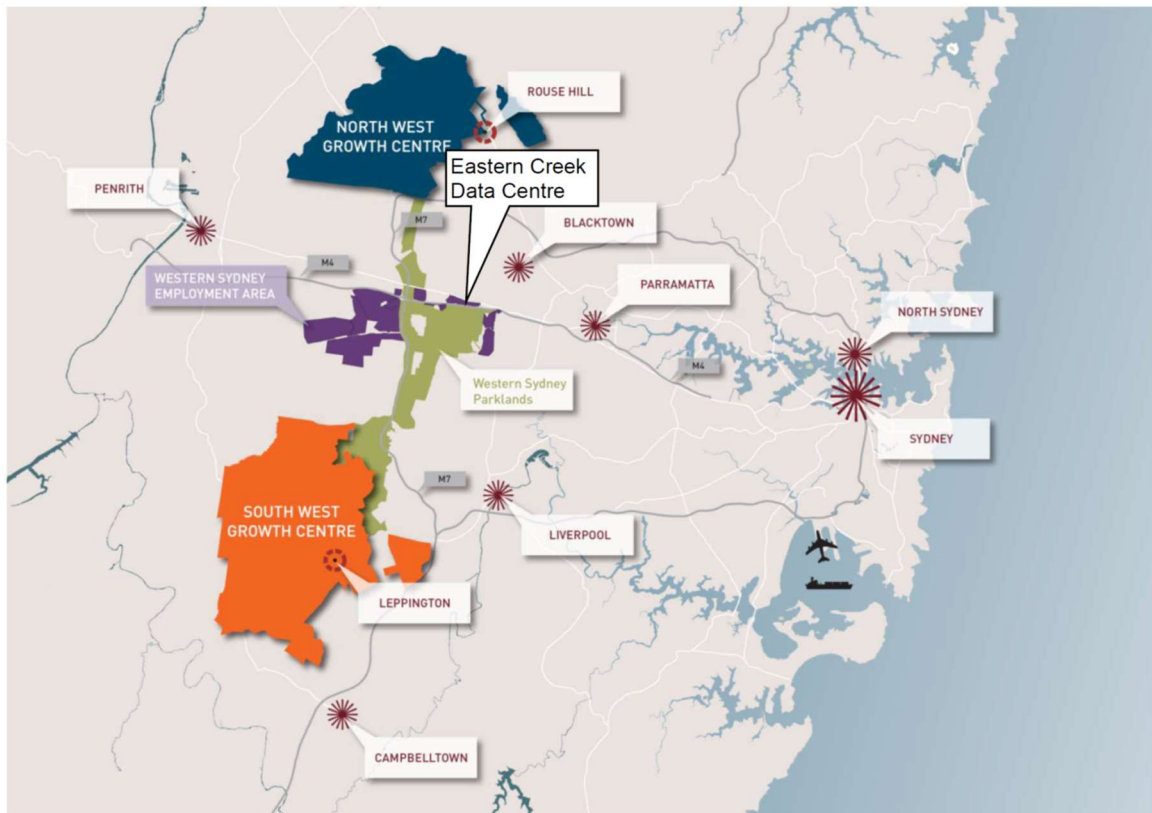


Figure 1.1: Regional Context (Source: Department)

1.2 DCI Data Centers

DCI is a leading wholesale data centre provider, providing customers with wholesale data storage, fully serviced co-location, connectivity, and business continuity solutions across Asia Pacific. DCI serves a range of cloud service providers, managed service providers, enterprise, and government agencies from its secure, reliable, and certified data centre facilities.

Led by a highly experienced management team, DCI's mission is to become the preferred partner in the Asia Pacific region for the delivery of highly secure data centre solutions located from the hyperscale core to the connected regional edge.

DCI is a subsidiary of Brookfield Asset Management and its investment partners. Known for their work in critical infrastructure around the world, Brookfield has invested in growth platforms like DCI to help build better connected digital economies.



DCI's management team has experience in the design and management of over 500,000 square metres of data centre and technology real estate across the world. The company currently operates two data centres in Australia, including the Eastern Creek Data Centre in Western Sydney, with the other facility in Adelaide.

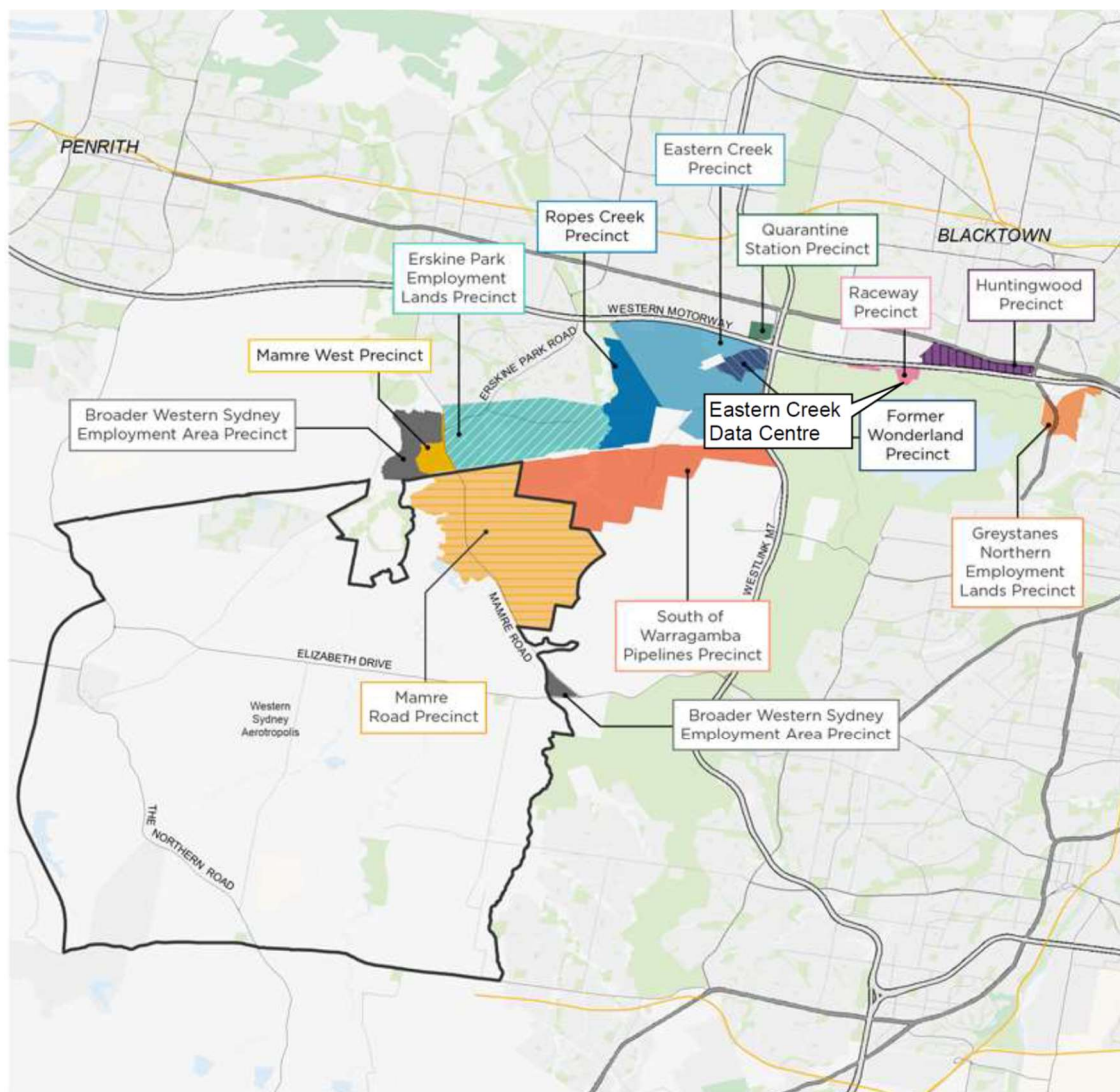


Figure 1.2: Western Sydney Employment Area (Source: Department)

1.3 Background

On 15 December 2008, the then Minister for Planning approved a major project application (MP 08_0108) from Woolworths Limited (Woolworths) for the development of the Eastern Creek Data Centre, under the former Part 3A of the EP&A Act.

The layout of the approved data centre, referred to by DCI as 'SYD01', is shown on **Figures 1.3** and **1.4**. The facility has a nominal total power consumption of 7.2 megawatts (MW) and comprises the following key components:

- a predominately single level data storage building with 3 data halls, attached 2 level uninterruptible power supply (UPS) rooms serving each data hall, and attached ancillary office and service areas;
- a detached Emergency Power Generation (EPG) building;
- a detached 2 level central chiller plant building; and
- ancillary plant, services and facilities.



Environmental Impact Statement Eastern Creek Data Centre Expansion

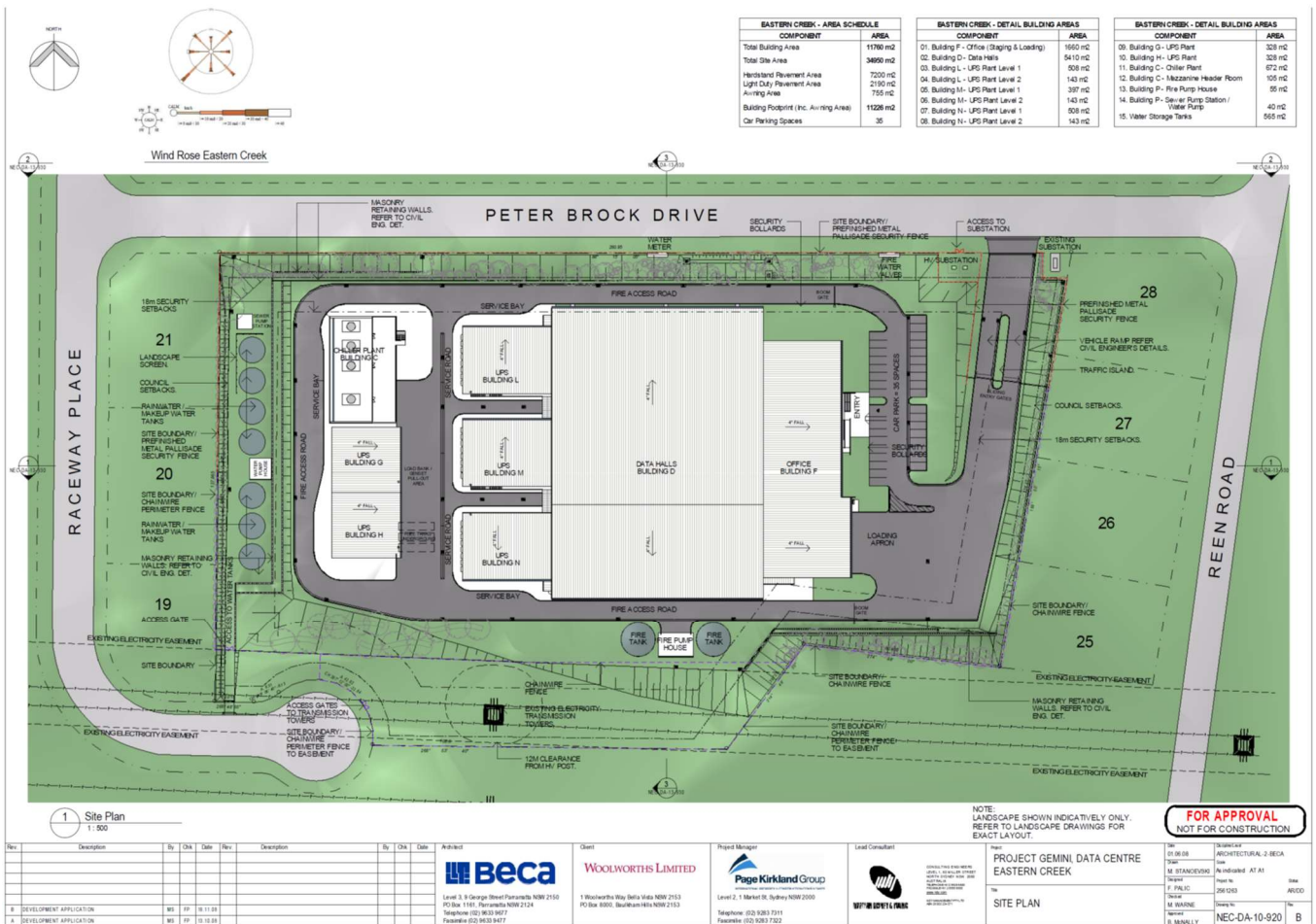


Figure 1.3: Existing SYD01 Data Centre Site Plan (Source: Beca)

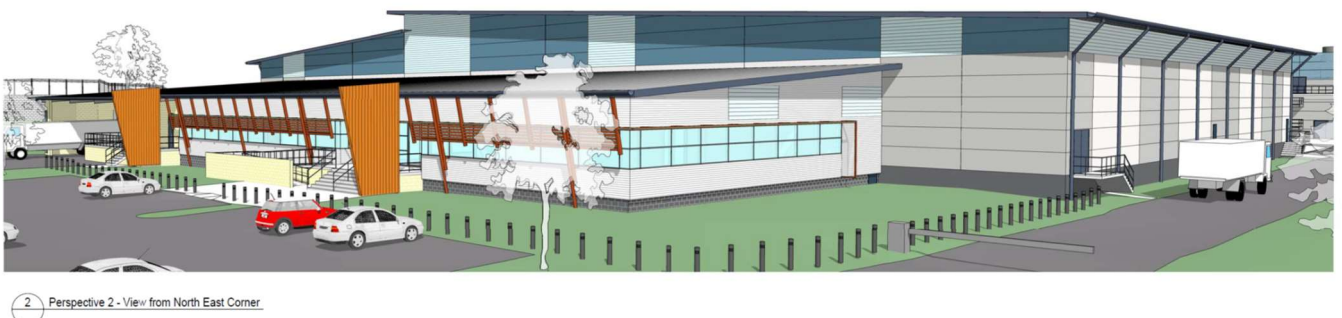


Figure 1.4: Existing SYD01 Data Centre Perspective (Source: Beca)



In 2019, DCI acquired the data centre, and has been operating the facility in accordance with the project approval since this time. The approval has not been modified since the original project approval, although a number of complying development certificates have been issued for various works (generally internal fitout).

In September 2019, DCI lodged a development application (SPP-19-00009) with Blacktown City Council (Council) for the partial demolition of the data centre and construction of an 8 storey extension with associated works (excluding fitout). The 8 storey extension has a gross floor area (GFA) of some 26,403m², increasing overall GFA for the expanded data centre to approximately 31,779m². The proposal had a stated capital investment value of \$46.6 million, and therefore the Sydney Central City Planning Panel (the Panel) was the consent authority for the proposal.

On 16 November 2020, the Panel approved the development application, subject to conditions. The layout of the approved 8 storey expansion is shown on **Figures 1.5 and 1.6**. The approved expansion is referred to by DCI as 'SYD02'.

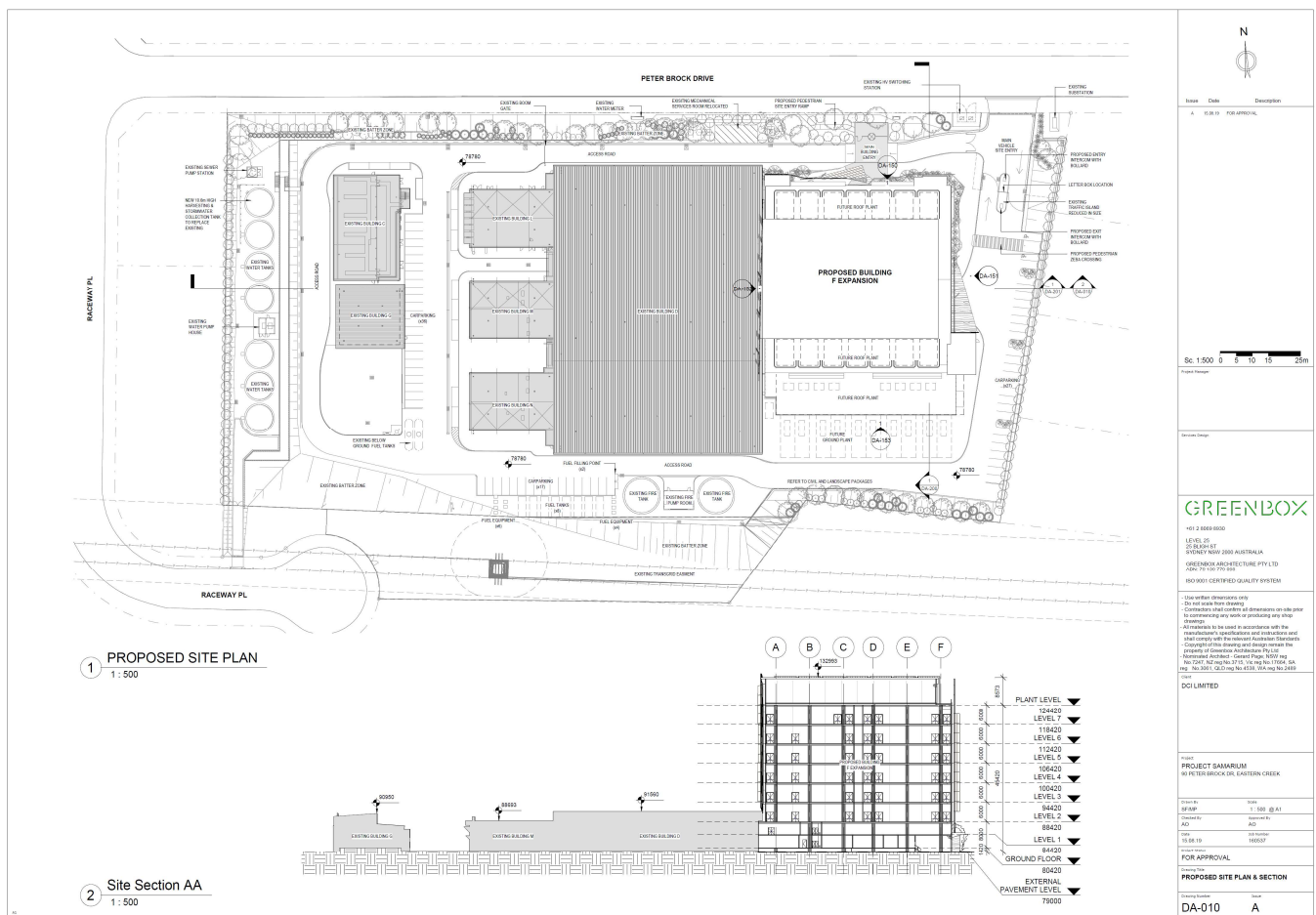


Figure 1.5: Approved SYD02 Data Centre Expansion Site Plan and Section (Source: Greenbox)

Since lodging the development application and obtaining consent for the expanded SYD02 data centre, DCI has undertaken further detailed design and review of its requirements for the Eastern Creek Data Centre expansion.

This internal review has identified an alternative strategy to progress the data centre expansion, involving a more 'lateral' expansion of the facility onto neighbouring landholdings, rather than the 'vertical' expansion proposed under SPP-19-00009.



Figure 1.6: Approved SYD02 Data Centre Expansion Perspective (Source: Greenbox)

To this end, DCI has acquired additional landholdings immediately to the west of the existing Eastern Creek Data Centre site, and is proposing to expand the facility onto these sites. DCI has also acquired an additional landholding immediately to the south-east of the data centre site, and is proposing to develop a zone substation on this site to service the data centre. The proposed expansion is referred to by DCI as 'SYD03'.

1.4 EIS Project Team

This EIS has been prepared by PJEP in conjunction with a range of specialist consultants as listed in the following table. The EIS also benefits from a number of studies undertaken for the original data centre approval and the 8-storey expansion project, as well as studies undertaken for the development of the wider Raceway Precinct.

Table 1.1: EIS Project Team

Discipline	Organisation	Study/Deliverable
<i>Project Management</i>	DCI	Project Management
<i>Environmental Planning</i>	PJEP Environmental Planning	Environmental Assessment
<i>Architecture</i>	DEM	Architectural Plans
<i>Landscape Design</i>	Studio IZ	Landscape Plans
<i>Survey</i>	William Hamer	Subdivision Plans
<i>Electrical Servicing</i>	DEP Consulting	Electricity Servicing Advice
<i>Soil and Water</i>	Calibre	Civil Plans
		Erosion and Sediment Control Plan
		Soil and Water Management Plan
		Flood Study
	Arcadis	Site Contamination
	Geotesta	Salinity Assessment
<i>Noise and Vibration</i>	RWDI	Noise and Vibration Assessment
<i>Air Quality</i>	Todoroski Air Sciences	Air Quality Assessment
<i>Heritage</i>	Eco Logical	Heritage Impact Statement
<i>Traffic and Parking</i>	Transport & Urban Planning	Traffic Assessment
<i>Visual Amenity</i>	Geoscape	Visual Assessment



<i>Discipline</i>	<i>Organisation</i>	<i>Study/Deliverable</i>
<i>Bushfire</i>	Australian Bushfire Protection Planners	Bushfire Assessment
<i>Waste</i>	PJEP	Waste Management Plan
<i>Hazards</i>	Hazkem	Hazards Analysis
<i>BCA Compliance</i>	Steve Watson & Partners	BCA Compliance Report
<i>Energy and Greenhouse Gases (GHG)</i>	Alliance	Energy & GHG Assessment
<i>Infrastructure Servicing</i>	Alliance Mission Critical Systems DEP Consulting	Infrastructure Servicing Strategy
<i>Quantity Surveying</i>	Arcadis	Capital Investment Value Estimate



2 THE SITE

2.1 Location and Context

The Eastern Creek Data Centre is located in the employment estate known as the Raceway Precinct, within the Blacktown local government area (see **Figure 2.1**).

The Raceway Precinct is one of the key employment precincts of the Western Sydney Employment Area. The precinct has a total area of approximately 25.5 hectares, and is largely developed for modern industrial and employment purposes. The precinct structure plan is shown on **Figure 2.2**.



Figure 2.1: Location Plan (Source: Sixmaps)

2.2 Site Description and Ownership

The existing data centre is located at 90 Peter Brock Drive Eastern Creek. The real property description of the existing site is Lot 34 in DP 1131779, and has a total area of approximately 3.5 hectares. The site is owned by DCI's parent company, Ninezero DC Sub TCI Pty Ltd as trustee for NineZero DC Sub Trust I.

The proposed expansion site comprises 3 additional lots, including (see **Figure 2.3**):

- Lots 32 and 33 in DP 1140168; and
- Lot 25 in DP 1122038.

DCI has recently acquired these additional lots. Lots 32 and 33 are located immediately to the west of the existing data centre site fronting Raceway Place, and comprise an area of approximately 0.45 hectares. Lot 25 is located immediately to the south-east of the existing data centre site fronting Peter Brock Drive, and has an area of approximately 0.15 hectares.

The combined site, including the existing data centre lot and expansion area lots (referred to herein as the site), has a total area of approximately 4.1 hectares.



Figure 2.2: Raceway Precinct Plan (Source: Raceway Precinct Plan)

(Nb. The conceptual road shown within the site on the precinct plan has since been constructed to the west of the site)



Figure 2.3: Aerial Photo and Lot Details (Source: Sixmaps)

2.3 Land Use

Land use on the proposed expansion lots currently comprises existing light industrial uses, which have all been developed since around 2010 (see **Figure 2.3**). Specific uses on each of the expansion lots include:

- Lot 32 – occupied by Cargo King, which undertakes warehousing and distribution for its logistics and freight business, with ancillary office;



- Lot 33 – occupied by Pozitive Sign and Graphic Supplies, which undertakes warehousing and distribution for its commercial printing and sign making supplies business, with ancillary office; and
- Lot 25 – occupied by Thompson Controls, which undertakes warehousing and distribution for its engineering and instrument controls business, with ancillary office.

Land use surrounding the site includes:

- North – Peter Brock Drive and existing industrial development within the Raceway Precinct, beyond which is the M4 Motorway and industrial areas of Huntingwood and the Great Western Highway;
- East – existing industrial development within the Raceway Precinct, beyond which is Peter Brock Drive and Auto Place, and open space regulated under the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (Western Parkland City SEPP)³;
- South – existing industrial development within the Raceway Precinct, and Prospect Nature Reserve to the south and south-east. A 132kV high voltage Endeavour Energy electricity transmission line is located immediately to the south of (and partly within) the site; and
- West – Raceway Place and existing industrial development within the Raceway Precinct, beyond which is the Sydney Motorsport Park and Karting Raceway.

There are no sensitive receivers in the vicinity of the site. The closest residential receivers are located in Blacktown and Prospect more than 1 kilometre to the north-east, beyond the M4 Motorway and the Great Western Highway.

Prior to development of the Raceway Precinct, the site had been used predominantly for agricultural purposes (mainly grazing).

2.4 Existing Environment

The site has a moderately sloping topography, sloping down to the north, north-west and north-east. Site elevation ranges from about 83.5 mAHD at the southern boundary, to approximately 70.5 mAHD in the north-western corner and approximately 75.6 mAHD in the north-eastern corner.

There are no defined watercourses on or in close proximity to the site. There is a precinct stormwater detention basin located approximately 90 metres to the north-west of the site, which ultimately drains to Bungarribee Creek.

Prospect Nature Reserve is located immediately to the south-east of the site, with Prospect Reservoir itself located approximately 380 metres to the south-east (at the closest point). Prospect Nature Reserve is identified as a heritage item of State significance under the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (Western Parkland City SEPP)⁴.

The site and surrounds are predominately cleared and fully developed for modern industrial land use, and do not contain any remnant native vegetation (see **Figure 2.3**). Some planted landscaping is located within the sites, with all of this landscaping planted since approximately 2010.

2.5 Infrastructure and Services

Access and Road Network

The site has direct and extended frontage to Peter Brock Drive and Raceway Place, both of which form part of the internal road network of the Raceway Precinct.

³ Former *State Environmental Planning Policy (Western Sydney Parklands) 2009*

⁴ Former *State Environmental Planning Policy (Western Sydney Parklands) 2009*



Peter Brock Drive provides direct access to Reservoir Road to the east and Brabham Drive to the west. Both of these roads provide efficient access to Sydney's arterial road network, including the M4 and M7 Motorways and the Great Western Highway, without the need to transport through residential areas.

Stormwater Drainage

The site is serviced by precinct-wide stormwater infrastructure, including:

- a precinct wetland and bio-retention facility, located approximately 90 metres to the north-west of the site. This facility drains off-site to the north via a culvert under the M4, ultimately draining to Eastern Creek via Bungarabee Creek; and
- on-lot and in-road stormwater drainage pipes and management facilities, which drain to the precinct wetland and bio-retention facility.

The eastern part of the site does not drain to the precinct wetland and bio-retention facility, rather this relatively small part of the site drains to existing in-road stormwater infrastructure in Peter Brock Drive, and drains to the north-east.

Electricity

The data centre is currently serviced from the Quarries zone substation in Pemulwuy to the east of the site. The precinct is also supplied from the Arndell Park zone substation to the west of the site. Electricity supplies are reticulated through the precinct via underground mains.

A 60 metre wide Essential Energy 132kV electricity transmission line easement⁵ is located immediately to the south of the site, with part of the easement located within the site (see **Figure 2.3**). Electricity supplies for the expanded data centre are proposed to be sourced from this transmission line, via the proposed substation.

Other Services

The site is serviced by estate-wide reticulated infrastructure, including potable water, sewer, gas and telecommunications. These are adequate to service the needs of the existing data centre, with the exception of the gas services which are of insufficient capacity and currently cost prohibitive to service the full energy needs of the facility. The nearest suitable high pressure gas supply is located in Ferrers Road approximately 1.6 kilometres to the west of the site.

2.6 Description of the Existing Data Centre

The approved Eastern Creek Data Centre (SYD01) has a nominal total power consumption of 7.2MW and comprises the following key components:

- a data storage building with a total building area of approximately 10,145m² (and gross floor area of 7,070m²), including:
 - 3 data storage halls;
 - attached 2 level uninterruptible power supply (UPS) rooms serving each data hall; and
 - attached ancillary office, storage areas, workshops and amenities;
- a detached Emergency Power Generation (EPG) building;
- a detached 2 level central chiller plant building; and
- ancillary plant, services and facilities.

The layout of the approved facility is shown on **Figure 1.3**.

The data storage halls are the central component of the data centre, housing computers, servers and equipment for storage and distribution of electronic data.

⁵ The total width of the 'easement' is approximately 60 metres, although part of the infrastructure within Prospect Nature Reserve is not contained within a formal easement, and in other areas there are two easements.



Each of the three main data storage halls are serviced by an attached 2 level uninterruptible power supply (UPS) room, which provide immediate backup power to the data halls in the event of power failure.

The data storage building also accommodates ancillary office, storage areas, workshops and amenities, principally in the eastern area of the building.

The detached electrical power generator (EPG) building and 2 level central chiller plant building (including cooling towers) is located in the western area of the data centre site. It accommodates a bank of diesel generators for back-up power supply (4 x 2.2MW and 2 x 2MW generators, and a 50kW generator for the front-of-house). These are fuelled from underground diesel fuel tanks (2 x 70,000L tanks) installed adjacent to the building. The chiller plant building accommodates chillers and cooling towers required for system cooling requirements.

The data centre also provides a number of other ancillary services and utilities, including:

- rainwater tanks for cooling water supply, with a total approved storage capacity of 1,050,000L (ie. 7 x 150,000L above ground tanks in the western area of the site)⁶;
- fire sprinkler tanks and pump house, in the southern area of the site; and
- high voltage ring main substation kiosks, in the north-eastern area of the site.

The data centre includes a range of security installations, including:

- security fencing, including perimeter fencing (2.1m palisade/chain-wire fencing) and traffic and security bollards;
- sliding gates to control entry;
- a closed circuit TV security network;
- security lighting; and
- a comprehensive internal security authorisation system.

The facility is approved to operate 24 hours a day, 7 days a week, and provides employment for approximately 25 people (full time equivalents).

⁶ Six of these tanks have been installed to date.



3 PROPOSED DEVELOPMENT

3.1 Development Summary

DCI is proposing to expand the Eastern Creek Data Centre. The main components of the proposed development are outlined in **Table 3.1**, and shown on **Figures 3.1 to 3.6**. The full set of architectural design plans is attached as **Appendix B**, and the landscape plans are attached as **Appendix C**.

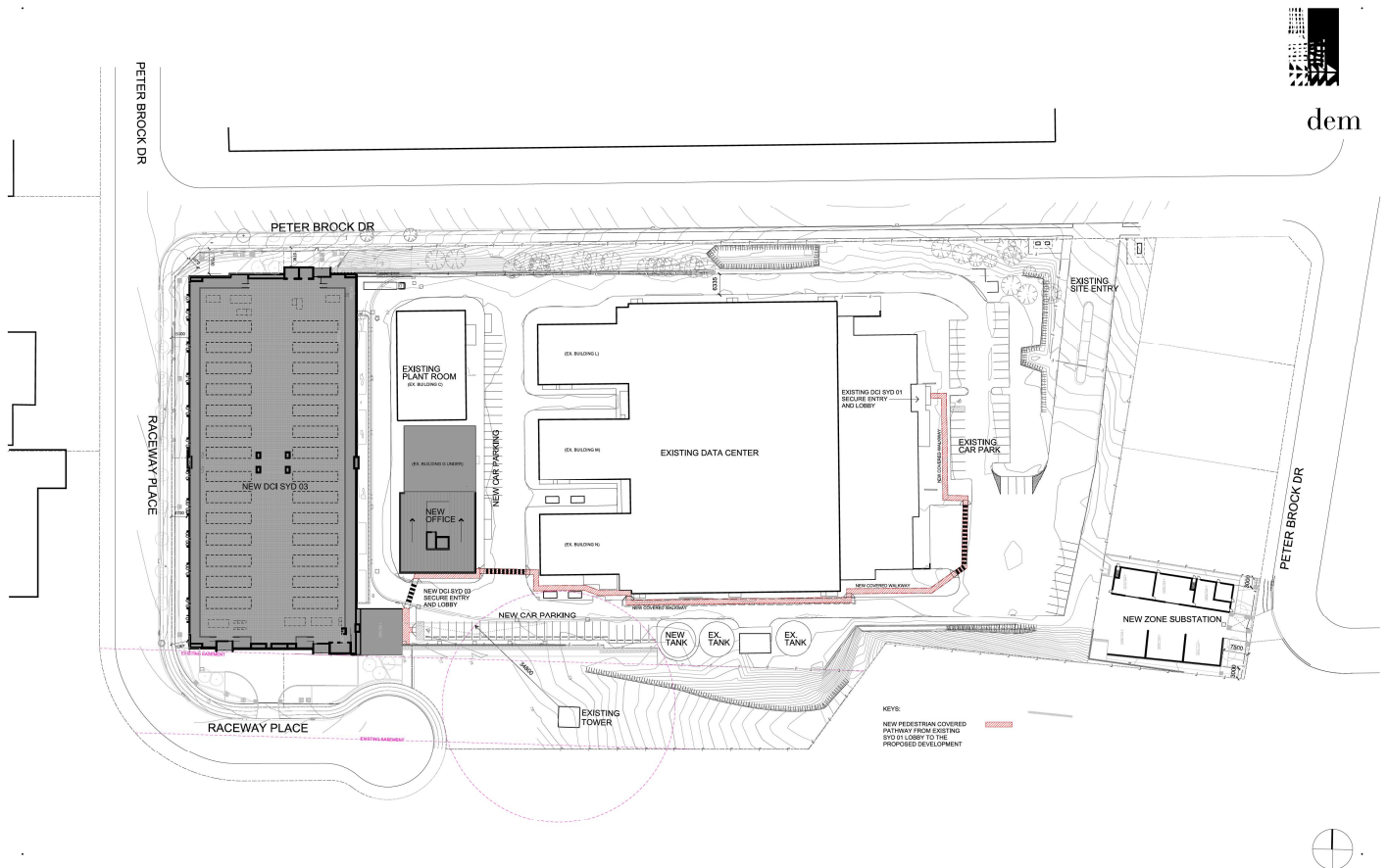
Table 3.1: Eastern Creek Data Centre Expansion Development Summary

Development Summary	Expansion of the DCI Eastern Creek Data Centre, including: • site subdivision (consolidation); • demolition, clearing and earthworks; • expansion of the data centre, including a new 4 level data storage building, new 4 level ancillary office building and new zone substation; and • ancillary development including car parking, infrastructure provision and landscaping
Proposed Use	Data storage, with ancillary office and services
Subdivision	Consolidation of the existing data centre site (ie. Lot 34 in DP 1131779) with the proposed expansion lots (ie. Lots 32 and 33 in DP 1140168, and Lot 25 in DP 1122038), to create a single lot
Demolition, Clearing and Earthworks	Demolition of existing industrial buildings and structures on the expansion lots, and some existing structures on the existing data centre site, to facilitate the proposal. Minor clearing of existing landscaping on the site to facilitate the proposal. Bulk and detailed earthworks across the site to facilitate the development
Facility Development	Construction and operation of the expanded data centre, including: • a new 4 level data centre building to the west of the existing data centre, with a gross floor area (GFA) of approximately 10,865 m²; • a new 4 level ancillary office building adjacent to the new data centre building, with a GFA of approximately 2,345 m²; • a new zone substation to the south-east of the existing data centre; • some modifications to the existing data centre to facilitate the expansion; and • ancillary services
Power Consumption	The existing facility comprises 3 data halls with a total power consumption of approximately 7.2 megawatts (MW). The proposed expansion would comprise an additional 10 data halls with additional power consumption of 32MW (approximate) (ie. total approx. 40MW)
Landscaping	Implementation of site landscaping consistent with existing site and estate landscaping
Signage	No significant signage proposed, other than directional signage
Staging	The facility may be constructed over a number of stages
Hours of Operation	24 hours a day, 7 days a week
Capital Investment Value	\$330 million (exc. GST)
Employment¹	Construction: 150 Operation: 100
Infrastructure and Services	
Access and Roads	Access to the data centre would be provided via the existing driveway from Peter Brock Drive, as well as a new access driveway for trucks from the Raceway Place cul-de-sac. Access to the substation would be provided via a driveway to this site from Peter Brock Drive. No external roadworks are required
Stormwater	On-site stormwater collection and treatment, with connection to the existing estate infrastructure in Peter Brock Drive and Raceway Place



Electricity	Construction of a new zone substation to the south-east of the existing data centre to service the expanded facility. Off-site works to connect the zone substation to Endeavour Energy's 132kV high voltage electricity transmission line to the south of the site would be undertaken under separate approval.
Back-up Diesel Generators	The existing facility has 4 x 2.2MW and 2 x 2MW generators, and a 50kW generator for the front-of-house. The proposed expansion would include an additional 27 x 2.65MW generators. Diesel fuel storage would increase from the existing 140,000 litres to approximately 685,000 litres
Potable Water, Sewer and Telecoms	Extension and connection to existing mains in Peter Brock Drive and/or Raceway Place, and reticulation through the site

1 Estimate



DA ISSUE

DCI Eastern Creek Data Centre (SYD 03) - 90 Peter Brock Drive, Eastern Creek NSW

Site Plan

13/04/22

1500

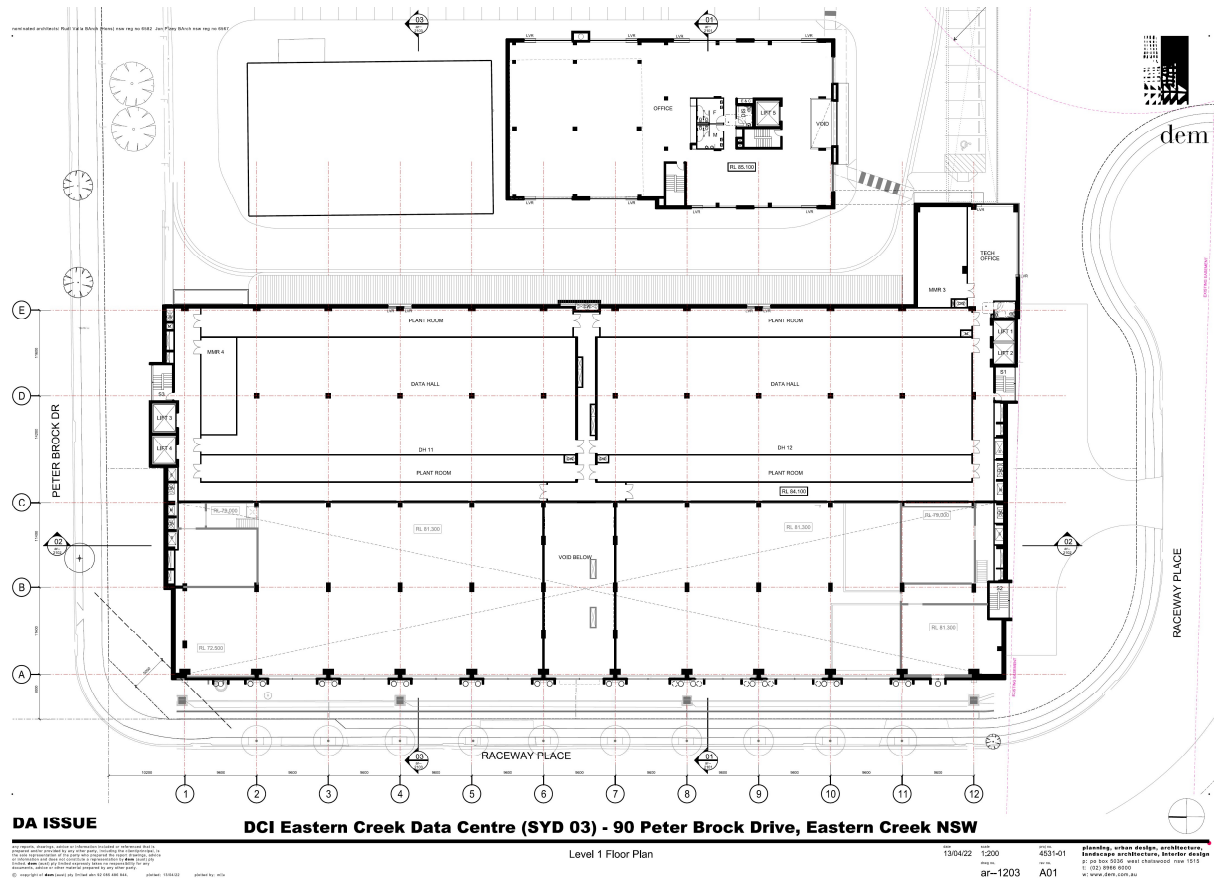
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ar-0101

A01

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landscape architecture, interior design
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t: (02) 9558 8000
w: www.dem.com.au

Figure 3.1: Site Plan (Source: DEM)

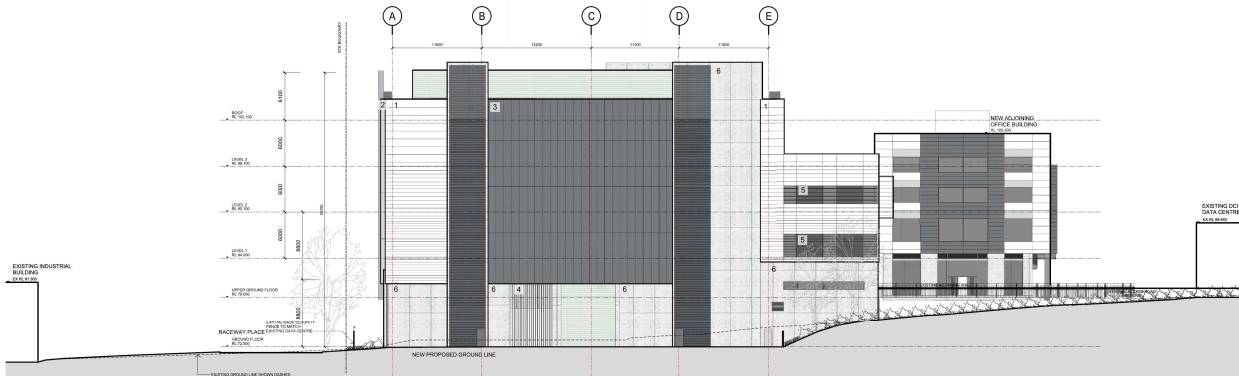




Environmental Impact Statement Eastern Creek Data Centre Expansion

unclassified architecture: Built Media Studio (Sydney) view no. 8582 Jan-Peter Brock view no. 8587

legend	
1	NON-COMBUSTIBLE PREFINISHED WALL CLADDING - OFF WHITE
2	NON-COMBUSTIBLE PREFINISHED WALL CLADDING - GREY
3	NON-COMBUSTIBLE PREFINISHED WALL CLADDING - DARK GREY
4	ARCHITECTURAL METAL SCREEN - NATURAL WOODS
5	CLEAR VISION GLASS - NATURAL ANODISED FRAMES
6	OFF FORM CONCRETE



DA ISSUE

DCI Eastern Creek Data Centre (SYD 03) - 90 Peter Brock Drive, Eastern Creek NSW

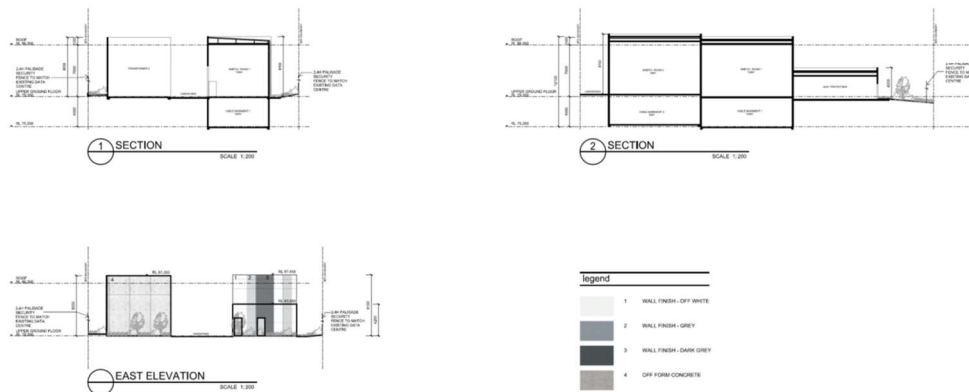
data hall elevation
south

13/04/22 1200 4531-01
ar-2604 A01

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landscape architecture, interior design
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Figure 3.4: Representative Elevations – Ancillary Office Building (Source: DEM)

unclassified architecture: Built Media Studio (Sydney) view no. 8582 Jan-Peter Brock view no. 8587



DA ISSUE

DCI Eastern Creek Data Centre (SYD 03) - 90 Peter Brock Drive, Eastern Creek NSW

Sections and Elevation
Zone Substation

20/04/22 1200 4531-01
ar-2110 A01

planning, urban design, architecture,
landscape architecture, interior design
P.O. Box 8538, West Chiswick NSW 1515
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W: www.dem.com.au

Figure 3.5: Representative Elevations – Substation (Source: DEM)



Figure 3.6: Representative Perspectives (Source: DEM)



The proposal involves the consolidation of the existing data centre site (ie. Lot 34 in DP 1131779) with the proposed expansion lots (ie. Lots 32 and 33 in DP 1140168, and Lot 25 in DP 1122038), to create a single lot.

The consolidated lot would have a total area of approximately 4.1 hectares, with frontage to Peter Brock Drive to the north and east, and Raceway Place to the west. The consolidated lot would retain the existing easements that affect the site.

PROPOSED LOT 300
4.094ha

PETER BROCK DRIVE (21.5 WIDE)

PETER BROCK DRIVE (21.5 WIDE)

RACEWAY (21.5 WIDE)

NOTES:
THIS PLAN HAS BEEN PREPARED FOR DEVELOPMENT APPLICATION PURPOSES. EXISTING EASEMENTS, RESTRICTIONS AND COVENANTS HAVE NOT BEEN SHOWN. SEE PLAN REFERENCE 210021-2 PREPARED BY TOTAL SURVEYING SOLUTIONS FOR FULL SITE DETAILS.

Symbol	Description
[E]	EASEMENT FOR SWITCHING STATION 5.5 WIDE (DP1142552)
[F]	EASEMENT FOR PADMOUNT SUBSTATION (DP1122038)
[G]	RESTRICTION ON THE USE OF LAND (DP1122038)
[J]	EASEMENT FOR TRANSMISSION LINE 25 WIDE (R366397 & 0248565 IN DP600745)
[K]	EASEMENT FOR TRANSMISSION LINE 42.67 WIDE (BK2796 No.897)

Lot	Area (ha)	Dimensions (m)	Bearings
32	2.000	108.47	40°
33	2.094	108.47	40°
300	4.094	108.47	40°

Figure 3.7: Proposed Plan of Consolidation (Source: William Hamer)

The proposal would require the demolition of existing industrial buildings and structures on the expansion lots, as well as demolition of some existing structures on the existing data centre site, to facilitate the proposal.

All of the structures to be demolished have been constructed since the development of the Raceway Precinct (circa 2010), and have been used for standard, non-hazardous, warehousing and light industrial land uses since their development. As such, the demolition is unlikely to involve removal of any significant quantities of hazardous substances.

The proposal does not require any significant vegetation clearing, although some clearing of some existing landscaping on the site would be undertaken to facilitate the proposal. The trees to be removed are shown on the landscape plans in **Appendix C**, and include approximately 35 medium to large trees, and some additional shrubs. All of this vegetation has been planted as landscaping



as part of the development of the Eastern Creek Data Centre and the development on the expansion lots, and is all relatively young, having been planted since the development of these facilities (circa 2010).

Bulk and detailed earthworks would be undertaken across the expansion site to facilitate the development. The earthworks would be undertaken on a cut to fill basis, however the works are expected to require export of approximately 14,650m³ of excess fill material (for beneficial reuse off-site).

Relatively low masonry retaining walls would be constructed along parts of the site boundaries, with varying heights up to approximately:

- 1 metre along the northern side of the substation site;
- 1 to 1.5 metres along the southern side of the substation site (existing retaining wall to be retained and/or modified); and
- 1.5 to 2 metres along the southern side of the underground rainwater tank in the southern area of the site (this wall would form part of the proposed rainwater tank).

An additional retaining/shoring wall would be constructed to the east of the SYD03 data storage facility building, although this would generally not be visible from the public domain. The existing retaining wall along part of Peter Brock Drive (North) would be retained, with some modification/reinstatement to accommodate the proposed building works.

Demolition, clearing and earthworks would be undertaken in accordance with the Waste Management Plan for the project (see **Appendix R**).

3.4 Facility Description

The proposed data centre expansion (ie. SYD03) comprises a new 4-level data storage building, a new 4-level ancillary office building, a new zone substation, as well as some alterations to the existing data centre (SYD01) to accommodate the new facilities.

If the proposed data centre expansion is approved and acted upon, DCI would not proceed with the approved 8 storey expansion (SPP-19-00009) (ie. SYD02).

A development schedule outlining the building elements, and the associated areas and heights, is presented in **Table 3.2** below. The architect's design statement is attached as **Appendix F**, and an assessment of the facility's compliance with the Building Code of Australia (BCA) is attached as **Appendix G**.

Table 3.2: Eastern Creek Data Centre Expansion Development Schedule

Aspect	Detail
Site Area (m ²)	40,940
Building Areas (m ²) – New SYD03 Data Centre	
- Data Storage	8,140
- Office, Corridor, Amenity	2,725
- Plant and Equipment	11,550
- Gross Floor Area ¹	10,865
- Total Building Area ²	22,415
Building Areas (m ²) – New Ancillary Office Building	
- Office, Corridor, Amenity	2,345
- Plant and Equipment	160
- Gross Floor Area ¹	2,345
- Total Building Area ²	2,505



Aspect	Detail
Building Areas (m ²) – New Substation	
- <i>Plant and Equipment</i>	300
Gross Floor Areas ¹ (m ²)	
- <i>Proposed SYD03 and Ancillary Office Building</i>	13,210
- <i>Existing SYD01</i>	7,070
- <i>Overall Gross Floor Area</i>	20,280
Floor Space Ratio (%)	50%
Site Cover (%) (inc. awnings)	44%
Hardstand Area (m ²) (heavy + light duty)	13,500
Landscaping Area (m ²)	11,050 (28%)
No. of Levels	
- <i>New SYD03 Data Centre</i>	4
- <i>New Ancillary Office Building</i>	4
- <i>New Substation</i>	1
- <i>Existing SYD01 Data Centre</i>	1-2
- <i>Approved SYD02 Data Centre</i> ³	8
Max. Building Height (m)	
- <i>New SYD03 Data Centre</i> ⁴	35.7 (RL 108.2m)
- <i>New Ancillary Office Building</i>	21.1 (RL 100.3)
- <i>New Substation</i>	8 (RL87.4)
- <i>Existing SYD01 Data Centre</i>	14.3 (RL 91.6)
- <i>Approved SYD02 Data Centre</i> ³	54.0 (RL 133m)
Min. Building Setbacks (m)	
- <i>Peter Brock Drive (East)</i>	7.5
- <i>Peter Brock Drive (North)</i>	7.5 ⁵
- <i>Raceway Place (West)</i>	5.3 ⁶
- <i>Raceway Place (South)</i>	8.3
Car Parking Spaces	
- <i>Existing Spaces</i>	43
- <i>Proposed Spaces</i>	57
- <i>Total Spaces</i>	100
	(inc. 2 disabled)

1 Excludes plant and equipment (as per the definition in the *Standard Instrument – Principal Local Environmental Plan*)

2 Includes plant and equipment

3 SYD02 would not be constructed if SYD03 is approved and acted upon

4 Excluding the SYD03 lift overrun – this section of the building has a height of 36.7m

5 A small area for the SYD03 lifts would have a lower setback of 5.8m

6 Some ancillary components would have a lower setback of 4.7m

New SYD03 Data Storage Building

The new 4-level data storage building would be constructed to the west of the existing data storage building, adjacent to Raceway Place.

The lower two levels of the building (Lower Ground/Ground and Level 1) would comprise mainly plant and equipment and services (including back-up diesel generators), along with data halls on the Level 1 mezzanine. The upper two levels (Levels 2 and 3) would accommodate data halls, as well as ancillary services, plant and equipment required for the data storage equipment. Relatively small tech offices would be located at the southern end of the building on the Ground Level, Level 1 and Level 2.

Additional plant and equipment would be located on the rooftop, located behind a parapet wall and inset screening. This plant and equipment would include:

- air-cooled chillers;



- mechanical power plant;
- outside air processing units;
- fans, pumps and pipework; and
- lift motor rooms, which have been integrated into the building design.

Some additional services and infrastructure would be installed below the Lower Ground level, including rainwater tanks and diesel tanks for the generators.

The building would comprise a mix of materials and finishes to ensure a high quality design, including off-form concrete, varying non-combustible prefinished wall claddings, architectural metal screening/louvres and performance glazing. External building services (eg. exhausts for the generators) have been integrated into the architectural design of the facility.

New Ancillary Office Building

The new 4-level ancillary office building would be constructed to the east of the new data storage building, on the footprint of the existing EPG Building.

The lower level of the building (Ground Level) would accommodate existing and new plant and equipment, as well as relatively small areas of ancillary office, storage and services.

The three upper levels (Levels 1, 2 and 3) would accommodate ancillary offices and amenities.

The lift motor room and ancillary air handling plant and equipment would be located on the rooftop, and would be integrated into the building design and/or located behind screening.

The building would comprise a mix of materials and finishes to ensure a high quality design, with materials and finishes similar to the adjacent proposed SYD03 data centre building, including off-form concrete, varying non-combustible prefinished wall claddings and performance glazing.

A pedestrian bridge connecting the ancillary office building to the SYD03 data centre building would be constructed from Level 3 of the office building.

New Zone Substation

The new zone substation would be constructed on Lot 25 to the south-east of the existing data storage building, fronting Peter Brock Drive (east).

The substation would be connected to Endeavour Energy's 132kV high voltage electricity transmission line immediately to the south of the site, within the Prospect Nature Reserve. The off-site works necessary to connect the substation to the 132kV transmission line are discussed in Section 3.9.2 below (and shown on **Figure 3.9**), and would be subject to separate approval.

The substation would comprise a number of transformers, switchgear, circuit breakers and associated plant and equipment to step the incoming 132kV electricity down to 33kV, which would then service the site. The incoming and outgoing electricity supplies would be provided via underground cabling.

The substation would comprise two separate structures. A series of blast walls would be constructed in the southern area of the substation site to accommodate and protect the transformers. These blast walls would be constructed of off form or precast concrete.

Switchgear and associated plant would be accommodated within a separate single level building (plus basement for cables) in the northern part of the substation site. This building would be constructed of painted concrete or blockwork.



Ancillary Development

The proposal would include ancillary development to integrate the new data storage facilities with the existing data centre facility, as well as the provision of related infrastructure and services, including:

- additional car parking spaces within the site;
- additional internal pedestrian pathways;
- underground electrical and other services and infrastructure to facilitate the proposal; and
- additional external plant and equipment, including a 150kL above ground sprinkler tank adjacent to existing tanks in the southern part of the site.

3.5 Staging

The key elements of the proposal would be developed in a single stage, including the SYD03 data storage building shell and substation.

However the internal fitout of the data halls, ancillary office building and ancillary components may be staged in accordance with demand. The indicative staging for the development is shown on **Figure 3.8**, and would include:

- Stage 1 – SYD03 data storage building and substation;
- Stage 2 – internal fitout of SYD03 data storage building;
- Stage 3 – ancillary office building; and
- Stage 4 – pedestrian bridge connecting the ancillary office building and data storage building.

It is noted that these stages may be undertaken concurrently.

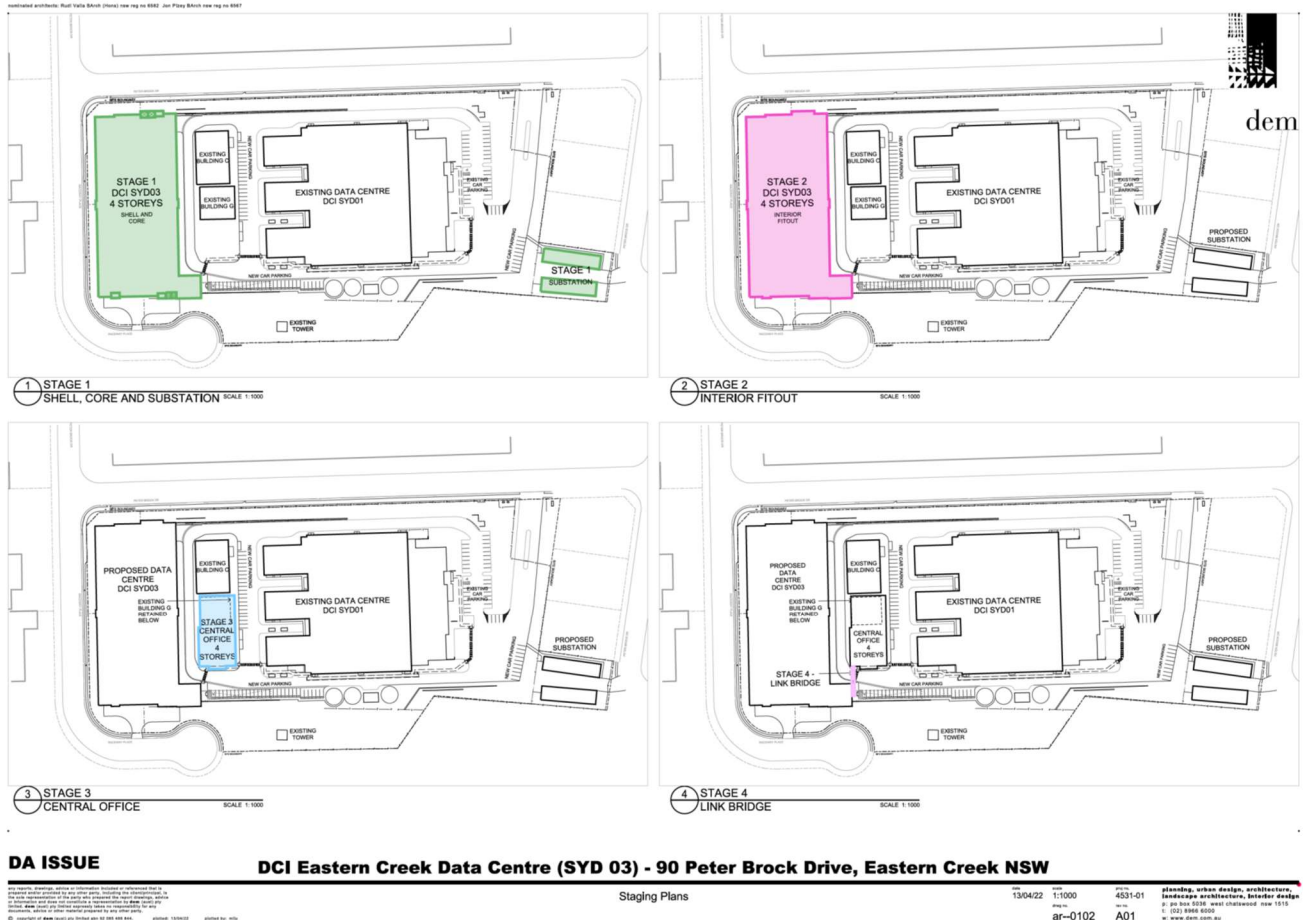


Figure 3.8: Indicative Staging Plan (Source: DEM)



3.6 Hours of Operation

As with the existing data centre, the expanded facility would operate up to 24 hours a day, 7 seven days a week, 365 days a year.

Construction works for the development would be undertaken in accordance with the hours as stipulated in EPA's *Interim Construction Noise Guideline*, namely:

- 7:00am to 6:00pm Monday to Friday;
- 8:00am to 1:00pm Saturdays; and
- no work on Sundays or public holidays.

Construction works that are inaudible at surrounding receivers may be undertaken outside these times.

3.7 Capital Investment

The development has a total capital investment value of approximately \$330 million (exc. GST).

3.8 Employment

The expanded data centre is expected to generate employment for approximately 100 highly skilled IT engineers, technicians and administration personnel (full-time equivalents), as well as maintenance and security personnel.

The main construction phase of the project (ie. Stages 1 and 2) is expected to take approximately 24 months to complete, and would generate approximately 150 full-time equivalent construction jobs. Up to approximately 50 construction workers would be located on site at any one time during peak times.

3.9 Infrastructure and Services

3.9.1 Access and Road Network

Site Access and Internal Circulation

Main vehicular access to the expanded data centre would be provided via the existing data centre driveway from Peter Brock Drive. Access is controlled via sliding security gates and a central median.

The existing access driveway provides a single access for all vehicles (cars and trucks), although internal car parking areas are separated from heavy vehicle service areas. Internal circulation is provided around the facility via existing internal roads, with circulation generally in a clockwise direction around the facility.

A second minor access for service vehicles is proposed to be provided to the cul-de-sac on Raceway Place, to the south of the proposed SYD03 data storage building, with access controlled via sliding security gate.

Access to the proposed substation would be provided via a driveway from Peter Brock Drive (East), in a similar location as the existing driveway servicing this lot.

The proposal involves minor changes to the internal service roads and fire access road to reflect the revised layout of the facility. The internal layout has been designed to allow all cars and trucks to enter and exit the site in a forward direction.



Additional pedestrian accesses would be provided to connect the various facilities on the site, including a new:

- elevated pedestrian bridge connecting Level 3 of the ancillary office building to the new SYD03 data storage building;
- covered ground level pathway connecting the existing SYD01 data storage facility with the new SYD03 data storage building and ancillary office building;
- ground level pathway connecting the SYD03 data storage facility to Peter Brock Drive (North); and
- internal ground level pathway connecting the new substation to the main data centre site.

Parking and Loading

The proposal would maintain the existing car park located adjacent to the SYD01 ancillary office in the eastern area of the site, which provides 43 parking spaces (including 1 disabled parking space).

The proposal would provide 57 additional car parking spaces within the site, including:

- 5 additional spaces to the south-east of the existing car park;
- 23 spaces to the east of the new ancillary office building; and
- 29 spaces to the south of the new ancillary office building.

Informal parking would also be available on the hardstand within the substation site. In total, the expanded facility would provide 100 formal car parking spaces. All parking spaces would be appropriately sealed and linemarked in accordance with Australian Standards (AS2890).

The proposal would maintain the existing loading facilities at the eastern end of the existing SYD01 data storage building. Additional loading facilities to service the SYD03 data centre building would be provided to the south and north-east of the new data centre building.

The loading facilities have been separated from the car parking areas to avoid conflict with light vehicle traffic and pedestrians.

External Roadworks

No external roadworks are required for the project, other than removal of existing driveway crossings on the expansion lots, and construction of the proposed new driveways.

3.9.2 Electricity

Electricity servicing for the project has been designed in consultation with Endeavour Energy.

In summary, the proposal involves construction of a new zone substation to the south-east of the existing data centre to service the expanded facility. The substation is described above in Section 3.4.

The substation would be connected to Endeavour Energy's 132kV high voltage electricity transmission line immediately to the south of the site, within the Prospect Nature Reserve. These off-site connection works are shown on **Figure 3.9** for information, however it is noted that the off-site connection works would be undertaken under separate approval (under Part 5 of the EP&A Act), and consequently do not form part of the proposed development.

DCI is currently progressing the Part 5 approval in consultation with Endeavour Energy and NSW National Parks and Wildlife Service (the landowner of Prospect Nature Reserve), with the approval process running concurrently with the Part 4 approval process for the data centre expansion. DCI would not commence construction of the data centre expansion until the Part 5 approval is granted.

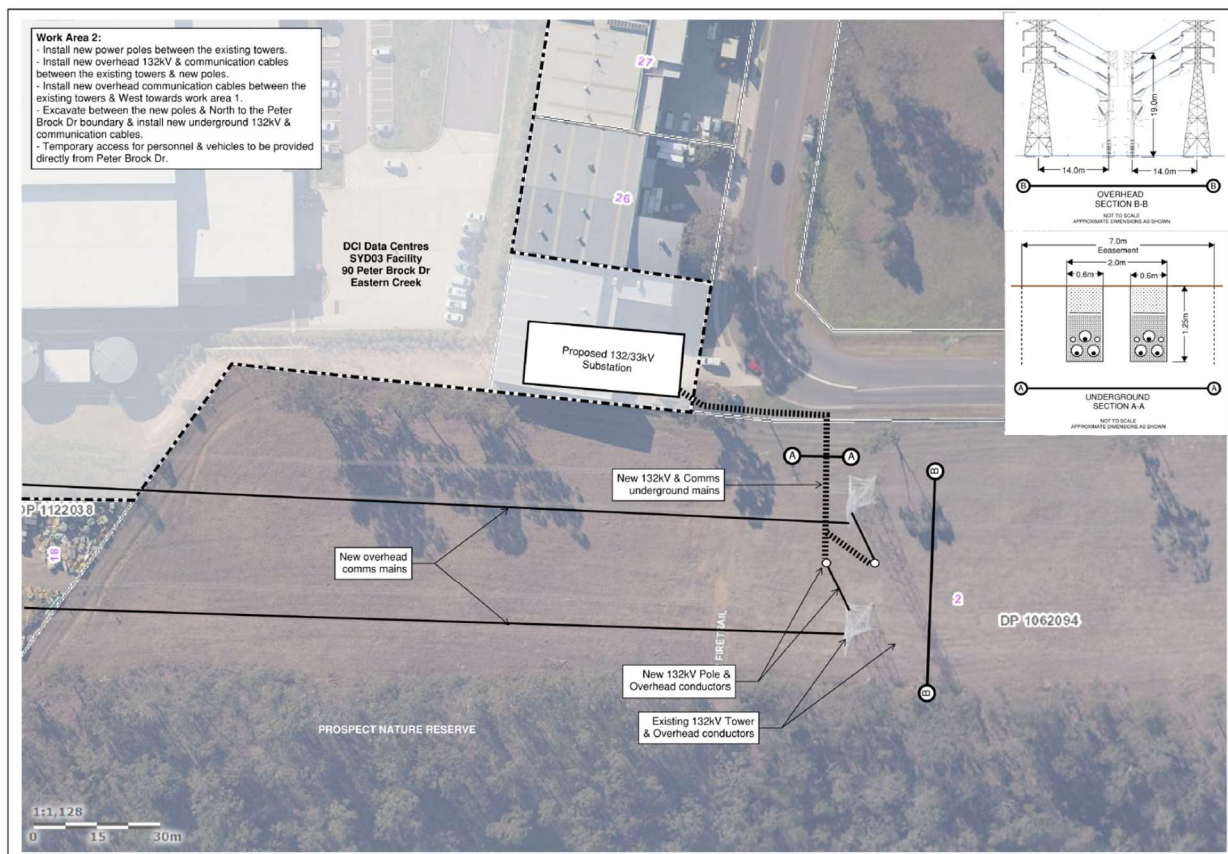


Figure 3.9: Electricity Servicing Strategy (Source: DEP Consulting)

Two 33kV electricity supplies would be provided from the proposed substation to service the SYD03 data centre. The 33kV supplies would be provided via underground electrical cabling, which would provide power to the facility via a number of transformers.

As discussed in Section 3.10 below, the project includes a number of passive and active energy savings measures to reduce energy use associated with the facility.

3.9.3 Back-up Power Generation

The existing data centre provides two forms of back-up power in the event of a power outage, including:

- batteries located in the UPS rooms, which provide instantaneous back-up power for short term outages; and
- diesel generators in the EPG building, which provide ongoing back-up power during outages.

The existing SYD01 diesel generators provide a total of approximately 13MW of back-up power capacity, provided via 4 x 2.2MW and 2 x 2MW generators, and a 50kW generator for the front-of-house.

The proposed expansion would include an additional 27 x 2.65MW diesel generators for back-up power generation, which would be located on the lower levels of the proposed SYD03 data centre building.

Diesel fuel storage would increase from the existing 140,000 litres to approximately 685,000 litres. The existing underground tanks (2 x 70,000 L) are located adjacent to the existing Building G, and



the new underground tanks (5 x 109,000 L) would be located beneath the SYD03 data centre building.

The generators would only operate during power outages, as well as during routine testing. In the case of a power outage (of more than 3 seconds), the generators would run for a period of at least 15 minutes, or the power outage duration plus 15 minutes.

The testing regime would include:

- Annual Testing – up to 6 generators operating at a time on load for up to 6 hours across 5 separate tests; and
- Monthly Testing – up to 2 generators operating at a time on load for up to 1 hour each.

Monthly testing would occur for up to approximately 168 hours per year⁷, while annual testing would occur for up to approximately 30 hours⁸. All testing would be undertaken between the hours of 7am and 6pm, Monday to Saturday.

The plant and equipment for the expanded facility would also include storage and use of Lithium-ion batteries (or similar technology) for instantaneous back-up power during short term outages. These batteries would be located within, and form part of, the containerised Independent Power Block (IBP) units located within the lower ground levels of the SYD03 data storage building. Approximately 14 x 34.6kWh batteries would be located within each IBP, and there would be around 31 IBP units within the facility. The IBPs would be fully containerised units, serviced by gas fire suppression in accordance with BCA requirements and applicable standards.

DCI has considered a number of alternative technologies to provide back-up power generation, which is summarised in Section 7.2. As outlined in that section, alternative back-up power generation technologies are not considered to be technically and commercially suitable for the proposed facility at this time, although green hydrogen generators may be suitable in the future as the technology becomes viable. DCI will continue to re-evaluate the viability of such technologies at future stages and for asset life.

3.9.4 Stormwater Drainage

Stormwater management for the development has been designed in a manner that is consistent with Council's standards and the precinct stormwater strategy. The proposed stormwater management strategy is detailed in the Soil and Water Management Plan (see **Appendix H**), and would include (generally from upstream to downstream):

- OceanSave first flush devices (2 units) to treat roof runoff from the new SYD03 data storage building prior to storage in rainwater tanks;
- rainwater harvesting tanks (at least 2.9 ML total volume) draining part of the roofs, including:
 - a 150 kL tank beneath the SYD03 data storage building, for irrigation and toilet flushing;
 - two tanks with a combined volume of 2 ML beneath the SYD03 data storage building, for chiller units; and
 - a 900 kL tank below the proposed southern car park, to replace the six existing SYD01 tanks that would be demolished to make way for the SYD03 data storage building;
- primary treatment to parking and hardstand areas via the provision of OceanGuard (or equivalent) pit inserts;

⁷ Based on 2 generators being tested at a time, or up to 14 separate tests in total per month, at 1 hour each test.

⁸ Based on 6 generators being tested at a time, or up to 5 separate tests in total per year, at 6 hours each test



- secondary/tertiary treatment to roof and hardstand areas via the provision of treatment tanks containing StormFilter cartridges (or equivalent) gross pollutant traps, and extension of the existing bio-retention basin servicing the SYD01 facility;
- on-site detention and treatment for the substation site via a Humeceptor device; and
- stormwater pits, pipes and drains to direct stormwater, prior to discharge to the estate stormwater system.

The key elements of the strategy are shown on **Figure 3.10**.

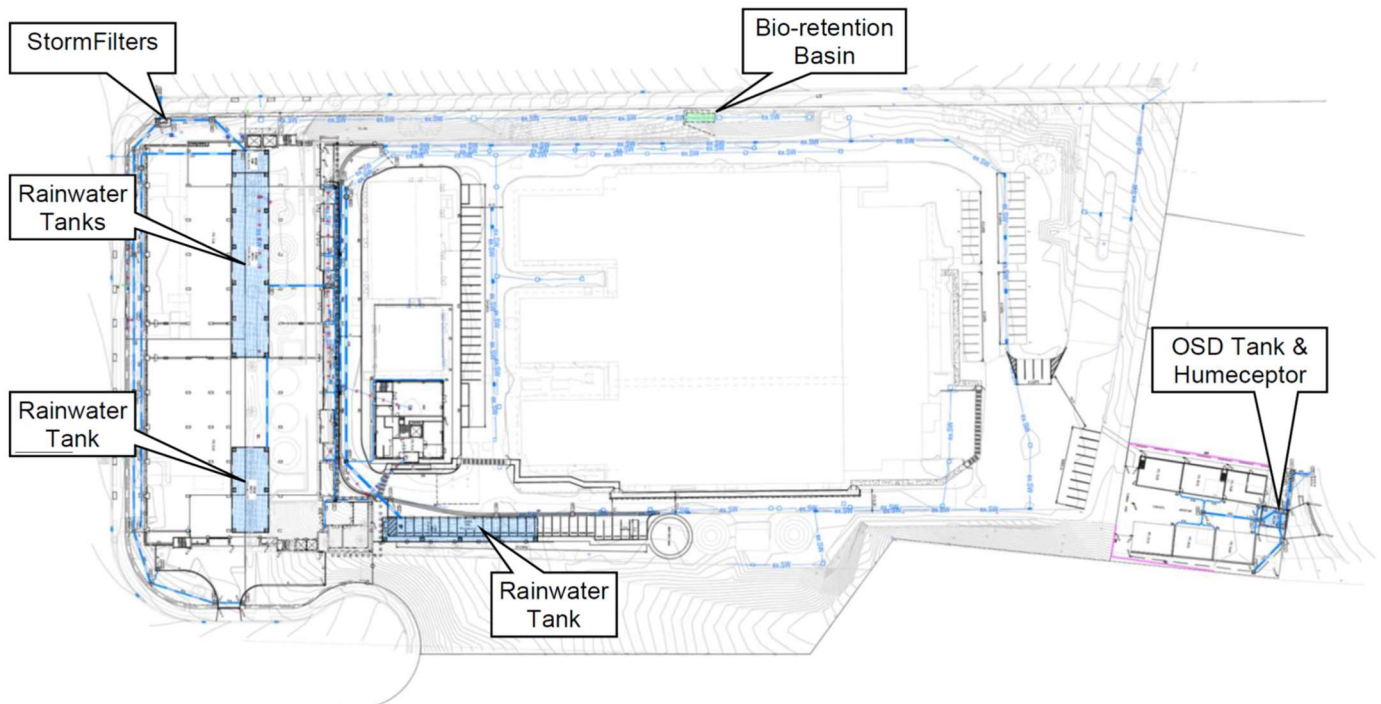


Figure 3.10: Stormwater Management Strategy (Source: Calibre)

It is noted that on-site detention (OSD) is not required for the majority of the site, as precinct-based OSD has been provided for the Raceway Precinct as part of the wider estate works. However, the substation site does not drain to the precinct basin, and as such OSD is proposed for this part of the site.

Stormwater management is discussed further in Section 6.2.

3.9.5 Other Services

Other services required for the expanded data centre (including potable water, sewer and telecommunications) are already available from existing underground reticulated mains in Peter Brock Drive and/or Raceway Place, and would be adequate to service the proposed development.

The project does not involve connection to a reticulated gas supply.

As discussed in Section 3.10 below, the development includes a number of water savings measures which would significantly reduce potable water use on the site.



3.10 Resource Use Management

3.10.1 Energy Conservation

The expanded data centre would include a number of energy savings measures, including:

Active measures:

- centralised chilled water system;
- adiabatic chillers for the generation of chilled water;
- optimisation of IT operation and indoor supply air temperature;
- dedicated dehumidification units;
- reuse of return chilled water for tempering outside air;
- equipment selections optimised for the demand needs;
- variable speed drives (VSDs) on compressors, pumps and fans;
- heat recovery variable refrigerant volume/flow (VRV/VRF) air conditioning units to serve the offices spaces;
- Energy management System (EMS), providing monitoring and analytics on all energy consuming equipment;
- energy efficient lighting and lighting controls; and
- energy efficient hot water systems;

Passive measures:

- optimisation of building orientation to minimise solar heat gain;
- complying with all aspects of BCA Section J;
- high performance glazing and external shading;
- elimination of glazing to IT spaces;
- optimising IT operation temperatures; and
- hot aisle containment, separating heat generated at the IT equipment from supply air.

Further detail on these measures is provided in the Energy and Greenhouse Gas Assessment (see **Appendix I**), and the energy and emissions savings associated with the measures are discussed in Section 6.4.

3.10.2 Water Conservation

The existing data centre includes a number of water savings measures, including:

- harvesting of roof rainwater for cooling tower make-up water;
- waterless urinals; and
- water efficient (4-star) fixtures to all sanitary fixtures.

These measures, particularly the rainwater harvesting measures for cooling tower make-up, have significantly reduced potable water use associated with the existing data centre.

The proposed expansion would include a number of additional measures, including:

- additional rainwater tanks (see Section 3.9.4), providing a total volume of approx. 2.9 ML;
- installation of water efficient (4-star) fixtures to all sanitary fixtures; and
- adoption of water efficient landscaping techniques, including:
 - draining hardstand areas to soft landscaping areas where feasible and practical;
 - incorporating water efficient native landscaping species and mulched beds; and
 - installation of water efficient irrigation systems.

3.11 Landscaping

Landscaping would be undertaken in accordance with the Landscape Plans prepared for the proposed development by Studio IZ (see **Appendix C**). Refer to Section 6.1 for detail on the landscaping principles.



The landscaping includes provision of additional street trees along the road frontages, in a manner that is consistent with existing street trees in the estate. Landscaping within the site would be implemented adjacent to each of the proposed building elements, including the SYD03 data storage building, ancillary office building and substation. The landscaping within the site would predominately comprise shrubs and groundcovers to provide for casual surveillance and security, with approximately 27 feature trees to the north and south of the SYD03 data storage building.

3.12 Fencing, Lighting and Security

The existing data centre includes a range of security installations, including:

- security fencing, including perimeter fencing (2.4m palisade/chain-wire fencing) and traffic and security bollards;
- sliding security gates to control entry;
- a closed circuit TV security network;
- security lighting; and
- a comprehensive internal security authorisation system.

These measures would be maintained and updated as required for the expanded data centre, with security fencing extended around the expansion lots. As with the existing fencing, palisade fencing would be used on the street frontages and the side boundaries to at least the building line, with chain-wire fencing may be used on the remainder of the perimeter.

As with the existing facility, the fencing is generally required to be located on the site perimeter for security reasons (to allow effective boundary monitoring). However, the palisade fencing along the western boundary would be setback 1 metre into the site, to allow landscaping forward of the fence.

All lighting would be installed in compliance with *AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting*.

3.13 Signage

As with the existing data centre, no significant signage, other than minor business identification and directional signage, is proposed for the expanded data centre.



4 PLANNING CONTEXT

4.1 Strategic Context

4.1.1 Greater Sydney Region Plan

The *Greater Sydney Region Plan – A Metropolis of Three Cities*, released in March 2018, is the NSW Government's long term planning blueprint for the Sydney Metropolitan Area. The plan sets a 40-year vision (to 2056) and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters.

The plan integrates land use, transport and infrastructure planning between the three tiers of government and across State agencies. In this regard, the Plan has been prepared concurrently with *Future Transport 2056* and *State Infrastructure Strategy 2018–2038* to align land use, transport and infrastructure outcomes for Greater Sydney.

The plan's vision is to transform Greater Sydney into a metropolis of three cities, including the:

- Western Parkland City;
- Central River City; and
- Eastern Harbour City.

The site is located within the Central River City, and is identified as part of the urban area under the plan's conceptual structure plan (see **Figure 4.1**).

The plan seeks to 'review and manage' industrial and urban land in the part of the Central River City encompassing the site, to:

"...either confirm its retention for industry and urban services, or manage uses to allow sites to transition to higher-order employment activities (such as business parks) and seek appropriate controls to maximise business and employment outcomes."

The proposed Eastern Creek Data Centre Expansion Project is consistent with, and indeed promotes, the directions and objectives of the *Greater Sydney Region Plan*, particularly in relation to providing high technology jobs and skills for the city, and investment and business activity in the employment areas.

4.1.2 Central City District Plan

The *Central City District Plan*, also released in March 2018, is a guide for implementing the *Greater Sydney Region Plan* at the district level, and forms a bridge between regional and local planning.

The Structure Plan for the district builds on the conceptual plan in the regional plan, and is shown on **Figure 4.2**. The site is identified as part of the Western Sydney Employment Area under the Structure Plan.

The plan indicates that Eastern Creek has the largest area of industrial and urban services land in the district, with some 562 hectares of land, including 230 hectares of developed land and 332 hectares of undeveloped industrial and urban services land.

The plan acknowledges that '*industrial activity and urban services are important to Greater Sydney's economy*', and that '*the nature of this economic sector is continuing to change, with emerging technologies and new industries with different requirements*'.

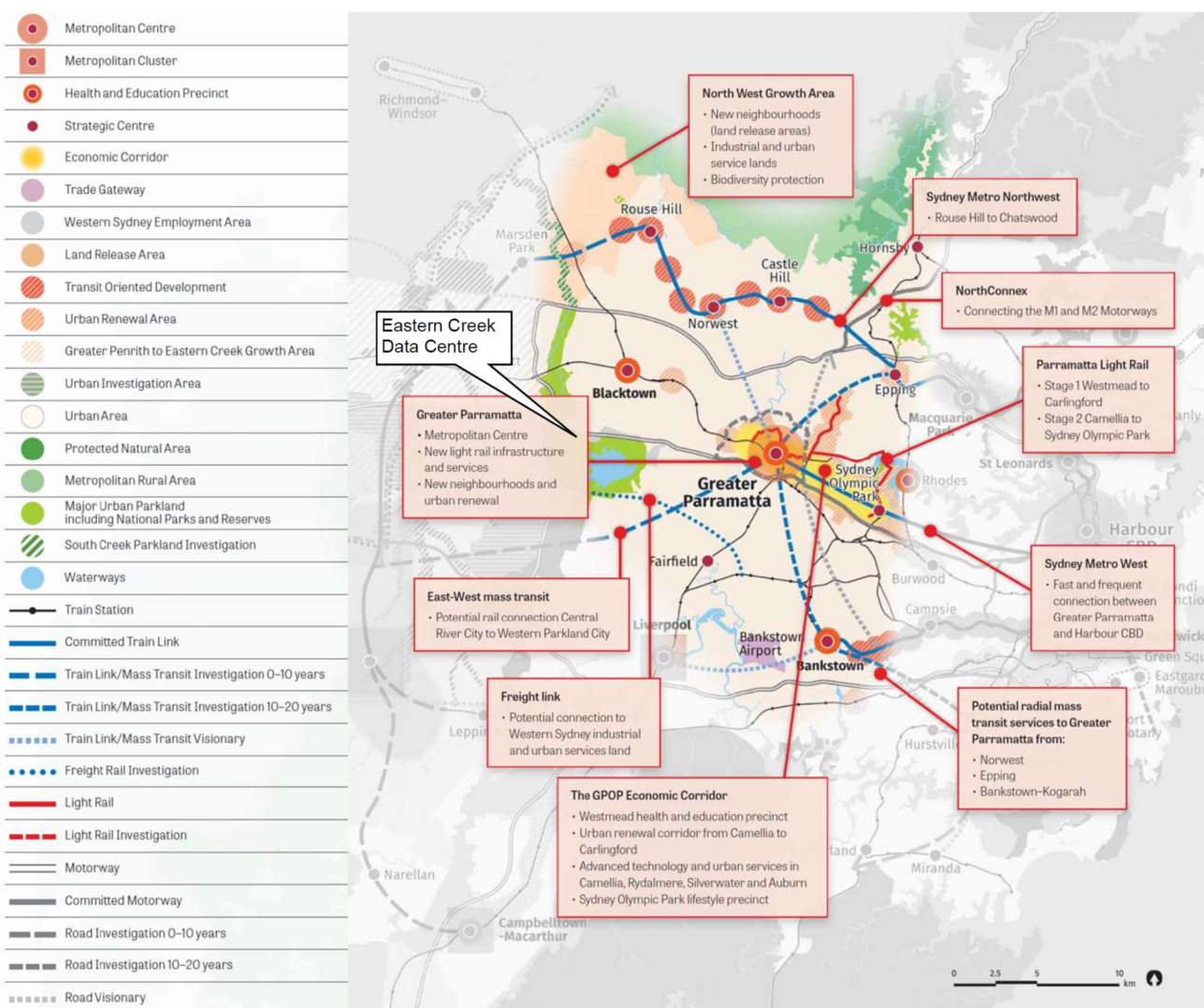


Figure 4.1: Central River City Vision (Source: Greater Sydney Region Plan)

The proposed development is considered to be consistent with the planning priorities under the plan, in particular by 'maximising opportunities to attract advanced manufacturing and innovation in industrial and urban services land' (Priority C11), and 'supporting growth of targeted industry sectors' (Priority C12), which includes changing technologies and digital advancements.

4.1.3 Other Strategic Plans

A number of other strategic plans are of some relevance to the development, including:

- **NSW State Priorities** – These 14 priorities represent the NSW Government's commitment to enhancing the quality of life of the people of NSW, and include improving education and opportunities for young people, reducing domestic violence and homelessness, improving health care, greening the city, and improving public service;
- **State Infrastructure Strategy 2018-2038** – This long term infrastructure strategy identifies policies and strategies needed to provide the infrastructure to meet the needs of NSW's growing population and economy. As outlined in Section 4.1.1 above, the strategy was prepared concurrently with the *Greater Sydney Region Plan*, and identifies similar infrastructure needs. For the Central River City, the strategy is aimed 'supporting the emerging administrative capital', based on strategic directions including:
 - improving intercity and intracity transport connections;
 - providing better cultural and recreational infrastructure;



- improving walking and cycling connections;
- facilitating high quality digital connectivity infrastructure; and
- providing more education learning spaces;
- **Future Transport Strategy 2056** – This strategy, also prepared in concert with the strategic plans including the *Greater Sydney Region Plan*, sets the 40 year vision, directions and outcomes framework for transport in NSW. The strategy will be delivered through a series of supporting plans, including *Greater Sydney Services and Infrastructure Plan* which sets outcomes for movement of people and freight, and a number of supporting plans which provide detailed issues-based or place-based planning documents to implement the strategy. These supporting plans include:
 - *Connected and Automated Vehicles Plan*;
 - *Electric and Hybrid Vehicle Plan*;
 - *NSW Freight and Ports Plan 2018-2023*;
 - *Road Safety Plan (Towards Zero)*;
 - *Maritime Safety Plan*;
 - *Disability Inclusion Plan*;
 - *Tourism and Transport Plan*; and
 - *Older Persons Transport and Mobility Plan 2018-2022*.

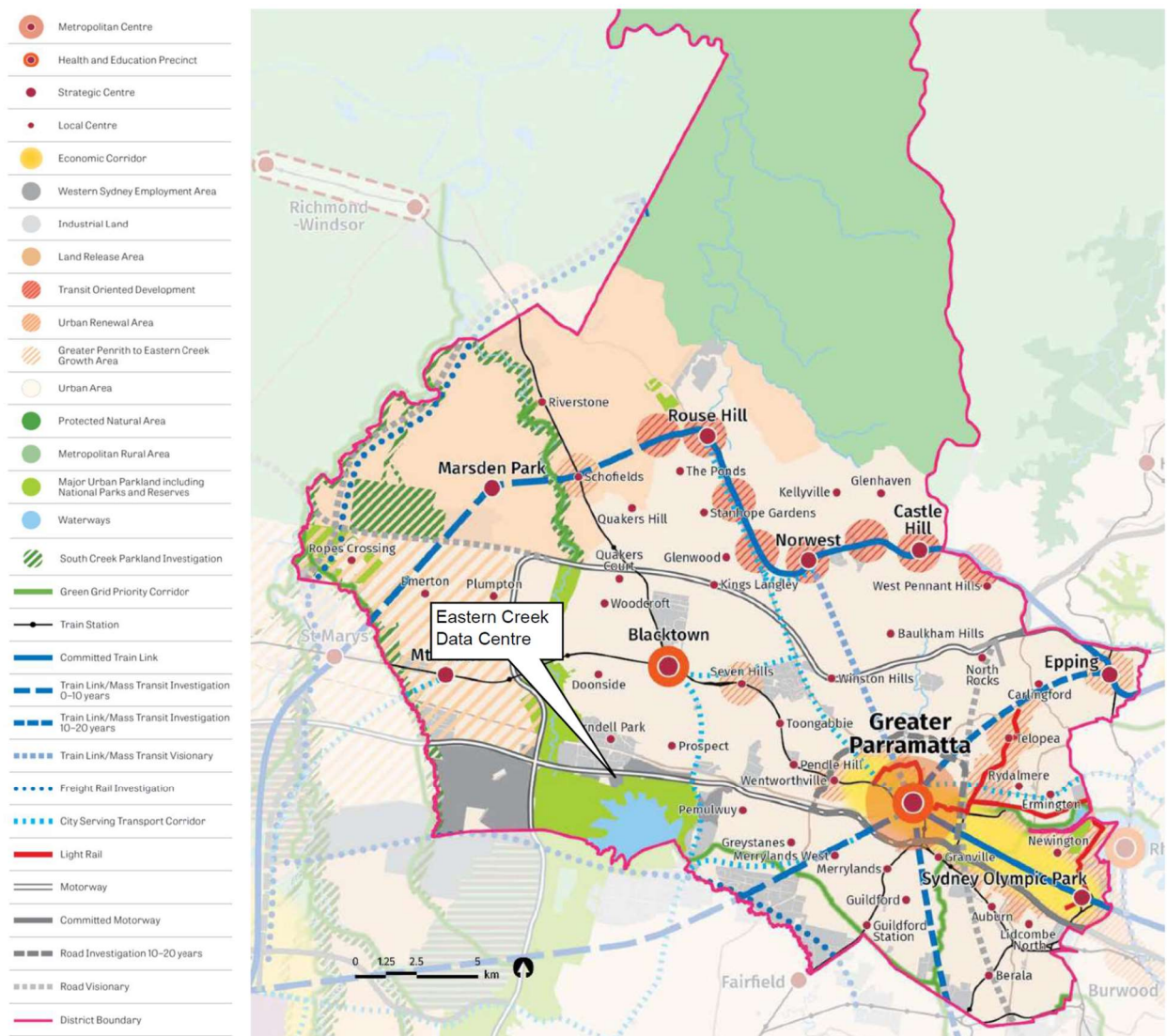


Figure 4.2: Central City District Structure Plan (Source: Western City District Plan)



The Eastern Creek Data Centre Expansion Project is broadly consistent with the aims, objectives and provisions of these strategic plans, including:

- generating considerable capital investment (\$330 million exc. GST) and high-tech job creation (100 operational jobs) in Western Sydney, thereby facilitating the NSW Government's goal of generating more jobs and investment closer to home;
- providing world-class advanced technology data storage facilities in Western Sydney to support the economic growth of the region and Greater Sydney; and
- providing key infrastructure to support the data centre and its economic opportunities, in particular through the provision of an on-site substation.

4.2 Statutory Context

4.2.1 Permissibility

The site forms part of the Raceway Precinct located within the Western Sydney Employment Area, with land use planning regulated predominately under the *State Environmental Planning Policy (Industry and Employment) 2021* (Industry and Employment SEPP)⁹.

The whole of the Raceway Precinct, including the site, is zoned IN1 General Industrial under the SEPP (see **Figure 4.3**).

The proposal represents development for the purpose of a storage premises used for the storage of data. Storage premises are permissible with consent in the IN1 zone under the Industry and Employment SEPP.



Figure 4.3: Zoning Plan (Source: Growth Centres SEPP)

Data storage facilities are also permissible with consent in any IN1 zone under clause 2.31 of *State Environmental Planning Policy (Transport and Infrastructure) 2007* (Transport and Infrastructure SEPP)¹⁰.

The on-site substation and electricity supply works are ancillary to the proposed use, and would therefore also be permissible with consent. Electricity transmission or distribution networks may also be carried out by or on behalf of an electricity supply authority or public authority without consent on any land (subject to certain requirements in national parks and reserves), under clause 2.44 of the Transport and Infrastructure SEPP.

⁹ Formerly *State Environmental Planning Policy (Western Sydney Employment Area) 2009*

¹⁰ Formerly *State Environmental Planning Policy (Infrastructure) 2007*



Although the off-site electricity supply connection works would be undertaken under separate approval, it is noted that electricity supply works are also permissible with consent in the Prospect Reservoir land under clause 7.9 of the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (Western Parkland City SEPP)¹¹.

4.2.2 State Significant Development

The proposal classifies as State Significant Development under Part 4, Division 4.7 of the EP&A Act, as it involves development for the purpose of data storage with a total power consumption of more than 10 MW, and therefore triggers the criteria in Clause 25 of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP)¹².

Consequently, the Minister for Planning¹³ is the consent authority for the proposed development.

4.2.3 Integrated and Other Approvals

Under Section 4.41 of the EP&A Act, a number of other approvals have been integrated into the State Significant Development approval process, and consequently are not required to be separately obtained for the proposal.

Under Section 4.42 of the EP&A Act, a number of further approvals are still required to be obtained, but must be substantially consistent with any development consent for the proposal.

No such approvals apply to the proposed development.

One of the integrated approvals listed under Section 4.42 of the EP&A Act is an Environment Protection Licence (EPL) from the Environment Protection Authority (EPA) under the *Protection of the Environment Operations Act 1997* (POEO Act).

In its feedback received with the Secretary's Environmental Assessment Requirements (SEARs), the EPA requested that DCI reviews whether the proposal requires an EPL, under the following classes of scheduled activity in Schedule 1 of the POEO Act, related to the back-up power generation for the data centre:

- Clause 9 Chemical Storage – petroleum storage premises with a capacity for more than 2,000 tonnes of diesel storage; and/or
- Clause 17 Electricity Generation – metropolitan electricity works (internal combustion engines), operated for 200 or more hours per year.

With regard to Clause 9, as outlined in Section 3.9.3, the proposed facility would have a total diesel storage capacity of approximately 685,000 litres (approximately 580 tonnes), which is well below the licensable volume.

With regard to Clause 17, the diesel generators would only be used for back-up power generation during power outages, along with during scheduled testing and maintenance. As outlined in Section 3.9.3, the generators are expected to be operated less than 200 hours a year.

Consequently, it is considered that the proposed data centre would not constitute a scheduled activity, and would not require an EPL under the POEO Act.

¹¹ Formerly *State Environmental Planning Policy (Western Sydney Parklands) 2009*

¹² Formerly *State Environmental Planning Policy (State and Regional Development) 2011*

¹³ Or the Independent Planning Commission if the proposal subsequently meets certain thresholds.



4.2.4 Objects of the Act

Development under the EP&A Act is required to have regard to the objects set out in Section 1.3 of the Act. The proposal is considered to be consistent with the objects of the Act, the most relevant of which are reproduced below:

- (a) *to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources* – the proposal is located within an existing industrial estate and is not expected to adversely affect the State's natural and other resources;
- (b) *to facilitate ecologically sustainable development (ESD) by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment* – the proposal is consistent with the principles of ESD, including:
 - *the precautionary principle* – the proposed development is not predicted to pose any threat of serious or irreversible environmental damage;
 - *inter-generational equity* – the proposed development is not predicted to adversely affect the health, diversity and productivity of the environment for the benefit of future generations;
 - *conservation of biological diversity and ecological integrity* – the proposed development is not predicted to have any significant adverse impacts on biodiversity; and
 - *improved valuation, pricing and incentive mechanisms* – the project is consistent with this principle, particularly in that it would improve the overall capacity (supply) of data storage facilities available to society;
- (c) *to promote the orderly and economic use and development of land* – the proposal facilitates the generation of significant economic activity and high-technology jobs in an existing industrial estate, and in an environmentally acceptable and orderly manner;
- (e) *to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats* – the proposal is not expected to result in any significant adverse environmental or biodiversity impacts;
- (f) *to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)* – the proposal is not expected to result in any significant adverse heritage impacts;
- (g) *to promote good design and amenity of the built environment* – the proposal has been designed to a high standard with quality architecture, materials and landscaping; and
- (h) *to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants* – the proposal has been designed in accordance with the requirements of the BCA and in a manner that provides for safe and efficient access and circulation.

4.3 Environmental Planning Instruments

The following environmental planning instruments are relevant to and have been considered during the preparation of the EIS:

- *SEPP (Biodiversity and Conservation) 2021;*
- *SEPP (Resilience and Hazards) 2021;*
- *SEPP (Transport and Infrastructure) 2021;*
- *SEPP (Planning Systems) 2021; and*
- *SEPP (Industry and Employment) 2021.*

Consideration of these instruments is provided below. Based on this assessment it is considered that the development is able to be conducted in a manner that is consistent with the aims, objectives and provisions of all of the applicable instruments.



4.3.1 SEPP (Biodiversity Conservation) 2021

The key part of *SEPP (Biodiversity Conservation) 2021* of relevance to the project is Chapter 6 – Bushland in Urban Areas.

This chapter aims to protect and preserve bushland in urban areas for its value to the community as part of the natural heritage, its aesthetic value, and its value as a recreational, educational and scientific resource.

Clause 6.8 of the SEPP applies to land which adjoins bushland zoned or reserved for public open space, and amongst other things requires a consent authority to consider the effect of that development on the bushland zoned or reserved for public open space, particularly by way of soil erosion and sedimentation and spread of weeds and exotic plants within the bushland.

Prospect Nature Reserve is located immediately to the south-east of the site. The proposal is not expected to result in any significant adverse impacts on the bushland within the Reserve, particularly as:

- the bushland within Prospect Nature Reserve is separated from the site by the Endeavour Energy 132kV high voltage electricity transmission line corridor located within the Reserve, with the bushland located at least 40 metres from the site at the closest point;
- runoff from the site drains to the north, with no on-site drainage into the Reserve. As such, no erosion and sedimentation issues would be expected within the Reserve as a result of the proposal;
- there are no significant weed issues on the site, and the proposal is not expected to result in the spread of weeds or exotic plants into the Reserve; and
- the landscape plan for the proposal has been designed to comprise predominantly native species, and does not comprise any noxious weeds.

4.3.2 SEPP (Resilience and Hazards) 2021

Parts of *SEPP (Resilience and Hazards) 2021* of relevance to the project include:

- Chapter 3 – Hazardous and Offensive Development¹⁴; and
- Chapter 4 – Remediation of Land.

Hazardous and Offensive Development

Chapter 3 provides definitions for hazardous and offensive industry to enable decisions on developments to be made on the basis of merit, rather than on industry type per se.

An analysis of the proposed dangerous goods storage for the facility with regard to the SEPP and the Department's *Applying SEPP 33* guidelines is provided in Section 6.8. As outlined, the proposed dangerous goods storage for the expanded data centre would not exceed the screening thresholds in the guidelines.

Consequently, the facility is not considered to constitute a 'potentially hazardous industry' or 'potentially offensive industry', and the development is able to be conducted in a manner that is consistent with the aims, objectives and provisions of Chapter 3 of the SEPP.

Remediation of Land

Chapter 4 of the SEPP aims to provide for a statewide planning approach to the remediation of contaminated land, and in particular, to promote the remediation of contaminated land for the purpose of reducing risk of harm to human health or any other aspect of the environment.

Clause 4.6 of the SEPP requires a consent authority to consider whether the land to which a development application relates is contaminated, and if the land is contaminated, to be satisfied

¹⁴ Formerly *SEPP 33 – Hazardous and Offensive Development*



that the land is suitable in its contaminated state (or will be suitable, after remediation), prior to granting consent.

The potential for site contamination on the subject land has been assessed, which found that the land is not significantly contaminated and is fit for the intended industrial use (see Section 6.2 for detail). As such, the development is able to be conducted in a manner that is consistent with the aims, objectives and provisions of the Resilience and Hazards SEPP.

4.3.3 SEPP (Transport and Infrastructure) 2021

The key part of *SEPP (Transport and Infrastructure) 2021* of relevance to the project is Chapter 2 – Infrastructure, which aims to facilitate the effective delivery of infrastructure across the State.

Clause 2.48 of the SEPP applies to development in the vicinity of electricity easements and ensures that the relevant electricity service provider is given the opportunity to make representations on the development application before a consent authority makes a determination on the proposal.

An overhead 132kV Endeavour Energy high voltage electricity easement traverses through the southern part of the site, with the electrical infrastructure also traversing through Prospect Nature Reserve to the south of the site. There is also an easement for the Endeavour Energy pad-mounted substation in the north-east corner of the existing data centre site. Consequently, the application will need to be referred to Endeavour Energy for comment.

The proposal has been designed to avoid any building works in these areas of the site, with the development in the easement restricted to hardstand and open space.

Clause 2.121 of the SEPP applies to traffic generating development and ensures that Transport for NSW (TfNSW) is given the opportunity to make representations on certain traffic generating development (as listed in schedule 3 of the SEPP) before a consent authority makes a determination on the proposal.

The development meets the thresholds in schedule 3 of the SEPP (ie. industry with a site area over 20,000m²), and is therefore considered to be traffic generating development for the purposes of the SEPP. Consequently, the application will need to be referred to TfNSW for comment.

A traffic assessment has been undertaken for the proposal, which indicates that the development is unlikely to result in any significant traffic impacts (see Section 6.7).

4.3.4 SEPP (Planning Systems) 2021

The key part of *SEPP (Planning Systems) 2021* of relevance to the project is Chapter 2 – State and Regional Development, which aims to identify developments of State or regional planning significance to which the approval and assessment process under the State significant provisions of the EP&A Act should apply.

As stated in Section 4.2.2 above, the development constitutes a class of development in Schedule 1 of the SEPP. Consequently, the Minister (or the Independent Planning Commission) is the consent authority for the development.

4.3.5 SEPP (Industry and Employment) 2021

The key parts of *SEPP (Industry and Employment) 2021* of relevance to the project include:

- Chapter 2 – Western Sydney Employment Area; and
- Chapter 3 – Advertising and Signage.



Western Sydney Employment Area

The Western Sydney Employment Area chapter of the SEPP (WSEA SEPP) is the dominant environmental planning instrument applying to the site. The SEPP aims to provide a consistent and coordinated planning framework for the WSEA, and to promote economic development and the creation of employment in the area.

The site is located within the precinct identified as 'Precinct 4 – Raceway' under the SEPP (see **Figure 4.4**).

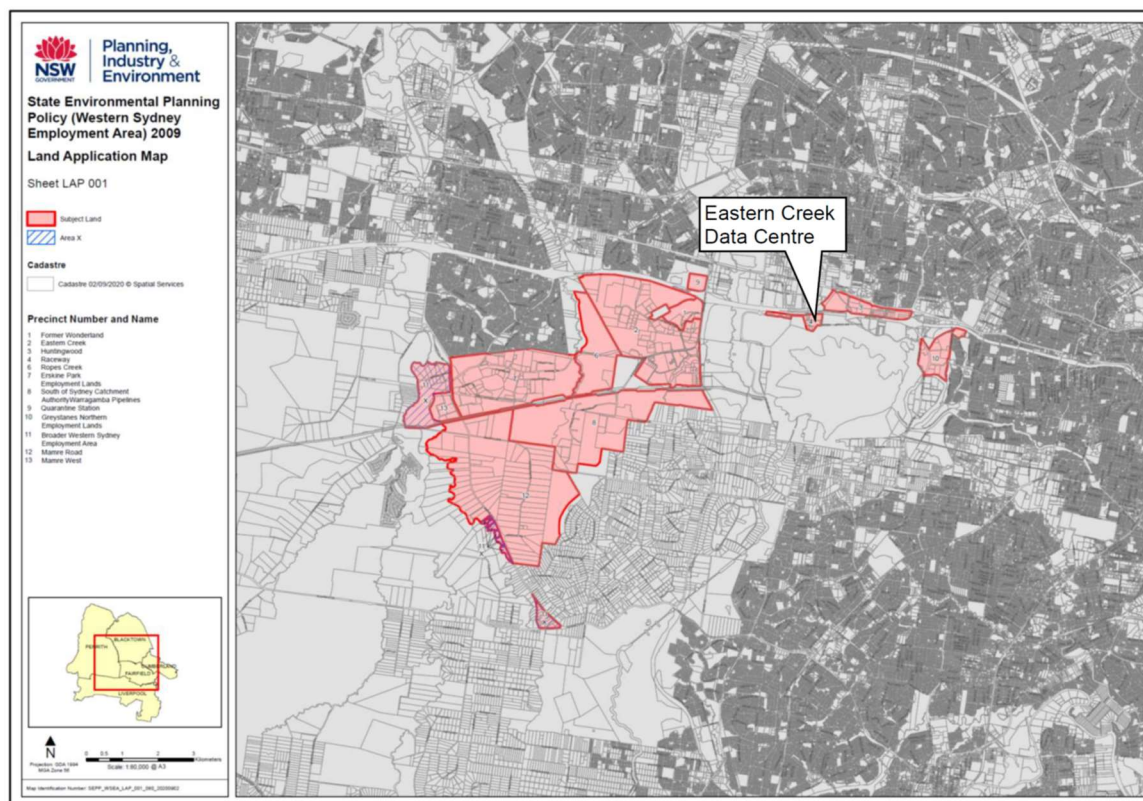


Figure 4.4: WSEA SEPP Precincts (Source: WSEA SEPP)

Part 2.3 of the SEPP requires (generally) that a development control plan or precinct plan is in place before a consent authority can grant consent to development on land to which the SEPP applies. A precinct plan has been prepared for the Raceway Precinct, and is considered in Section 4.4 below.

Parts 2.4 and 2.5 of the SEPP detail a number of principal development standards and other provisions for development within the WSEA. Consideration of the applicable standards and provisions is provided in the following table.

As indicated in the table, it is considered that the development is able to be carried out in a manner that is consistent with all of the applicable standards and provisions of the SEPP.



Table 4.1: WSEA SEPP Development Standards Consideration

Clause	Issue	Key Provisions Summary	Complies?	Comments
Part 2.4 – Principal Development Standards				
2.19	Ecologically sustainable development	Developments to minimise consumption of potable water and greenhouse gas emissions (GHG)	Yes	The proposal includes a number of measures to minimise potable water and GHG emissions – see Section 3.10
2.20	Building Height	Building heights must not adversely impact amenity of adjacent residential areas, and site topography to be considered	Yes	The proposed building is considerably lower than the approved 8-storey data centre expansion, and visual impact assessment indicates that the proposed development would not result in any significant visual impacts – see Section 6.1
2.21	Rainwater harvesting	Roof rainwater harvesting required, with connection to any regional scheme	Yes	The proposal includes roof rainwater harvesting – see Section 3.10. It is noted that no regional harvesting scheme exists
2.22	Residential land	Developments to consider and minimise amenity impacts to residential zoned areas within 250m	Yes	The site is not located within 250 metres of residential zoned land
2.23	Subdivision	Subdivision to consider fragmentation, effect on employment land uses and access	Yes	The proposed lot consolidation would not result in fragmentation, or impact on other land uses or access
2.24	Infrastructure	Required infrastructure (inc. potable water, electricity, gas, sewage) to be available, or suitable arrangements made, prior to development approvals	Yes	The proposal has been designed to provide all required infrastructure, including the development of an on-site substation to satisfy the electricity demand for the expanded data centre
2.25	Transport Infrastructure Routes	Development to be compatible with future transport infrastructure routes	Yes	The site (and precinct) is not in the vicinity of the proposed future roads
2.26	Exceptions to Development Standards	Provides for some flexibility in the application of certain development standards	Yes	The proposal complies with all development standards
Part 2.5 – Miscellaneous Provisions				
2.27	Acquisition Authority	Sets requirements for land acquisition	Yes	The site is not affected by land identified for acquisition in the SEPP
2.28	Industrial Release Area	Requires satisfactory arrangements for the contribution towards provision of regional transport infrastructure and services (as certified by the Secretary of DPIE) before the land can be developed	Yes	Satisfactory arrangements for contributions toward regional transport infrastructure and services have already been addressed for the site – see Section 4.5



Clause	Issue	Key Provisions Summary	Complies?	Comments
2.29	Miscellaneous Uses	Requires that: - industrial retail outlets have a maximum retail floor area of 20% of the gross floor area, or 400m² (whichever is lesser); - neighbourhood shops have a maximum retail floor area of 200m²	Yes	The proposal does not involve these uses
2.30	Design Principles	Requires a high standard of design and landscaping, that is compatible with the precinct	Yes	The proposal has been designed with high quality architecture and landscaping – see Section 6.1
2.31	Tree Preservation	Requires consent for tree or vegetation removal	Yes	The proposal requires some clearing of planted landscaping, but the site does not contain any remnant native vegetation – see Section 6.5
2.32	Infrastructure and Crown Development	Provides for infrastructure and Crown development and/or use	Yes	Not applicable
2.33	Development near Zone Boundaries	Allows some flexibility for development near zone boundaries	Yes	Not applicable
2.34	Transport Investigation Area	Development to be compatible with identified transport investigation area	Yes	The site (and precinct) is not in the vicinity of the mapped transport investigation area
2.35	Mamre Road Precinct	Provides standards for development in the Mamre Road Precinct	Yes	The site is not in the Mamre Road Precinct
2.36	Aircraft Noise	Provides standards for development on land subject to aircraft noise from the Western Sydney Airport	Yes	The site is not located in the vicinity of the Western Sydney Airport (the airport is approximately 14km to the south-west), and is not subject to aircraft noise
2.37	Airspace Operations	Provides standards for development that may penetrate the airspace for the Western Sydney Airport	Yes	As above
2.38	Land Adjacent to Airport	Requires consent authority to be satisfied that development within 13km of the Western Sydney Airport will not create bird or animal related hazards	Yes	As above
2.39	Water Recycling and Conservation	Requires development to connect to water recycling facilities where such facilities exist	Yes	The site is not serviced by a water recycling facility, but does include a number of water savings measures – see Section 3.10
2.40	Earthworks	Provides standards for development involving earthworks	Yes	The proposed earthworks are not expected to result in any significant impacts – see Section 6.2



Clause	Issue	Key Provisions Summary	Complies?	Comments
2.41	Flood Prone Land	Provides standards for development on flood prone land	Yes	The site is not flood prone land – see Section 6.2
2.42	Heritage Conservation	Requires consent for development on land where a heritage item or Aboriginal object is located, and provides heritage conservation measures	Yes	The site is not identified as a heritage item under the SEPP, however Prospect Nature Reserve is a heritage item listed in the Western Parkland City SEPP. Heritage assessment indicates that the proposal would not have any significant impacts on the heritage item – see Section 6.6
2.43	Clearing Native Vegetation	Requires consent for clearing of native vegetation in Zone E2 Environmental Conservation or RE1 Public Recreation	Yes	The proposal does not involve any development in these zones
2.44	Stormwater and Water Quality	Provides standards for ensuring development is designed in accordance with water sensitive design principles, and minimises impacts on water quality, riparian land, waterways, etc.	Yes	The site is not in proximity to riparian land or water bodies, and has been designed in accordance with water sensitive design principles – see Section 6.2

Advertising and Signage

Chapter 3 of the Industry and Employment SEPP aims to ensure that any signage associated with a development, including any advertisement, that is visible from a public place is compatible with the desired amenity and visual character of an area, provides effective communications in suitable locations, and is of a high quality and finish.

Consistent with the existing data centre, the expanded facility would not include any significant signage, other than minor business identification and directional signage, with no façade signage.

Accordingly, the proposed development is able to be conducted in a manner that is consistent with the aims, objectives and provisions of Chapter 3 of the SEPP.

4.4 Raceway Precinct Plan

The Raceway Precinct Plan¹⁵ provides detailed guidance for development within the Raceway Precinct. An assessment of the project against the development controls of the plan is provided in the following table.

As indicated, the project is consistent with the development controls of the Precinct Plan, with the exception of minor non-compliances with the car parking provision controls and minor setback encroachments. As outlined in the table and discussed further in Section 6, these non-compliances are considered to be minor, justified by the specifics of the project, and would not result in any adverse environmental impacts.

¹⁵ Prepared under the former *State Environmental Planning Policy No.59 – Central Western Sydney Economic and Employment Area*, and dated November 2006.



Table 4.2: Raceway Precinct Plan Compliance

Section	Issue	Key Controls Summary	Complies?	Comments
3	General Services			
3.1	Water Services	Hydraulic assessment required	Yes	Potable water supplies are adequate to service the proposal – see Sections 3.9, 3.10
3.2	Sewerage Services	Impact on sewer to be considered	Yes	Sewerage services are adequate to service the proposal – see Section 3.9
3.3	Power	Meet requirements of electricity provider and Council	Yes	The proposal includes measures to ensure adequate electricity supplies – see Sections 3.9, 3.10
3.4	Telecoms	Meet requirements of network provider	Yes	Telecommunications services are adequate to service the proposal – see Section 3.9
4	Stormwater Management	Stormwater Management Plan required	Yes	A Stormwater Management Plan has been prepared for the proposal, consistent with Council requirements – see Section 6.2
5	Environmental Management			
5.1	Ecologically Sustainable Development	Consider ESD including waste, energy, water and transport	Yes	The proposal has been designed in accordance with ESD principles, and includes a number of measures to minimise water and energy use – see Section 3.10
5.2	Water Conservation	Provide water efficiency measures, and a Site Water Management Plan	Yes	The proposal includes a number of measures to minimise water use – see Section 3.10
5.3	Energy Efficiency	Provide energy efficiency measures, and an Energy Performance Statement	Yes	The proposal includes a number of measures to minimise energy use – see Section 3.10
5.4	Air Quality	Consider air quality impacts	Yes	Air quality assessment indicates that the proposal would comply with applicable criteria – see Section 6.4
5.5	Waste	Waste Management Plan required	Yes	A Waste Management Plan has been prepared for the proposal – see Section 6.8
5.6	Contamination	Consider site contamination	Yes	Site contamination assessment indicates that the site is not contaminated – a see Section 6.2
5.7	Salinity and Soil Management	Salinity Management Plan required	Yes	Salinity assessment indicates that the site does not have any significant salinity issues – see Section 6.2



Section	Issue	Key Controls Summary	Complies?	Comments
5.8	Noise and Vibration	Consider noise and vibration impacts	Yes	Noise and vibration assessment indicates that the proposal would comply with applicable criteria – see Section 6.3
6 Biodiversity				
6.1	Biodiversity	Consider biodiversity and Asset Protection Zones (APZs)	Yes	The site does not contain any significant biodiversity values, and bushfire assessment has considered applicable APZs – see Sections 6.5 and 6.8
6.2	Weed Management	Consider weeds	Yes	The site does not contain any significant weed issues – see Section 6.5
6.3	Bushfire Management	Bushfire Hazard Assessment required	Yes	A bushfire assessment has been prepared for the proposal – see Section 6.8
7 Heritage				
7.1	Indigenous Heritage	Consider Aboriginal heritage impacts	Yes	Aboriginal cultural heritage assessment indicates that the site does not contain any significant Aboriginal heritage values – see Section 6.6
8 Traffic and Transport				
8.1	Transport Initiatives	Travel Demand Management Program required	Yes	Traffic assessment indicates that the proposal would not generate significant traffic volumes or traffic impacts – see Section 6.7
8.2	Regional Road Network	Consider road impacts	Yes	As above
8.3	Local Road Network	Local roads to be designed in accordance with applicable guidelines	Yes	The proposal does not involve any road works
8.4	Pedestrians and Cycling	Provide pedestrian and cycling facilities	Yes	The proposal has been designed to provide on-site pedestrian and cycling facilities – see Section 6.7
8.5	Public Transport	Estate-wide public transport facilities to be provided	Yes	Public transport facilities have already been provided as part of the estate development
8.6	Parking	- Comply with applicable parking rates, although the controls allow a variation to the parking rate where justified based on the use, type of employment and number of employees; - Provide disabled parking	No	The proposal does not comply with the 'industrial' carparking rates under the Precinct Plan. However, the parking demand for the data centre use is very low compared to typical industrial development, and has been designed to meet the expected demand – see Section 6.7



Section	Issue	Key Controls Summary	Complies?	Comments
9	Urban Design			
9.1	Site Analysis	Site analysis required	Yes	Site analysis has been prepared – see Section 2
9.2	Subdivision	- Min. lot size – 1,200m²; - Min. lot width – 30m	Yes	The proposed consolidated lot has an area of approx. 4.1ha and does not alter the lot widths to the applicable streets – see Section 3.2
9.3	Setbacks	- Local road (eastern precinct) – 7.5m; - Secondary setback – 5m; - Side and rear boundary: - to building – 3m; - to hardstand – 2m; - to Prospect Reservoir boundary – 10m; - to landscape area – 1m; - to top of retaining wall or battered slope – 2m; - Site cover – 65% max.	Yes/No	- Minimum building setbacks to (approx.): - Peter Brock Dr (North) – 7.5 m (with minor area 5.8m) - Peter Brock Dr (East) – 7.5 m; - Raceway PI (West) – 5.3 (with minor area 4.7m); - Raceway PI (South) – 8.3m; - Prospect Res (to substation) – 3 m; - Site cover – 44 %
9.4	Building Height and Design	Height to be merit based, with high quality, articulated design	Yes	The proposed building is considerably lower than the approved 8-storey data centre expansion, and visual impact assessment indicates that the proposed development would not result in any significant visual impacts – see Section 6.1
9.5	Entrance Treatment	Present to main frontage	Yes	The proposed building has been designed to provide a high quality frontage to the applicable streets – see Section 6.1
9.6	External Building Materials and Colours	Provide details of finishes, with high quality required	Yes	The proposed building has been designed with high quality finishes – see Section 6.1
9.7	Ancillary Buildings, Storage and Service Areas	To be effectively positioned and/or screened	Yes	Ancillary structures have been designed to a high standard and/or located away from key frontages – see Section 6.1



Section	Issue	Key Controls Summary	Complies?	Comments
9.8	Cut and Fill	- Setback from property boundary – 3(H):1(V); - Max. height retaining wall elements – 3m; - Setback from Prospect Reservoir – 10m	Yes	- Proposed retaining walls have a maximum height of approx. 2m (Nb. An internal shoring wall would have a greater height, though would not generally be publicly visible) – see Section 3.3 - The proposal would not involve any significant additional cut-fill adjacent to the Prospect Reservoir boundary
9.9	Fencing	- Landscape setback from front fence – 1m; - Max. fence height – 2.1m	Yes	The proposed fencing has been setback 1m along Raceway Place, with height to match existing 2.4m fencing – see Section 3.12
9.10	Signage and Lighting	Minimise impacts	Yes	The proposal does not involve any significant signage, and lighting would be designed to minimise off-site impacts – see Sections 3.13 and 3.12
9.11	Private Open Space	- Min. POS – 20m²; - Min. dimension – 3m	Yes	The proposal would not affect the facility's existing POS, located to the east of the existing office
9.12	Safety and Security	Manage crime risk	Yes	The proposal includes a number of safety and security measures, and would not increase crime risk – see Section 6.8
10 Landscaping				
10.1	Landscaping	Landscape Plan required	Yes	A Landscape Plan has been prepared for the proposal – see Section 6.1
11 Community Services				
11	Community Services	Proposals for community services to demonstrate benefit to the precinct	Yes	The proposal does not involve community services

4.5 Development Contributions

The Raceway Precinct was originally released and developed under the former *State Environmental Planning Policy No.59 – Central Western Sydney Economic and Employment Area* (SEPP 59).

SEPP 59 (and the *EP&A Regulation 2000*¹⁶) required that land subject to the SEPP could not be developed until a Section 94¹⁷ Contributions Plan had been prepared for the land. However, the

¹⁶ Now EP&A Regulation 2021

¹⁷ Now Section 7.11



EP&A Regulation¹⁸ allowed these requirements to be dispensed with if, amongst other things, the developer entered into an agreement with the consent authority that made adequate provision with respect to the matters that may be the subject of those plans.

A Planning Agreement was entered into between the Raceway Precinct developer, Investa, and Blacktown City Council on 22 December 2006, which covered all required developer contributions for the Raceway Precinct.

These contributions included:

- construction and maintenance of all internal local estate roads;
- upgrade of external roads and intersections, including;
 - Brabham Drive/Peter Brock Drive intersection;
 - Ferrers Road/Brabham Drive intersection;
 - Peter Brock Drive¹⁹, between the Raceway Precinct and Reservoir Road; and
 - Peter Brock Drive /Reservoir Road intersection;
- construction and maintenance of the precinct drainage basin; and
- installation and maintenance of landscaping for internal local estate roads and the precinct drainage basin.

These works were subsequently completed by Investa (by around 2008), as part of the estate development.

Accordingly, as developer contributions for Raceway Precinct have already been resolved, it is understood that no further contributions are payable for the project.

¹⁸ Former clause 271

¹⁹ Formerly Reen Road



5 CONSULTATION AND IDENTIFICATION OF KEY ISSUES

5.1 Stakeholder Identification

Development of the Raceway Precinct and the existing Eastern Creek Data Centre has been subject to detailed consultation with government authorities, service providers, surrounding landowners and the wider community.

This consultation occurred during the preparation of the original planning studies for the Raceway Precinct, and during the development application for the existing data centre.

Planning for the proposed data centre expansion has involved additional consultation with relevant government authorities, infrastructure and service providers, and surrounding landowners. Stakeholder consultation mechanisms employed for the proposal included:

- pre-application meeting (via videoconference) with the Department of Planning & Environment (the Department);
- telephone and/or email communications with authorities and service providers, including:
 - Blacktown City Council (Council);
 - Environment Protection Authority (EPA);
 - Department's Environment, Energy and Science Group (EES);
 - Department's Water Branch (DPIE Water);
 - Natural Resources Access Regulator (NRAR);
 - Water NSW;
 - Heritage NSW;
 - NSW National Parks and Wildlife Service (NPWS);
 - Transport for NSW (TfNSW);
 - Fire and Rescue NSW;
 - Rural Fire Service (RFS);
 - Deerubbin Local Aboriginal Land Council (Deerubbin LALC);
 - Endeavour Energy;
 - Sydney Water; and
 - Optus (telecommunications); and
 - Jemena (gas); and
- letterbox drop to land users surrounding the site, including those fronting Peter Brock Drive and Raceway Place, as well as Sydney Motorsport Park.

Written responses received as part of the consultation process are attached in **Appendix A**. No responses were received from neighbouring land users.

The level of consultation undertaken for the proposed development is considered to be appropriate given that the site and the wider estate are fully established for industrial development, and that the site does not contain any significant environmental features such as waterbodies, remnant vegetation, or sites of high heritage significance.

It is noted that, in accordance with the requirements of the *Environmental Planning and Assessment Regulation 2021*, this EIS will be publicly exhibited for a period of at least 30 days by the Department following lodgment of the development application. During this time, any other interested stakeholders will have the opportunity to make a submission on the proposed development.



5.2 Secretary's Environmental Assessment Requirements

The Planning Secretary of the Department issued Secretary's Environmental Assessment Requirements (SEARs) for the proposal on 6 July 2021. The SEARs were prepared in consultation with key applicable authorities, with written responses received from Council, EPA, EES, TfNSW, RFS, Endeavour Energy and Sydney Water. The SEARs, including the authority responses, are attached as **Appendix A**.

5.3 Issue Identification

Based on the consultation undertaken, it is considered that the project team and the relevant stakeholders have gained a good appreciation of the key issues relevant to development of the site. Key issues raised by stakeholders during consultation for the project are listed in the following table.

Table 5.1: Stakeholder Consultation and Issues Raised

Stakeholder¹	Key Issues	EIS Reference
Government Authorities		
Department of Planning & Environment	• Strategic and statutory planning context	• Section 4
	• Consultation and stakeholder engagement	• Section 5
	• Infrastructure, including back-up power generation	• Sections 3.9, 7.2
	• Noise and vibration	• Section 6.3
	• Air quality	• Section 6.4
	• Traffic and transport	• Section 6.7
	• Hazards, including dangerous goods and bushfire risk	• Section 6.8
	• Soil and water	• Section 6.2
	• Design and visual	• Section 6.1
	• Greenhouse gas and energy efficiency	• Section 6.4
	• Heritage	• Section 6.6
	• Socio-economics	• Section 6.9
	• Waste management	• Section 6.8
	• Ecologically sustainable development and site suitability	• Sections 4.2.4, 7.3
Blacktown City Council	• Consultation with NPWS and TfNSW	• Section 5
	• Interaction with the approved 8-storey data centre	• Section 3.4
	• Compliance with the WSEA SEPP and Raceway Precinct Plan	• Section 4.2
	• Design and visual, inc. landscaping (and tree retention), materials and articulation, building height and design quality	• Section 6.1
	• BCA compliance	• Section 3.4
	• Air quality	• Section 6.4
	• Infrastructure, inc. interaction with electricity easements	• Section 3.9
	• Demolition management and hazardous materials	• Section 6.8
	• Soil and water, inc. stormwater management and rainwater harvesting	• Sections 0, 3.10
	• Traffic and transport	• Section 6.7
	• Licencing, inc. confirmation that an environment protection licence is not required	• Section 4.2.3
Environment Protection Authority	• Noise and vibration	• Section 6.3
	• Air quality	• Section 6.4
	• Biodiversity	• Section 6.5
Environment, Energy and Science	• Soil and water, inc. flooding	• Section 6.2



Stakeholder¹	Key Issues	EIS Reference
Water NSW ²	• Consultation with NPWS regarding Prospect Nature Reserve • Impacts on Prospect Nature Reserve • Air quality • Soil and water • Heritage	• Section 5 • Section 6 • Section 6.4 • Section 6.2 • Section 6.6
National Parks and Wildlife Service ²	• Biodiversity, in particular indirect impacts on Prospect Nature Reserve (including noise and lighting impacts) • Works on NPWS land (Prospect Nature Reserve)²	• Sections 6.3, 3.12 • Section 3
Transport for NSW	• Traffic and transport, inc. traffic generation, traffic profile, dangerous goods movement, traffic management, loading facilities and swept paths, road network impacts, sustainable transport, cumulative traffic impacts	• Sections 6.7, 6.8
Rural Fire Service	• Bushfire hazard assessment, including consideration of substations and fuel storage	• Section 6.8
Infrastructure and Service Providers		
Endeavour Energy	• Electricity infrastructure, inc. easements and capacity • Network access and easement management, including earthing, prudent avoidance, demolition, dial before you dig, public safety • Hazards assessment, including bushfire and dangerous goods • Vegetation management near electrical infrastructure	• Section 3.9 • Section 3 • Section 6.8 • Section 3
Sydney Water	• Potable water, sewer and water recycling infrastructure	• Sections 3.9, 3.10
Jemena	• Gas servicing	• Section 3.9
1	No responses were received from other stakeholders consulted during preparation of the EIS, including DPIE-Water, NRAR, Heritage NSW, Fire and Rescue NSW, Deerubbin LALC, and surrounding land users	
2	Water NSW and NPWS also provided comments on the related electricity supply works within Prospect Nature Reserve. These works are subject to separate assessment and approval.	

5.4 Key Issues

Environmental and socio-economic risks associated with the development of the site for expanded data storage purposes are considered to be relatively low, given that the site is located within an existing master-planned employment estate, is zoned for industrial purposes, is largely surrounded by existing contemporary industrial facilities, is not in proximity to any sensitive land uses, and already comprises a data centre facility that has operated without any significant environmental impacts on the site for more than 10 years.

Based on the issues identified for assessment in the SEARs and/or consultation, and risk assessment of the project to date, it is considered that the key issues associated with the proposed Eastern Creek Data Centre Expansion Project include:

- design and visual amenity, including in relation to building height and interaction with Prospect Nature Reserve;
- consistency with strategic and statutory planning instruments;
- infrastructure servicing requirements, particularly electrical services and back-up power generation;
- soil and water, including integrated water cycle management;
- noise and vibration;
- air quality;



- traffic and transport, including parking; and
- hazards, including bushfire and dangerous goods.

These issues, along with other environmental issues of relevance to the project, are addressed in Section 6 below. Consistency with the relevant environmental planning instruments is addressed in Section 4.



6 ENVIRONMENTAL ISSUES

This section provides an assessment of the environmental impacts associated with the proposed Eastern Creek Data Centre Expansion Project. The environmental assessment is based on a number of specialist studies undertaken for the development, and also benefits from a range of additional studies undertaken during planning and development of the existing data centre and the wider Raceway Precinct.

6.1 Design and Visual

DCI's objective for the development is to develop a world class, high technology data centre expansion that services the data storage needs of DCI's clients in an efficient manner while contributing to the amenity and serviceability of the wider Raceway Precinct.

To help realise this design intent, the project team engaged respected industrial architects DEM, and landscape architects Studio IZ, to develop high quality architectural and landscape designs for the facility. DCI also engaged Geoscapes to prepare a comprehensive visual impact assessment for the proposal. The architectural and landscape design plans are attached as **Appendix B** and **Appendix C**, respectively, and the architect's design statement is attached as **Appendix F**. The visual assessment is attached as **Appendix J**.

As discussed in Section 2, the site is located in the Raceway Precinct and is surrounded by industrial zoned land and existing industrial development on most sides, with Prospect Nature Reserve located immediately to the south-east, and open space regulated under the Western Parkland City SEPP located to the east (beyond Peter Brock Drive).

There are no sensitive visual receivers in the vicinity of the site. The closest residential receivers are located in Blacktown and Prospect more than 1 kilometre to the north-east, beyond the M4 Motorway and the Great Western Highway. The area of Prospect Nature Reserve to the south of the site (and the Endeavour Energy easement) is heavily vegetated, and the site is well separated from the open space and picnic areas within the Reserve (including George Maunder Lookout), which are located at least 2.5 kilometres to the south-east. No views of the site are available from these areas.

Notwithstanding, the site has direct and extended frontage to Peter Brock Drive and Raceway Place, and the expanded data centre and substation would be highly visible to commuters and occupants within the industrial estate. The facility (particularly the substation) would also be visible from the undeveloped open space to the east of the site.

6.1.1 Architectural and Landscape Design

The architectural and landscape designs for the data centre expansion have been prepared in a manner that:

- respect and are consistent with the development standards for the Raceway Precinct in the WSEA SEPP, and generally consistent with the development controls in the Raceway Precinct Plan;
- maximise the realistic development potential of the site, in accordance with current and foreseeable market demand for data storage;
- incorporate a range of building materials, architectural elements and colours to provide high quality and distinctive architectural themes for the expanded facility;
- are consistent with the design of contemporary facilities in the Raceway Precinct;
- respect and highlight the natural attributes of the site, particularly the street frontages and street corners; and
- respect and address the site's key constraints, particularly the:
 - Prospect Nature Reserve to the south of the site;



- open space to the east of the site (beyond Peter Brock Drive);
- Endeavour Energy easement within and to the south of the site, with no building works proposed within the easement; and
- adjacent industrial facilities.

The architectural design for the proposed expansion includes a number of specific measures to address these constraints and attributes, ensures a high quality design, and mitigates potential visual impacts. These include:

- designing the 4 level SYD03 data storage facility as a 'lateral' expansion onto neighbouring lots, as opposed to the more 'vertical' 8 storey expansion within the existing site for the approved SYD02 data storage facility²⁰. This would significantly reduce the maximum building height of the data centre, from 54 metres for the approved SYD02 facility, to 35.7 metres for the proposed SYD03 facility, a reduction of more than 18 metres;
- locating the highest part of the facility (ie. the 4 level data storage building) in the lowest part of the site, to reduce the overall relative height of the facility as far as practicable. In this regard, the proposed SYD03 facility has a maximum relative height of RL108.2 metres (or RL109.2m including the lift overrun), whereas the approved SYD02 facility has a maximum relative height of RL133 metres, resulting in a reduction of almost 25 metres (see **Figure 6.1**);
- orienting the buildings to the key street frontages;
- building setbacks generally comply with the minimum requirements under the Raceway Precinct Plan, with only minor encroachments for articulation;
- providing generous setbacks to the Prospect Nature Reserve. In this regard, the SYD03 data storage facility is set back considerably further from the Reserve (ie. approximately 120 metres) than the approved SYD02 data centre (ie. approximately 25 metres), and the proposed substation has a greater setback (ie. 3 metres) to the southern boundary than the existing industrial building on this lot (ie. approximately 1 metre);
- plant and equipment, and loading areas, have been integrated into the building design;
- external plant and equipment (eg. additional sprinkler tank) have been located to the rear of the site, away from the public domain;
- floor space ratio (ie. 50%) and site cover (ie. 44%) for the expanded data centre are relatively low, and well within the maximum allowable site cover under the Raceway Precinct Plan (ie. 65%); and
- building facades, including the offices and warehouses, have been designed to a high standard, providing good articulation and visual relief, and a range of materials and colours, and extensive glazing to offices, to provide visual interest and minimise bulk and scale.

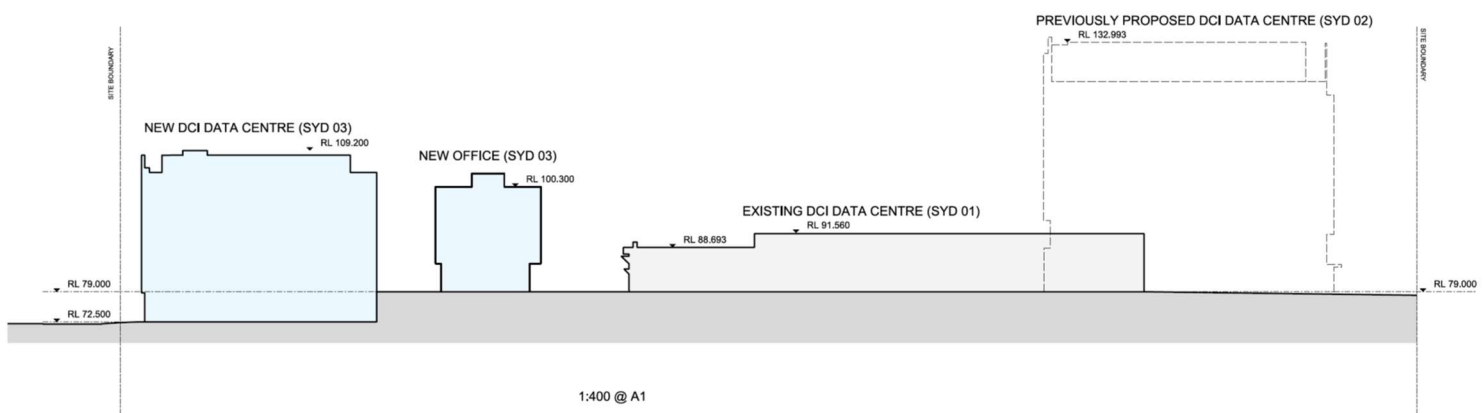


Figure 6.1: Relative Building Heights (Source: DEM)

²⁰ As outlined in Section 3.4, the SYD02 facility would not be progressed if SYD03 is approved and acted upon.



The landscape plans also include a number of specific measures to ensure a high quality development and minimise adverse visual impacts, including:

- predominantly locally endemic species of trees, large feature shrub screen planting, groundcover planting and native grasses;
- provision of street trees along Peter Brock Drive and Raceway Place, to improve the streetscape, with positioning in locations that do not affect estate services or traffic safety. Street tree species would include Black Tea Tree (*Melaleuca bracteata*);
- predominately low growing species within the site to maximise casual surveillance and minimise security risks;
- feature trees within the site in suitable locations, using Flowering Gums (*Corymbia ficifolia* 'Wildfire' and 'Snowflake');
- setting back the proposed fence to Raceway Place 1 metre from the property boundary, to allow landscaping forward of the fence;
- provision of landscaped retaining walls where required to the Peter Brock Drive (North) frontage, to soften and screen the retaining walls; and
- carefully considered landscaping within the Endeavour Energy easement, comprising low height trees/shrubs and groundcovers so as not to constrain access within the easement.

Detailed consideration of the proposal against the objectives and principles of the NSW Government Architect's *Better Placed* policy and *Greener Places* framework is provided in the architects design statement (see **Appendix F**).

6.1.2 Visual Amenity

The visual assessment prepared by Geoscapes (see **Appendix J**) includes analysis and photomontages illustrating the potential impacts of the proposed development from a number of viewpoint locations in the area surrounding the site (see **Figure 6.2**).

The chosen viewpoints are similar to those used for the SYD02 visual impact assessment²¹, with one additional viewpoint located near the corner of Peter Brock Drive and Raceway Place (VP9). The use of the same viewpoints allows a direct comparison between the visual impacts of the proposed SYD03 data storage facility and the approved SYD02 data storage facility.

Photomontages from representative viewpoints are reproduced on **Figures 6.3 to 6.9** below, and photomontages from other viewpoints are provided in **Appendix J**. The photomontages provided in the figures below include a baseline (existing) photo and representation of the proposed SYD03 data storage facility, as well as a representation of the approved SYD02 data storage facility for comparison (at the bottom of each figure).

The photomontage from viewpoint VP9 includes a representation of the view at Year 15 of the development, to represent the development once the proposed landscaping has matured.

A summary of the assessed visual impacts from all viewpoints is provided in **Table 6.1** below.

Overall, the visual assessment concludes that none of the visual impacts from the surrounding viewpoints are judged to be of significance, and that it is clear that the alternative SYD03 data storage facility design has lower visual impact on surrounding visual receivers than the previously approved SYD02 data storage facility.

The assessment notes that while two locations (VP8 and VP9) have been assessed as having moderate to minor visual impacts from the development, these impacts are not considered to be significant.

²¹ The SYD02 visual assessment was also prepared by Geoscapes.

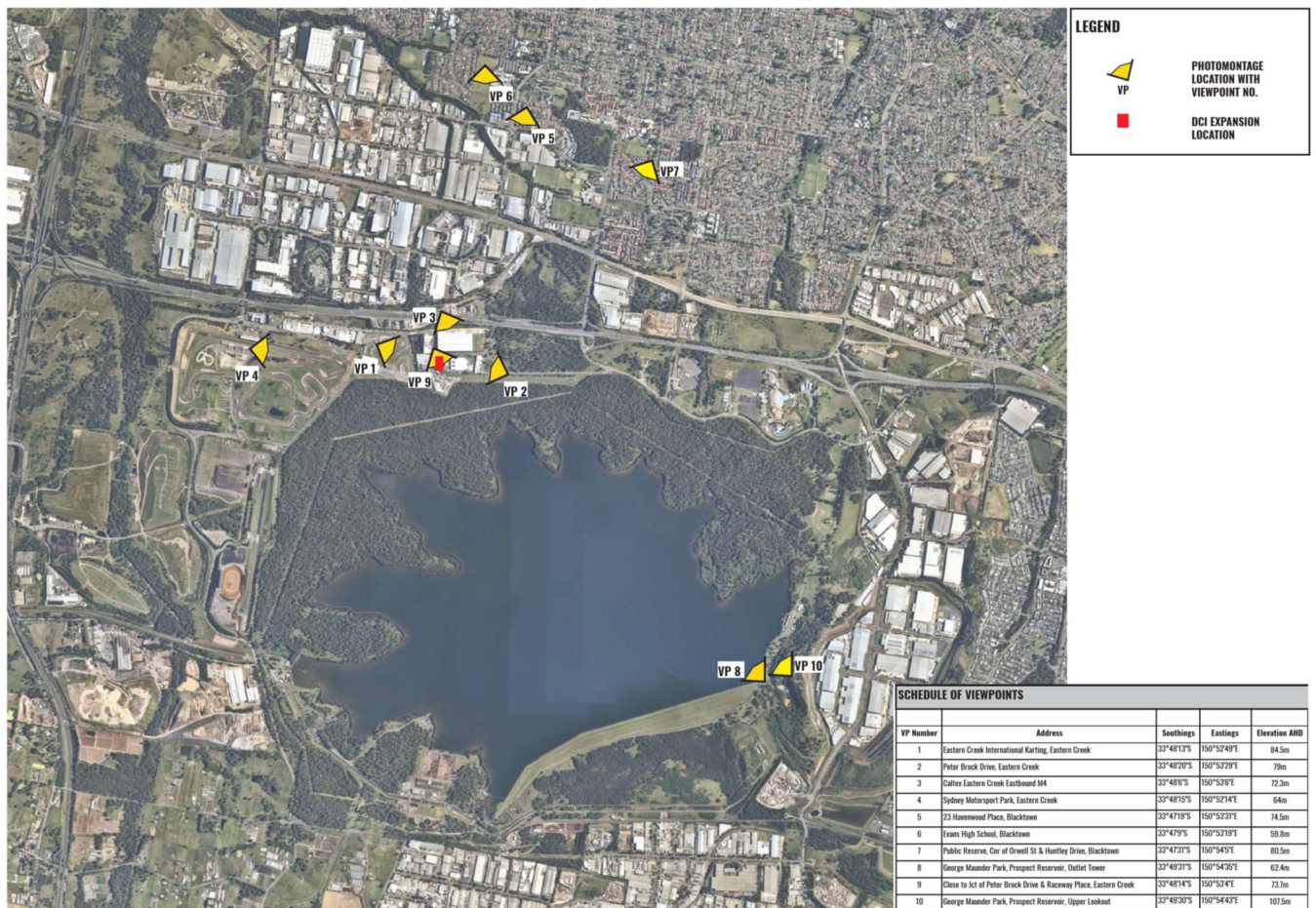


Figure 6.2: Viewpoint Locations (Source: Geoscapes)

In this regard, VP8 (George Maunder Park within Prospect Nature Reserve) is judged to have very high sensitivity due to its heritage significance and scenic value. However, at a distance of 3km from the development site the proposed data storage facility would form only an extremely small component of the view, barely visible above the tree line.

VP9 (Cnr Peter Brock Drive and Raceway Place) is very close to the site and the magnitude of change would be greater, however this location is within the Raceway Precinct and the development would not be out of character for the area.

There are a number of other locations which would have some visibility of the development, including the M4 Motorway, Peter Brock Drive, Eastern Creek International Karting and Sydney Motorsport Park. Due to the type of users at these locations (ie. industrial, active recreation, commuters), their sensitivity is generally less and as a result the significance of the visual impact is also much lower.

The visual assessment notes that the streetscape in the area would be enhanced by the proposed landscaping. It also considers that the architectural design of the facility has carefully selected building materials and colours to reduce visual impacts in terms of bulk and scale, and would create a high quality, visually attractive building.



Figure 6.3: Photomontage – VP1 (with SYD03 at bottom for comparison) (Source: Geoscapes)

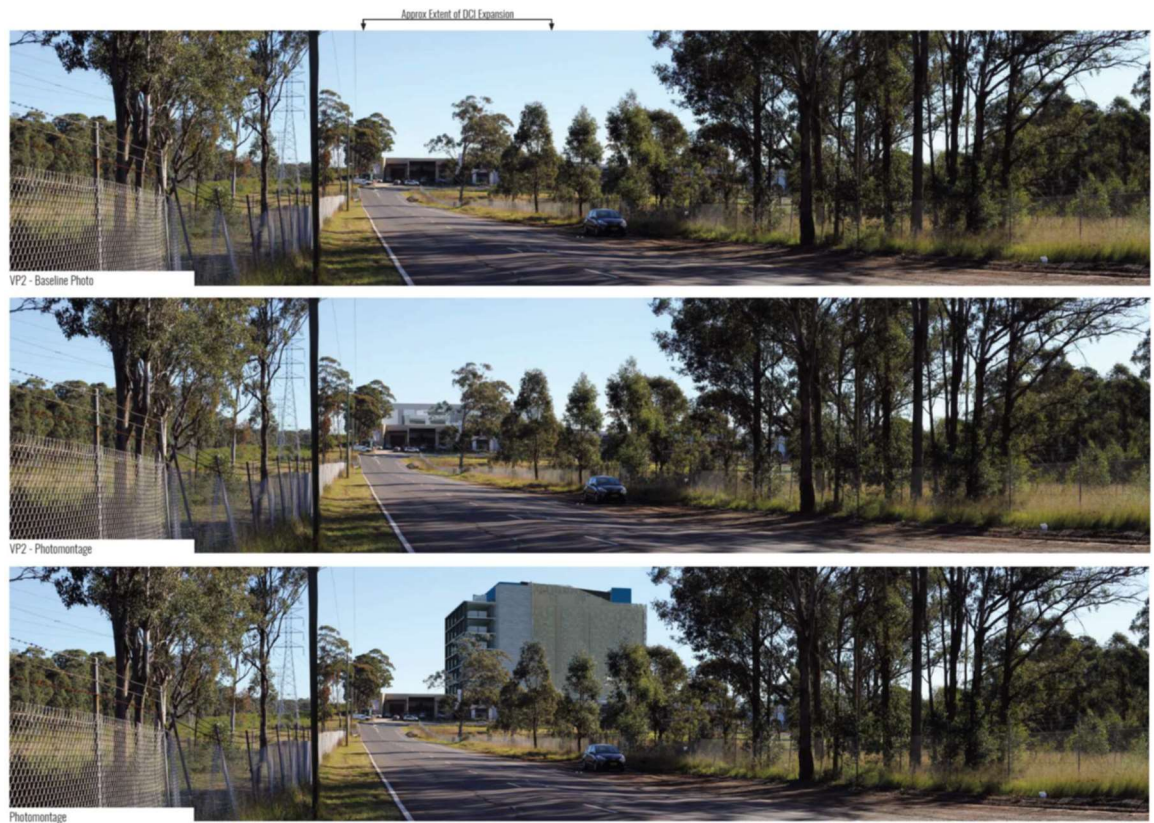


Figure 6.4: Photomontage – VP2 (with SYD03 at bottom for comparison) (Source: Geoscapes)

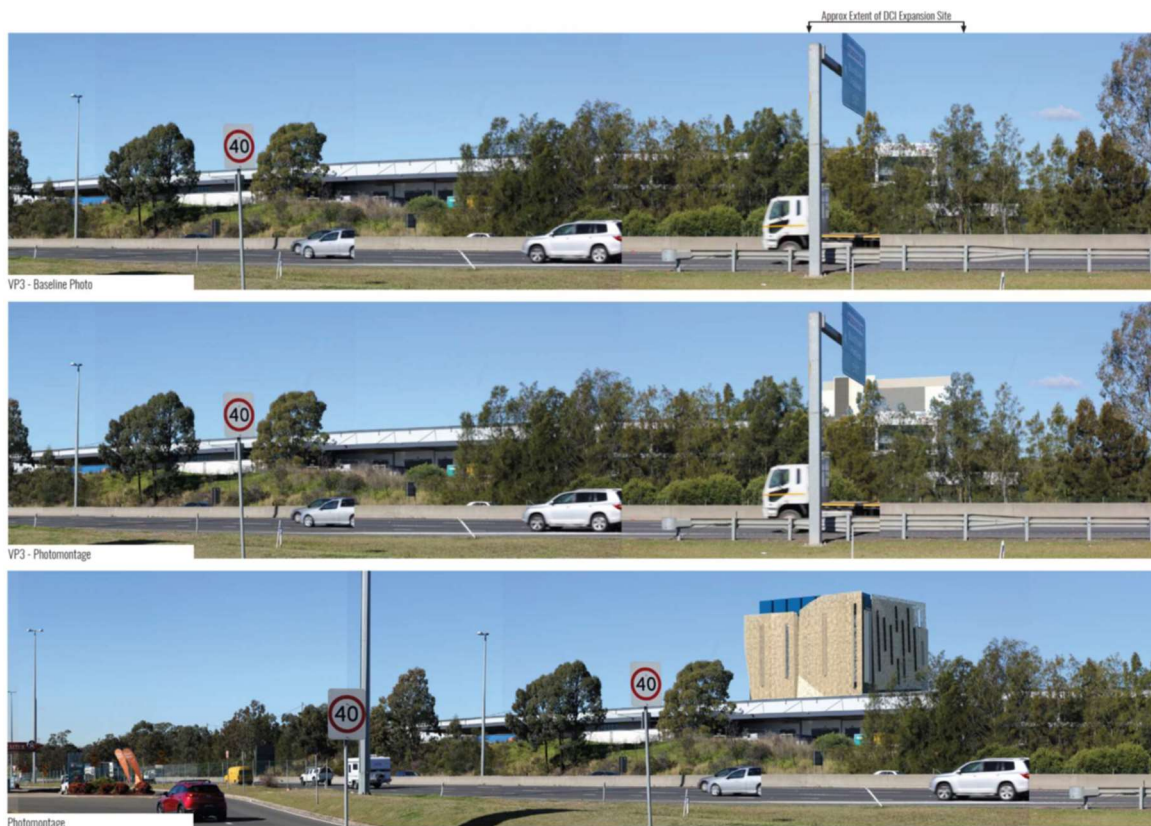


Figure 6.5: Photomontage – VP3 (with SYD03 at bottom for comparison) (Source: Geoscapes)



Figure 6.6: Photomontage – VP4 (with SYD03 at bottom for comparison) (Source: Geoscapes)

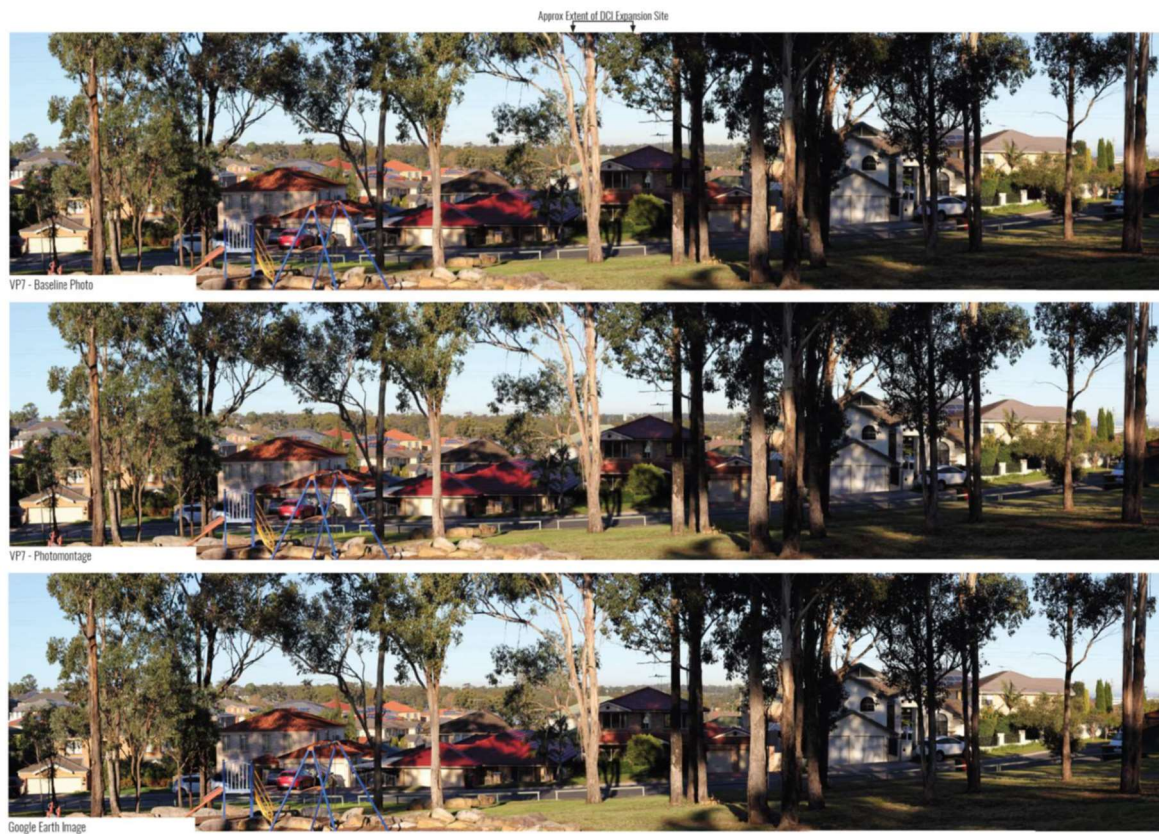


Figure 6.7: Photomontage – VP7 (with SYD03 at bottom for comparison) (Source: Geoscapes)

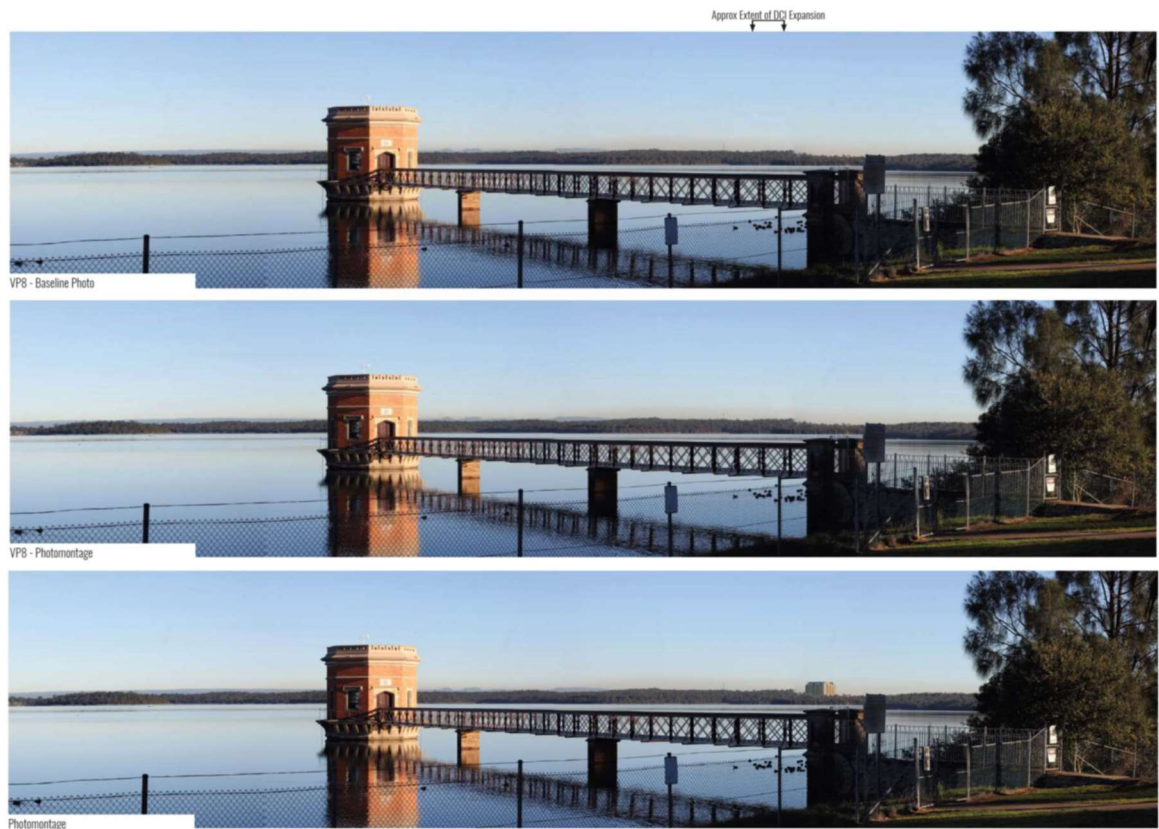


Figure 6.8: Photomontage – VP8 (with SYD03 at bottom for comparison) (Source: Geoscapes)



Figure 6.9: Photomontage – VP9 (Source: Geoscapes)

Table 6.1: Summary of Visual Impact Assessment

ID	Location	Visual Sensitivity	Magnitude of Change	Assessed Visual Impact	
				Proposed SYD03	Approved SYD02
VP1	Eastern Creek International Karting	Low	Medium	Minor – The proposal would be clearly noticeable, however the sensitivity of this receptor is low, and the proposal would not be out of character with other industrial development	Minor
VP2	Peter Brock Drive (East)	Low	Low	Minor Negligible – The proposal would be partially visible behind existing industrial buildings and vegetation	Moderate Minor
VP3	Caltex Eastern Creek M4 Motorway	Medium	Low	Minor – The proposal would be visible, although existing buildings and vegetation would mitigate the views and magnitude of change	Moderate Minor
VP4	Sydney Motorsport Park	Medium	Very Low	Minor Negligible – The proposal would be visible in the distance, although the indoor karting arena would partially screen view	Minor
VP5	Havenwood Place Blacktown	Medium	Very Low	Minor Negligible – The proposal would be distant (approx. 2km) generally not be visible from this residential area	Minor
VP6	Evans High School Blacktown	Medium	Very Low	Minor Negligible – The proposal would be distant (approx. 2km) and generally not be visible from this location	Minor



ID	Location	Visual Sensitivity	Magnitude of Change	Assessed Visual Impact	
				Proposed SYD03	Approved SYD02
VP7	Public Reserve, Cnr Orwell St & Huntley Dr, Blacktown	Medium	Very Low	Minor Negligible – The proposal would be distant (approx. 2km) and generally not be visible from this residential area	Moderate Minor
VP8	George Maunder Park, Prospect Nature Reserve	Very High	Very Low	Moderate Minor – The proposal would be distant (approx. 3km) and barely noticeable from this location, with existing vegetation screening most of the development	Moderate
VP9	Cnr Peter Brock Drive & Raceway Place	Low	High	Moderate Minor – The proposal would be clearly noticeable from this location, however the views would be experienced by land users within the industrial estate, and therefore receptor sensitivity is low	Viewpoint not previously assessed
VP10	George Maunder Park Upper Lookout, Prospect Nature Reserve	High	Very Low	Minor – The proposal would be barely noticeable from this location, with existing vegetation screening most of the development	Minor

6.2 Soil and Water

6.2.1 Erosion and Sedimentation

The underlying geology of the site comprises Wianamatta Shale, which is overlain by silty clay soils and fill materials. The soils are non-sodic to strongly-sodic, and are highly susceptible to erosion.

The proposal involves land disturbance works, associated with bulk and detailed earthworks across the site, and construction of the data centre expansion and infrastructure works. Erosion and sedimentation risks associated with the development are able to be effectively managed using standard best practice control measures, including:

- minimising disturbance areas as far as practicable;
- diverting 'clean' run-on water around disturbance areas;
- controlling 'dirty' run-off water from within the disturbance area via various controls such as sediment fencing and basins; and
- rehabilitating disturbed areas as quickly as possible following disturbance.

A detailed Erosion and Sediment Control Plan (ESCP) has been prepared for the proposal by Calibre, and is attached in **Appendix E**.

The ESCP has been prepared in accordance with the above principles and the Department's *Managing Urban Stormwater – Soils and Construction* (ie. the 'Blue Book').

6.2.2 Site Contamination

Site contamination assessments were undertaken on behalf of Investa (the Raceway Estate developer) for development of the Raceway Precinct estate by Peter J Ramsay and Associates Pty Ltd. These assessments included:

- a preliminary (or Phase 1) assessment based on literature review, site history investigation and site inspection (March 2005);



- a further (or Phase 2) assessment including soil sampling across the site (19 locations), sediment and surface water sampling from the two dams on the precinct site, and groundwater sampling from a monitoring well adjacent to the northern boundary (November 2005).

The precinct-wide assessments indicated that:

- prior to development of the Raceway Precinct, it had historically been used for agricultural purposes including grazing and cropping, since at least 1900;
- the soil and sediment across the precinct is not contaminated, with contaminant levels generally at natural background levels and well below the guidelines considered acceptable for commercial/industrial land use;
- site groundwater is not contaminated, with contaminant levels within natural background levels; and
- contaminant concentrations in site surface water were low, with the exception of an elevated antimony concentration which exceeded guideline levels, but which was not expected to result in any significant impacts.

The precinct assessments concluded that the precinct site is suitable for commercial/industrial land use without further remediation.

An updated Site Contamination Assessment has been undertaken for the project by Arcadis on behalf of DCI, and is attached in **Appendix K**. The assessment includes:

- review of available geological and hydrogeological information;
- site history review;
- review of aerial photography, contaminated sites registers and groundwater bore data;
- site inspection;
- identification of potential areas of environmental concern (PAEC) and contaminants of potential concern (COPC);
- sampling from 12 bores in the PAEC, with a total of 30 soil samples; and
- analysis for a range of COPC, including heavy metals, total recoverable hydrocarbons (TRH), monocyclic aromatic hydrocarbons (BTEXN), polycyclic aromatic hydrocarbons (PAHs), pesticides, polychlorinated biphenyls (PCBs) and asbestos.

The sampling locations are shown on **Figure 6.10**, and the identified potential areas of environmental concern include:

- PAEC 1 – imported fill material across the site;
- PAEC 2 – demolition material across the site; and
- PAEC 3 – two 70,000L diesel underground storage tanks (USTs) on the existing data centre site.

The soil sampling and analysis from these PAEC identified no exceedances of the adopted criteria for a commercial/industrial land use on the expansion site.

The assessment concludes that the potential for significant contamination associated with the fill material and demolition material is low, based on the proposed commercial/industrial land use.

The assessment notes that integrity testing of the USTs on the existing data centre site is compliant with the *Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2019* (POEO Regulation 2019), however groundwater monitoring around the USTs has not been undertaken and therefore the potential for contamination could not be dismissed.



The assessment concludes that the site is suitable for commercial/industrial land use without further remediation, but recommended that biannual groundwater monitoring is conducted from the monitoring well that has been installed adjacent to the USTs, in addition to the ongoing integrity testing.

DCI would implement this recommendation, and would also install and manage the proposed additional diesel USTs for the SYD03 data storage facility in accordance with the POEO Regulation 2019 (see also Section 6.2.8).



Figure 6.10: Site Contamination Sampling Locations (Source: Arcadis)

6.2.3 Salinity

A Salinity Assessment and Management Plan has been prepared for the proposal by Geotesta, and is attached as **Appendix L**.

The assessment was based on review of the *Salinity Potential in Western Sydney* mapping, soil sampling (6 boreholes to a maximum depth of 8 metres), groundwater review and site inspection.

The assessment found that the soils on the site are non-saline to moderately saline, with salinity generally increasing with depth. Soils were assessed as being generally non-aggressive to concrete and steel, with minor areas of mildly-aggressivity. No groundwater was encountered.

The assessment indicates that salinity is not a major issue on the site. Notwithstanding, a salinity management plan has been prepared which includes a number of standard best practice salinity management measures, including:

- **Earthworks:**
 - grading to prevent surface ponding;
 - ensure good subsoil drainage;
 - stockpile topsoil for use in landscaping;



- separately stockpile deeper slightly saline clay soils for general fill;
 - ensure good erosion and sediment controls;
- **Building Construction:**
 - use admixtures for waterproofing and corrosion prevention;
 - provide a sand/gravel layer and plastic membranes under ground slabs;
 - select materials in accordance with applicable standards for aggressivity and corrosion;
 - ensure good drainage;
- **Landscaping:**
 - ensure selection of suitable species;
 - encourage use of deep-rooted species; and
 - retain significant existing trees where practicable.

The project would be undertaken in accordance with the salinity management plan.

6.2.4 Acid Sulfate Soils

The site does not contain the potential for acid sulfate soils, given its elevation (ie. approx. 70-84m AHD). Acid sulfate soils are generally restricted to areas below 10m AHD.

6.2.5 Riparian Areas and Waterbodies

There are no riparian areas (ie. creeks and rivers) on or in proximity to the site. Accordingly, the project would not have any direct impacts on riparian areas.

Prospect Reservoir is located approximately 380m to the south-east of the site at the closest point. The reservoir has an elevation of around 65m AHD, whereas the site elevation is approximately 70-84m AHD. The site is separated from the reservoir by a ridge, with all drainage from the site to the north, with no drainage into the reservoir lands. Accordingly, the project is not expected to have any surface or groundwater impacts on the reservoir.

6.2.6 Stormwater Management

Broad stormwater drainage management for the Raceway Precinct was addressed by Investa (the estate developer) as part of the development of the precinct. In this regard, a Stormwater Management Plan for the estate was prepared by Patterson Britton and Partners Pty Ltd.

The site is located within the Central Catchment and East Catchment under the precinct Stormwater Management Plan (SMP). The key elements of the plan in these catchments are shown on **Figure 6.11**. In relation to drainage from the site, the precinct SMP provides for:

- stormwater pipes in Peter Brock Drive;
- a sub-precinct gross pollutant trap;
- a central detention facility and wetland; and
- off-site via a culvert under the M4 motorway.

The central detention wetland/basin was designed (and assessed using RAFTS modelling) such that the peak flow for the fully developed site is less than or equal to that of the pre-existing site for all flow events up to and including the 100 year event.

The East Catchment does not drain to the central detention basin, and as such on-site detention (OSD) may be required to be provided as part of individual developments in this catchment.

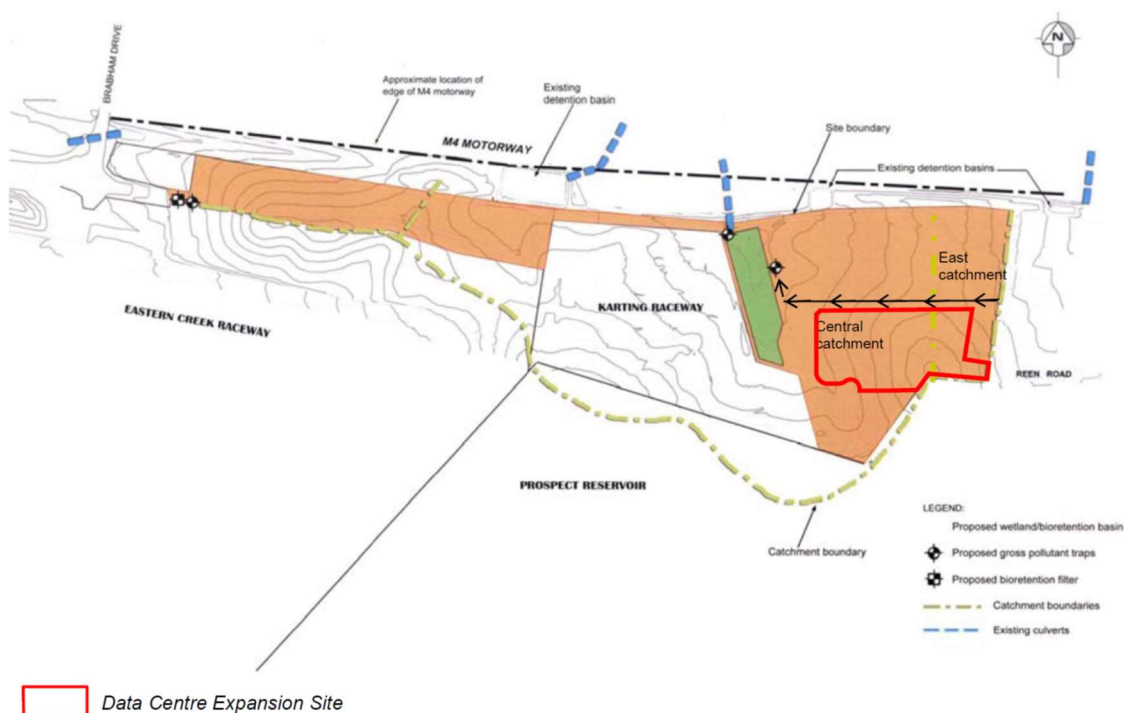


Figure 6.11: Precinct Stormwater Management Plan (Source: Precinct Plan and Patterson Britton SMP)

The existing SYD01 data centre facility was designed and constructed in accordance with the precinct stormwater strategy, and included:

- roof rainwater harvesting tanks, with a total volume of approximately 1 ML;
- on-site gross pollutant trap (GPT);
- a grassed swale/bio-retention trench in the northwest corner, for water quality treatment; and
- discharge to existing stormwater pipes in Peter Brock Drive and Raceway Place, with drainage to the central detention basin.

A project-specific Soil and Water Management Plan (SWMP) has been prepared for the proposed Eastern Creek Data Centre Expansion project by Calibre, and is attached as **Appendix H**. The SWMP has been prepared in accordance with the precinct SMP and the Raceway Precinct Plan, as well as the SMP for the existing SYD01 data centre.

The key elements of the plan are shown on **Figure 3.10**, and include:

- OceanSave first flush devices (2 units) to treat roof runoff from the new SYD03 data storage building prior to storage in rainwater tanks;
- rainwater harvesting tanks (at least 2.9 ML total volume) draining part of the roofs, including:
 - a 150 kL tank beneath the SYD03 data storage building, for irrigation and toilet flushing;
 - two tanks with a combined volume of 2 ML beneath the SYD03 data storage building, for chiller units; and
 - a 900 kL tank below the proposed southern car park, to replace the six existing SYD01 tanks that would be demolished to make way for the SYD03 data storage building;
- primary treatment to parking and hardstand areas via the provision of OceanGuard (or equivalent) pit inserts;
- secondary/tertiary treatment to roof and hardstand areas via the provision of treatment tanks containing StormFilter cartridges (or equivalent) gross pollutant traps, and extension of the existing bio-retention basin servicing the SYD01 facility;



- OSD and treatment for the substation site via a Humeceptor device, as this site does not drain to the central precinct detention basin; and
- stormwater pits, pipes and drains to direct stormwater, prior to discharge to the estate stormwater system.

The SWMP notes that the drainage system for the development has been designed to accommodate the following storm events:

- stormwater treatment systems – 86.5% Annual Exceedance Probability (AEP), or 1 in 6 month Average Recurrence Interval (ARI);
- site piped drainage system (minor) – 5% AEP, or 1 in 20 year ARI;
- site overland flow paths (major) – 1% AEP, or 1 in 100 year ARI; and
- regional flooding and overland flow protection – 0.2% AEP, or 1 in 500 year ARI.

The proposed stormwater scheme for the project has been modelled in the project SWMP using MUSIC software. The results of the analysis are summarised in the following table, and indicate that the project would comfortably comply with the stormwater quality criteria in Council's *Engineering Guide for Development*.

Table 6.2: Water Quality Modelling Results

Pollutant	Pre-treatment (kg/yr)	Post-treatment (kg/yr)	Reduction	Reduction Criteria
Gross Pollutants	182	0.1	99.9%	90%
Total Suspended Solids	540	43.4	92.0%	85%
Total Phosphorus	1.52	0.33	78.6%	65%
Total Nitrogen	15.7	4.18	73.3%	45%

6.2.7 Flooding

Due to the critical infrastructure requirements of the data centre facility, DCI requires that its data centres provide for flood protection up to the 0.2% AEP, or a 1 in 500 year ARI flood event. As such, a Flood Assessment has been prepared for the project by Calibre, and is included as part of the SWMP in **Appendix H**.

The assessment includes TUFLOW modelling for the 500 year storm event, which indicates that flooding is expected to occur at the intersection of Peter Brock Drive and Raceway Place with major overland flows from the cul-de-sac at the end of Raceway Place (see **Figure 6.12**).

The 500 year flood level at the intersection is estimated to reach RL 70.95m. At this level, minor flood encroachments into the site can be expected at the north-western corner of the site.

However, this is still well below the SYD03 data storage building's proposed ground floor level of RL 72.5m even allowing for a 0.3m freeboard (which results in a 500 year flood planning level of RL 71.25m).

The major overland flow from the cul-de-sac and along Raceway Place is expected to be fully contained within the road reserve.

No flooding is expected at the eastern end of the development around the substation site.

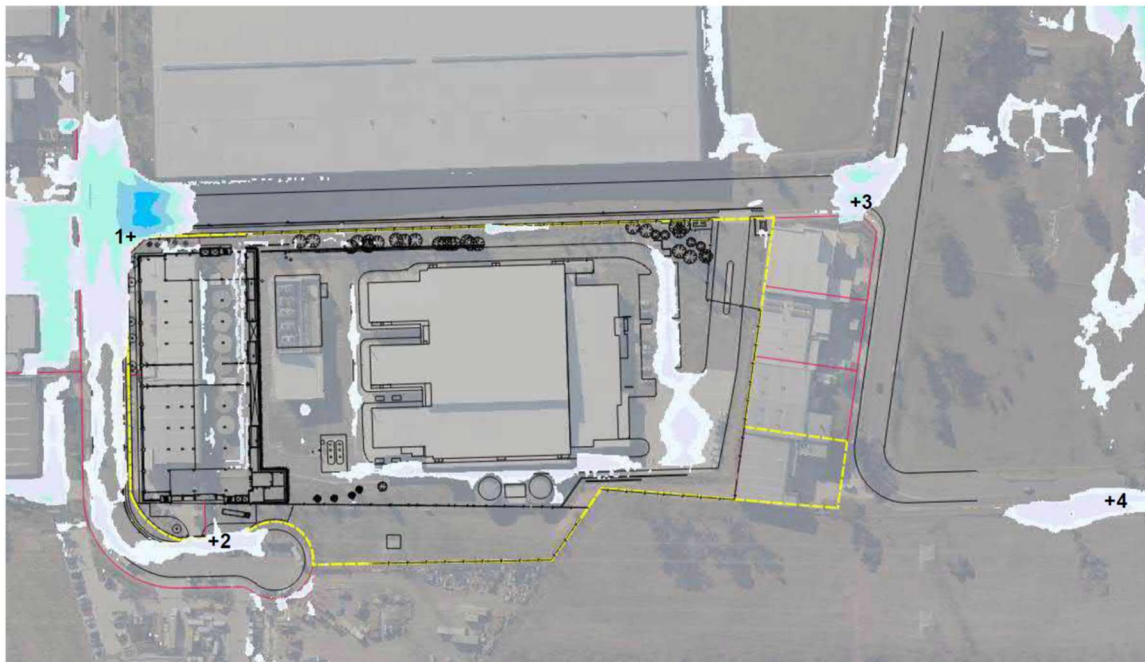


Figure 6.12: Flood Modelling – 1 in 500 year ARI (Source: Calibre)

6.2.8 Soil and Water Pollution

The expanded data centre would not involve processes that entail a significant risk of soil or water pollution, however the project does include the storage and use of diesel fuel for back-up power generation, as well as oil in transformers within the substation.

The diesel would be stored in 5 x 109kL underground storage tanks below the SYD03 data storage facility building. To minimise the potential for soil or water pollution associated with leakage or spillage of diesel fuel:

- the underground storage tanks would be double-skinned;
- the tanks and fuel system would be fitted with a leak detection system; and
- filling points and the generator room would be appropriately bunded.

Storage, handling and management of diesel fuel and all other dangerous goods and hazardous materials (the levels of which are not expected to be significant) would be undertaken in accordance with applicable requirements, including the POEO Regulation 2019, the Dangerous Goods Code and AS 1940-2004: *The storage and handling of flammable and combustible liquids*.

6.3 Noise and Vibration

As detailed in Section 2, there are no sensitive receivers in the vicinity of the site. The closest residential receivers are located in Blacktown and Prospect more than 1 kilometre to the north-east, beyond the M4 Motorway and the Great Western Highway. Other residents are located to the northwest, near the junction of the Great Western Highway and the M7.

The closest publicly accessible open space areas of the Prospect Nature Reserve are located approximately 2.5 kilometres to the south-east, on the other side of Prospect Reservoir.

To assess the potential noise and vibration impacts on these receivers, a Noise and Vibration Assessment has been undertaken for the development by RWDI, and is attached as **Appendix M**. The assessment has been undertaken in accordance with applicable noise guidelines, including the EPA's:



- *Noise Policy for Industry (NPfI)*;
- *Interim Construction Noise Guideline (ICNG)*; and
- *Road Noise Policy*.

A summary of the findings of the assessment is provided below.

6.3.1 Operational Noise

Operational noise emissions have been modelled using CadnaA modelling software. The assessment modelled worst case noise emissions under standard meteorological conditions and conservative noise-enhancing (adverse) meteorological conditions.

The assessment includes modelling of a number of operating scenarios, namely:

- Normal Operation – day-to-day operations including cooling plant (running 24 hours), but excluding back-up generator use;
- Testing Operations – including:
 - Monthly Testing – up to 2 generators operating at a time on load for up to 1 hour each;
 - Annual Testing – up to 6 generators operating at a time for up to 6 hours across 5 separate tests; and
- Emergency Operations – up to 27 generators operating during power outages.

Monthly testing of back-up generators would occur for up to approximately 168 hours per year²², while annual testing would occur for up to approximately 30 hours²³. All testing would be undertaken between the hours of 7am and 6pm, Monday to Saturday.

Predicted operational noise levels at the nearest residential areas, and the nearest industrial receivers, are provided in **Table 6.3** below, along with the applicable criteria. The Noise Catchment Areas (NCAs) used in the assessment are shown on **Figure 6.13**, and the worst case noise contours during emergency operations are shown on **Figure 6.14**.

The modelling indicates that the operation of the project would comply with the applicable noise criteria during all time periods and weather conditions at the surrounding residential and industrial receivers, including during routine scheduled testing and emergency operations.

With regard to Prospect Nature Reserve, as shown on the noise contour plans (see **Figure 6.14**), the elevated noise levels do not extend significant distances into the Reserve, even during emergency operations. As such, and given other surrounding land uses in the area (including Sydney Motorsport Park), the proposal is not expected to result in any significant adverse impacts on the Nature Reserve. Publicly accessible areas within the Reserve are located approximately 2.5 kilometres to the south-east, and are not expected to experience elevated noise levels as a result of the project.

Table 6.3: Operational Noise Predictions dB LAeq(15min)

Table 6.6: Operational Noise Predictions at LAeq(75mm)				
Receiver	Period	Predicted Noise Level		Criteria
		Standard Conditions	Adverse Conditions	
Normal Operations				
NCA01	Night	32	32	38
NCA02	Night	41	41	43
Industrial	When in use	60	60	68

²² Based on 2 generators being tested at a time, or up to 14 separate tests in total per month, at 1 hour each test.

²³ Based on 6 generators being tested at a time, or up to 5 separate tests in total per year, at 6 hours each test



Receiver	Period	Predicted Noise Level		Criteria
		Standard Conditions	Adverse Conditions	
Monthly Testing Operations – 2 generators				
NCA01	Day	32	32	44
NCA02	Day	41	41	58
Industrial	When in use	61	61	68
Monthly Testing Operations – 6 generators				
NCA01	Day	32	32	44
NCA02	Day	41	41	58
Industrial	When in use	61	61	68
Emergency Operations – 27 generators				
NCA01	Night	32	32	38
NCA02	Night	41	41	43
Industrial	When in use	63	63	68

Notes:

With regard to time periods:

- Day is the period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and public holidays;
- Evening is the period from 6pm to 10pm; and
- Night is the period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and public holidays.

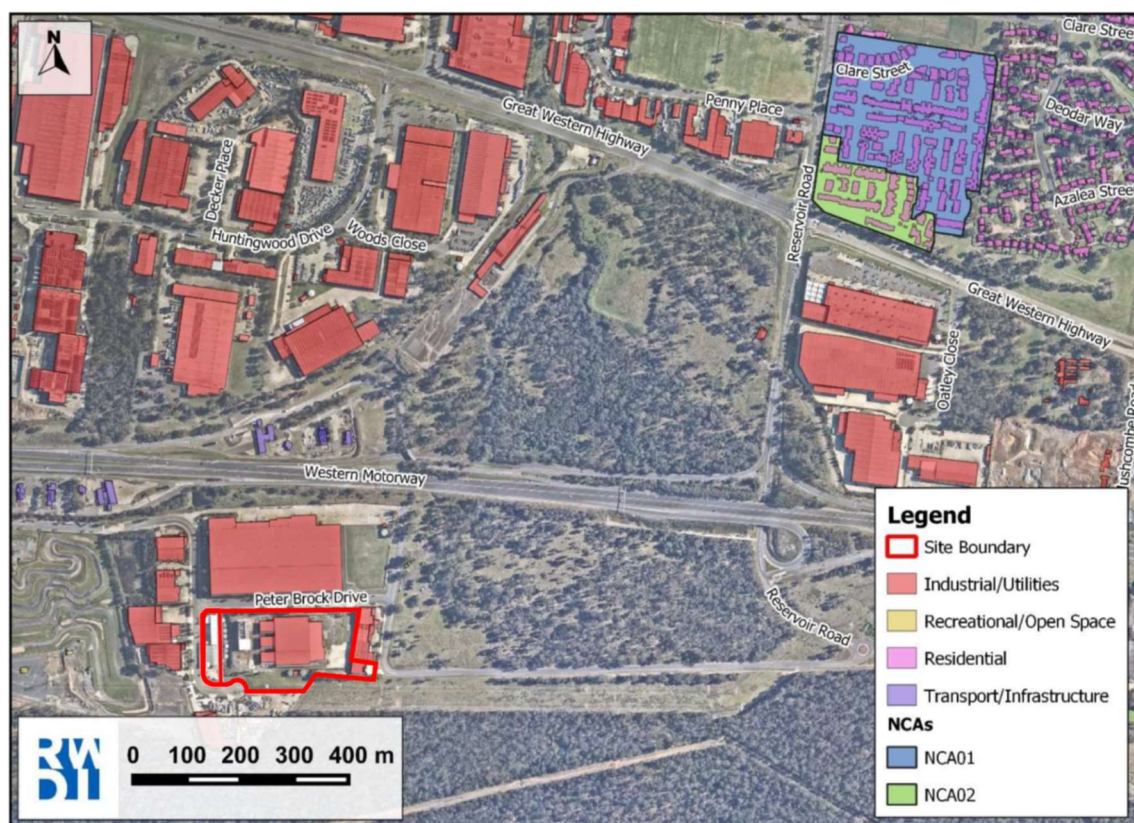


Figure 6.13: Noise Catchment Areas (Source: RWDI)

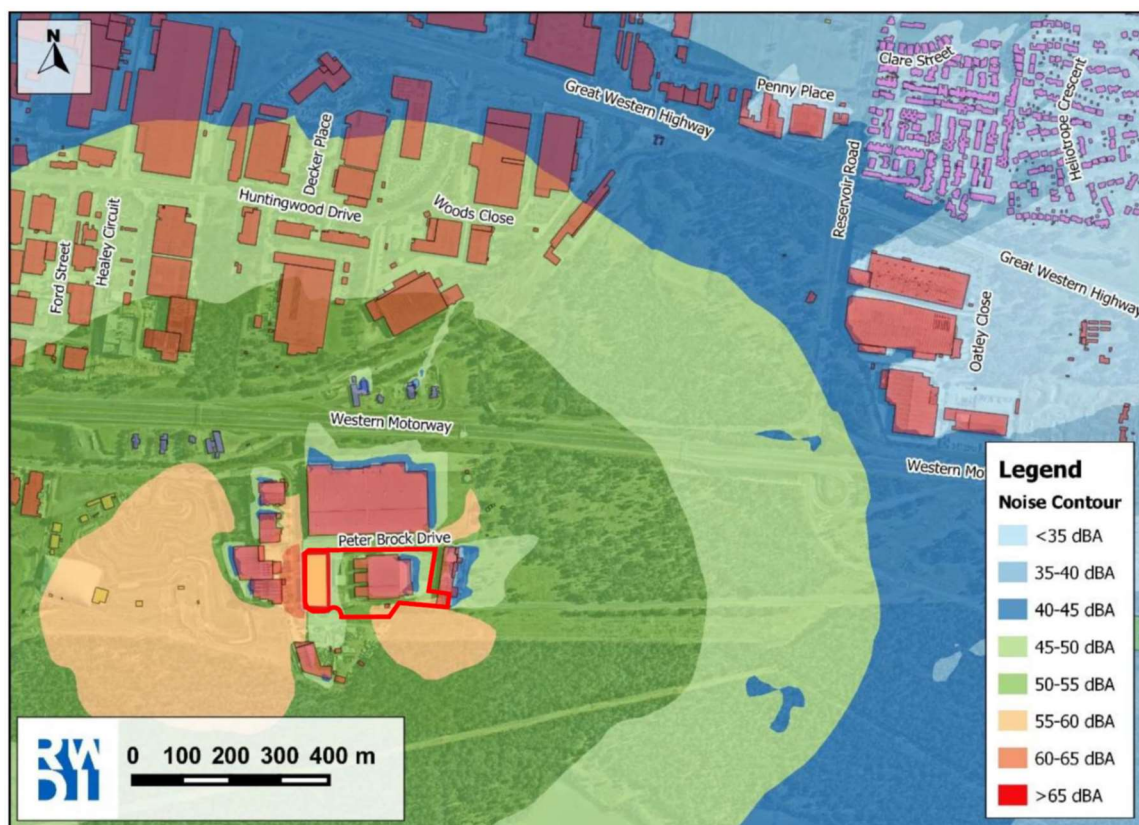


Figure 6.14: Noise Contours During Emergency Operations (Source: RWDI)

Sleep Disturbance

In addition to the above operational noise emissions, which are based on average noise levels over a 15 minute period, sudden or short-lived noise emissions at night have the potential to result in sleep disturbance.

Night time noise emissions associated with the project would predominantly include external plant. These noise sources are typically constant in nature with no clear short-lived (ie. L_{Amax}) component.

The noise assessment found that the predicted noise levels during the night time period would comfortably comply with the applicable sleep disturbance $L_{Aeq(15min)}$ screening levels at the nearest sensitive receivers, and as such no sleep disturbance impacts are expected.

Table 6.4: Sleep Disturbance Assessment dB $L_{Aeq(15min)}$

Receiver	Predicted Noise Level	Screening Level Criteria
NCA01	27	40
NCA02	41	54

6.3.2 Construction Noise

The main construction period for the project is expected to extend for approximately 24 months, with testing and commissioning expected to continue for a further 6 months. The main noise-generating construction works would be the earthworks phase, and to a relatively lesser extent concrete pours and building construction.

Predicted construction noise levels at the nearest residential and industrial receivers are shown in the following table, along with the applicable criteria.



Table 6.5: Construction Noise Predictions dB(A) $L_{Aeq}(15 \text{ mins})$

Receiver	Predicted Noise Level			Noise Management Level
	Earthworks	Concrete Works	Building Works	
NCA01	<20	<20	<20	54
NCA02	<20	<20	<20	67
Industrial	70	68	66	70

The noise predictions indicate that the project's construction noise emissions would comfortably comply with the applicable criteria at the sensitive residential receivers, and would also comply with the applicable criteria at the surrounding industrial receivers.

The noise assessment includes a number of recommended controls to manage construction noise, which include:

- noise management controls, including:
 - site induction training;
 - plant operator instruction;
 - site noise planning, including locating noisy plant away from nearby receivers;
 - scheduling noisy activities so that they do not occur simultaneously, and/or during less sensitive time periods;
 - selecting less noisy plant and equipment where practicable;
- maintaining effective community consultation; and
- maintaining a complaints handling and management system.

DCI would implement these measures as part of a detailed Construction Environmental Management Plan (CEMP) for the development.

Further, DCI would undertake construction activities within the hours stipulated in the ICNG (as reproduced in Section 3.4).

6.3.3 Construction Vibration

The noise assessment includes consideration of vibration-related impacts associated with the proposed construction works, with reference to applicable cosmetic building damage and human comfort criteria.

Vibration intensive activities that may occur as part of the construction works may include the use of hydraulic hammers, piling and vibratory rollers.

Based on the safe working distances in TfNSW's *Construction Noise and Vibration Strategy*, and the separation distances between the site and surrounding buildings, the noise assessment concludes that vibration impacts associated with the project would be negligible.

6.3.4 Traffic Noise

There are no residences in proximity to roads between the Raceway Precinct and the arterial road network (ie. east via Reservoir Road to the M4, and west via Brabham Drive to the Great Western Highway). Accordingly, the noise assessment concludes that road traffic noise associated with the development would be insignificant and consistent with the requirements of the *NSW Road Noise Policy*.



6.4 Air Quality and Greenhouse Gas

6.4.1 Air Emissions

The main sources of air emissions associated with the project would be dust emissions during construction works, and emissions from vehicles and plant during operations.

Dust emissions during construction works are able to be managed in accordance with standard best practice techniques, including:

- minimising the area of disturbance as far as practicable during works;
- minimising drop heights for materials being worked on the site;
- keeping exposed surfaces moist at all times;
- rehabilitating/revegetating disturbed surfaces as soon as practicable; and
- ensuring that trucks are covered and do not track sediment onto public roads.

DCI would implement these measures as part of the detailed CEMP for the development.

Emissions from vehicles and plant during construction and routine operations would be relatively minor, given the modest traffic volumes associated with the project, and the nature of plant in the facility, which does not involve the generation of any significant emissions during normal operations.

The main source of emissions during operations would be those associated with back-up power generation, which would only occur during non-routine operations (ie. power outages and scheduled testing).

As outlined in Section 3.9.3, the SYD03 data storage facility would include 27 x 2.65MW back-up diesel generators on the lower levels. These generators would complement the 4 x 2.2MW and 2 x 2MW generators for the existing SYD01 data storage facility.

To assess the potential air quality impacts associated with the back-up power generation, an Air Quality Impact Assessment has been prepared by Todoroski Air Sciences (TAS), and is attached as **Appendix N**. The assessment was undertaken in accordance with applicable guidelines, including the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Approved Methods).

The assessment includes review of the existing meteorological and air quality environment surrounding the site, and modelling of potential air quality impacts of the back-up power generation in the surrounding areas and at sensitive residential receivers, the closest of which are located more than 1 kilometre to the north-east, across the M4 Motorway and Great Western Highway.

Review of local meteorology indicates that winds are generally evenly distributed on an annual basis, with the greatest winds from the south-west. A summary of local air quality (based on data from the DPE's Prospect monitoring station) is presented in the following table.

Table 6.6: Existing Local Air Quality, $\mu\text{g}/\text{m}^3$

Pollutant	Averaging Period¹	Background Level	Criteria	Criteria Source
Very fine particulate matter (PM _{2.5})	24-hour	15.1	25	EPA Approved Methods
Fine particulate matter (PM ₁₀)	24-hour	31.6	50	EPA Approved Methods
Nitrogen dioxide (NO ₂)	1-hour	varying	246	EPA Approved Methods
			164	NEPM ²

¹ The assessment did not include consideration of annual average air quality, as the emissions during infrequent back-up power generation would not affect air quality on an annual average basis.

² National Environment Protection (Ambient Air Quality) Measure.



As indicated in the table, local air quality generally complies with applicable air quality goals.

The dispersion modelling for the project assessed two scenarios to represent the operation of the back-up generators during worst case emergency operations:

- Scenario 1 – all generators operating at 50% load emissions rate to represent a brief mains power outage; and
- Scenario 2 – 23 generators operating at 75% load emissions rate, and 3 generators operating at 100% load emissions rate (with 1 generator out of service), to represent a major power outage. The existing SYD01 data centre would also operate 4 generators concurrently during these times.

The modelling predictions are shown on **Figures 6.15 to 6.17**, which represent the worst case contours for project-related emissions. It is noted that Scenario 1 produced the worst case results for particulate matter (PM_{2.5} and PM₁₀), while Scenario 2 produced the worst case results for NO₂. This is due to the operational efficiency of the generators operating under various loads.

The modelling predictions for PM_{2.5} and PM₁₀ indicate that project-specific levels of approximately 5µg/m³ would encroach on the residential area to the north-east of the site. Applying this to the estimated background levels (in **Table 6.6**), the predicted worst case cumulative levels would remain below the respective EPA impact assessment criteria of 25µg/m³ for PM_{2.5} and 50µg/m³ for PM₁₀. The air quality assessment notes that the modelling predictions assume the generators are operating for a continuous 24-hour period, which is unlikely to occur.

The predicted cumulative NO₂ concentrations (ie. background plus project emissions) indicate that NO₂ levels at the residential area to the north-east would remain below the NSW EPA impact assessment criterion of 246µg/m³. The NEPM standard for NO₂ of 164µg/m³ would encompass a small part of the residential area, however the air quality assessment notes that the NEPM air quality standards are not designed to be applied to specific projects but rather apply to the average exposure to air pollutants of the general population.

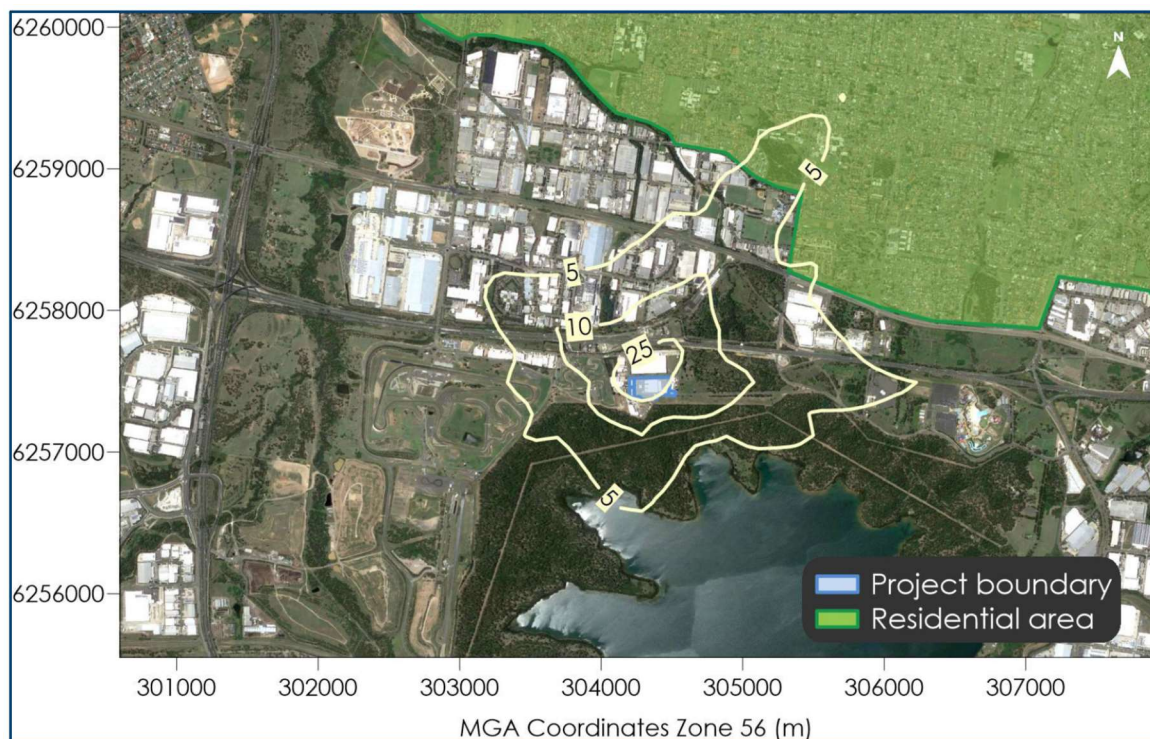


Figure 6.15: Predicted Project Only 24-Hour PM_{2.5} Contours – Scenario 1 (Source: TAS)

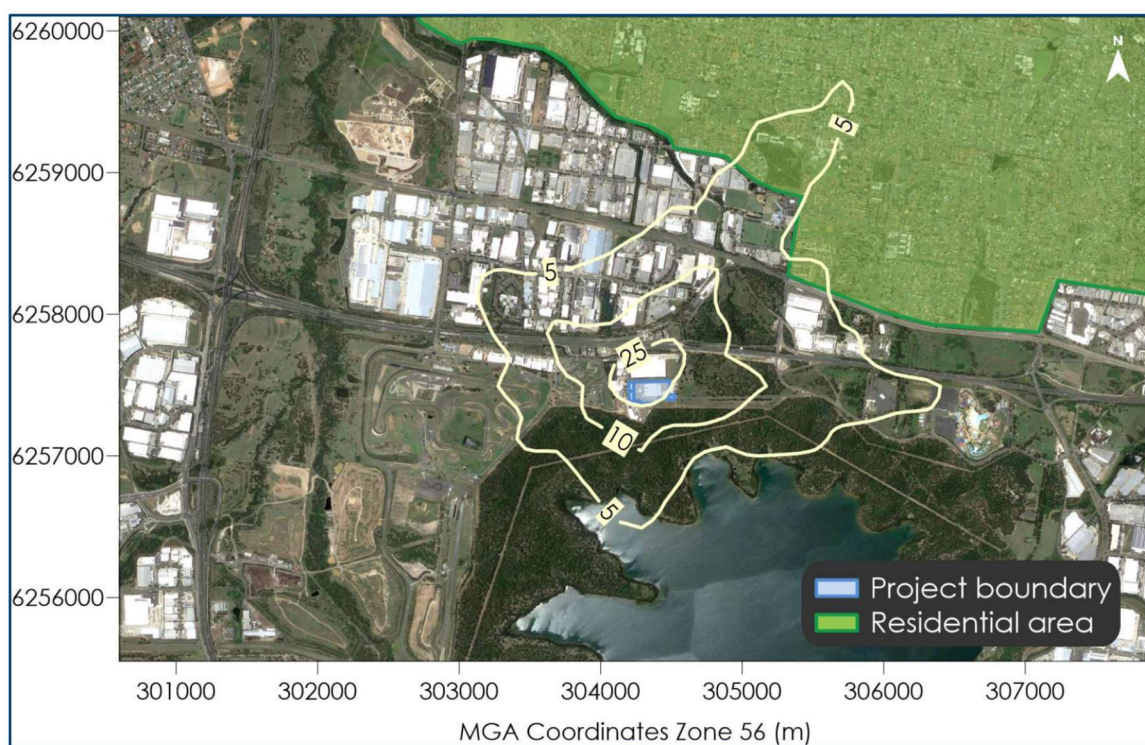


Figure 6.16: Predicted Project Only 24-Hour PM_{10} Contours – Scenario 1 (Source: TAS)

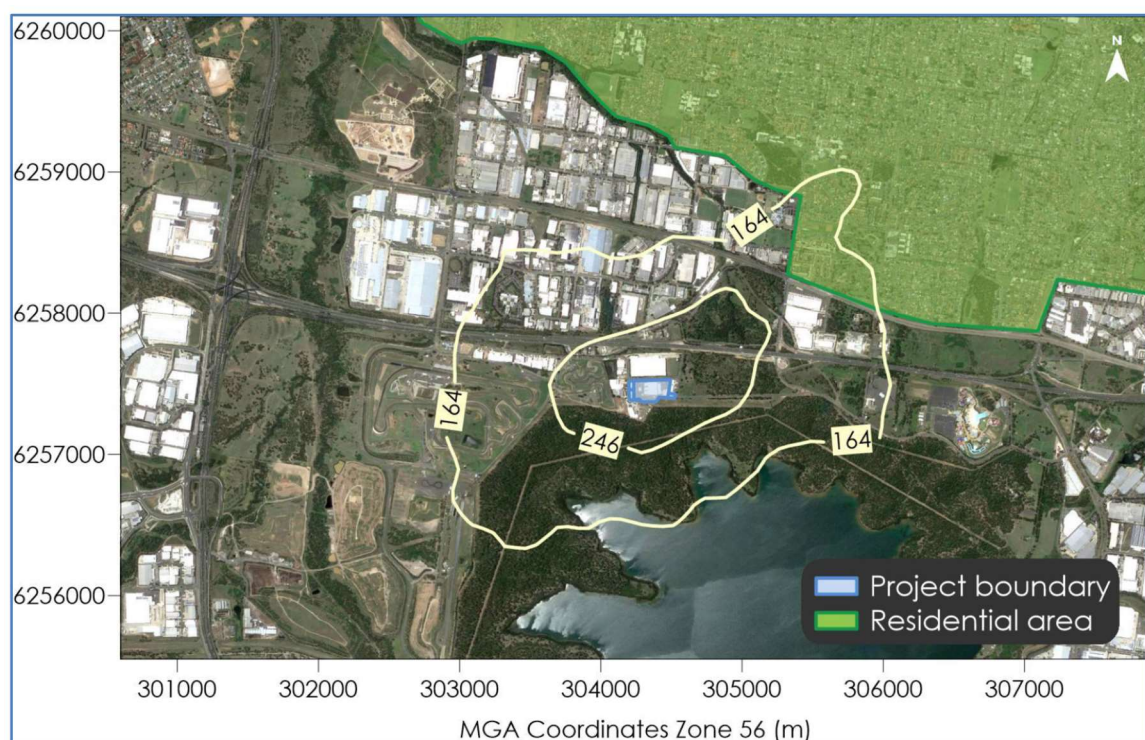


Figure 6.17: Predicted Cumulative NO_2 Contours – Scenario 2 (Source: TAS)

The assessment also notes that the probability of a worst case impact (with worst case meteorology and worst case emissions) coinciding with an emergency power outage would be extremely low.



6.4.2 Odour

The expanded data centre would not involve to storage or use of any significant odour-generating substances.

6.4.3 Greenhouse Gases and Energy Efficiency

An Energy and Greenhouse Gas Assessment has been undertaken for the project by Alliance Consulting Engineers, and is attached as **Appendix I**.

By far the greatest source of greenhouse gas (GHG) emissions associated with the project would be indirect (or 'Scope 2') emissions associated with electricity use at the data centre. Other GHG emission sources of note would include direct (or 'Scope 1') emissions associated with generator use, and emissions associated with employee commuting and delivery of goods and materials.

Energy Rating Systems

The main sources of energy use associated with the operation of the data centre would be:

- IT equipment load;
- air conditioning and ventilation systems;
- power conversions (UPS, transformers); and
- lighting.

In order to plan and assess suitable energy efficiency measures, the assessment considers two key energy rating systems, namely:

- Power Usage Effectiveness (PUE); and
- National Australian Built Environment Rating System (NABERS).

The NABERS rating for a data centre is determined by the facility's PUE, which is the most commonly used metric for energy performance amongst IT projects globally.

PUE is defined as:

$$\text{PUE} = \text{Total Facility Power In} / \text{Total IT Equipment Power Use}$$

The following table provides a summary of the NABERS ratings and PUE for data centres currently operating in Australia.

Table 6.7: Industry NABERS Scores

Industry Scores	NABERS	PUE
Worst	3.5	1.7
Average	4	1.5
Best	5	1.3

Target Energy Ratings

DCI and its parent company Brookfield have committed to reaching net zero GHG emissions by 2050 or sooner, in line with the Paris Agreement and Australian Government targets.

To this end, DCI has adopted industry best practice energy performance targets for the proposed data centre expansion, namely:

- NABERS $\geq$ 5 Stars; and
- PUE $\leq$ 1.3.



Energy Minimisation Strategies

Based on these targets, the Energy and GHG Assessment includes a number of energy savings measures that would be adopted for the SYD03 data storage facility. These include:

Active measures:

- centralised chilled water system;
- adiabatic chillers for the generation of chilled water;
- optimisation of IT operation and indoor supply air temperature;
- dedicated dehumidification units;
- reuse of return chilled water for tempering outside air;
- equipment selections optimised for the demand needs;
- variable speed drives (VSDs) on compressors, pumps and fans;
- heat recovery variable refrigerant volume/flow (VRV/VRF) air conditioning units to serve the offices spaces;
- Energy management System (EMS), providing monitoring and analytics on all energy consuming equipment;
- energy efficient lighting and lighting controls; and
- energy efficient hot water systems;

Passive measures:

- optimisation of building orientation to minimise solar heat gain;
- complying with all aspects of BCA Section J;
- high performance glazing and external shading;
- elimination of glazing to IT spaces;
- optimising IT operation temperatures; and
- hot aisle containment, separating heat generated at the IT equipment from supply air.

In addition to these energy savings measures, and as part of its commitment to achieving net zero GHG emissions by 2050, DCI has committed to sourcing at least 50% of its Scope 2 electricity supplies from renewable sources from 2025. This renewable energy target would gradually increase over the life of the project, with 100% of electricity supplies expected from renewable sources by 2050.

GHG Emissions

With the adoption of these measures, the Energy and GHG Assessment includes an assessment of the GHG emissions that would be generated by the proposed facility, in accordance with the methodology in the Australian Government's *National Greenhouse Accounts Factors*.

A summary of the total GHG emissions that would be generated by the facility is presented in the following table. The table includes predicted annual emissions based on DCI's existing energy minimisation strategies (as at 2025), as well as expected emissions over the operational life of the facility, assuming an operational life of 50 years and adoption of further strategies to reflect DCI's net zero emission target.

Table 6.8: Predicted GHG Emissions

Scope	Source	Annual GHG Emissions		Lifecycle GHG Emissions	
		Emissions (ktCO ₂ -e)	Portion of Total (%)	Emissions (ktCO ₂ -e)	Portion of Total (%)
Scope 1	Diesel fuel use	1.3	0.9	65.1	3.4
	Refrigeration	0.5	0.4	27.1	1.4
Scope 2	Electricity	126.1	89.3	1,638.8	84.9
Scope 3	Electricity transmission losses	11.2	7.9	145.2	7.5
	Transport	0.7	0.5	34.7	1.8



Scope	Source	Annual GHG Emissions		Lifecycle GHG Emissions	
		Emissions (ktCO _{2-e})	Portion of Total (%)	Emissions (ktCO _{2-e})	Portion of Total (%)
Minor Sources		1.4	1.0	19.1	1.0
Total		141.2	100	1,930.1	100

As indicated in the table, electricity consumption and related transmission losses are by far the largest contributor to GHG emissions associated with the project, generating more than 95% of the emissions associated with the facility.

These emissions are predicted to decline significantly as DCI moves towards full decarbonisation of power sources by 2050. Beyond this point, these electricity related emissions are expected to account for only 3.3% of the facility's total emissions.

The predicted annual GHG emissions associated with the facility would be minor compared to total NSW and national emissions, representing some 0.1% of NSW emissions, and 0.02% of Australia's national emissions.

The Energy and GHG Assessment also includes a comparison of the annual GHG emissions associated with the project, benchmarked against other data centres in Australia. As shown in the following table, the proposed energy minimisation strategies would realise significant GHG emissions savings of up to 30 percent compared to contemporary data centre facilities in Australia.

Table 6.9: Industry GHG Emissions Comparison

	NABERS	PUE	Total Emissions (ktCO _{2-e})	Total Emissions Reduction (%)
SYD03 Target	5	1.3	1,930.1	-
Industry Average	4	1.5	2,204.6	14%
Industry Worst	3.5	1.7	2,479.1	28%

The Energy and GHG Assessment indicates that the GHG emissions associated with the proposed data centre expansion are minor within the context of NSW and national emissions, and that with the adoption of the proposed energy minimisation measures, the predicted emissions would be considerably below those of contemporary data centres in Australia.

6.5 Flora and Fauna

The site is fully developed for the existing industrial purposes, and does not contain any remnant native vegetation. All pre-existing vegetation (which comprised only a small number of isolated trees) was removed during the development of the existing data centre and light industrial facilities in the period from approximately 2009 to 2010.

Small areas of planted native vegetation and non-native vegetation exists as landscaping for the existing developments (see **Figure 2.3**), generally within the road setbacks and around the perimeter of the site. All of this landscaping is relatively young (approximately 10 years or less), having been planted as part of the development of the industrial facilities. No significant habitat areas exist on the site (eg. remnant bushland, riparian or aquatic areas).

Given the fully developed nature of the site, and the relatively small and young age of site landscaping, no significant habitat for threatened species or ecological communities is expected on the site.



The Department has determined that the project is not likely to have any significant impact on biodiversity values, and that a Biodiversity Development Assessment Report (BDAR) under the *Biodiversity Conservation Act 2016* (BC Act) is not required for the proposal (see **Appendix A**).

Nonetheless, some of the planted on-site landscaping would be removed for the project (as shown on the landscaping plans in **Appendix C**). No off-site vegetation disturbance is required for the proposal.

To mitigate the removal of the existing landscaping, and to provide high quality landscaping for the expanded data centre, a detailed Landscape Plan has been prepared for the proposal by Studio IZ. The landscaping principles are discussed in Section 6.2 above.

Whilst the site does not contain any significant biodiversity values, Prospect Nature Reserve is located directly to the south-east of the site. The vegetated parts of the reserve are separated from the site by the Endeavour Energy high voltage transmission lines, with the vegetation located approximately 60 metres from the developable²⁴ parts of the site at the closest point.

In consultation during preparation of the EIS, NPWS noted that the Nature Reserve contains significant biodiversity values, including critically endangered ecological communities such as Cumberland Plain Woodland, threatened plants such as *Pimelea spicata* and *Acacia pubescens*, migratory bird habitats and habitats of several other threatened fauna, such as frogs, bats and waterbirds.

As such, NPWS recommended that consideration be given to indirect biodiversity impacts on the Nature Reserve, particularly in relation to noise and lighting.

With regard to noise, NPWS recommended that construction works are limited to the standard day-time hours under the EPA's *Interim Construction Noise Guideline*, and that measures are proposed to mitigate noise associated with the back-up power generators.

As outlined in Section 3.6, DCI would restrict construction activities to the standard hours in the ICNG, and would implement measures to reduce noise from the generators as far as practicable (through shielding/enclosure). As outlined in Section 6.3, noise from the facility, including operation of the generators, is not predicted to result in significant noise levels within the Reserve.

With regard to lighting, NPWS recommended that shielding of lighting towards the Reserve is implemented during construction and operation to minimise impacts on nocturnal species.

The expanded data centre has been designed to minimise lighting towards the Nature Reserve, with no significant windows or external lighting directed into the reserve. The proposal would include some external security lighting, in a similar manner as the existing data centre, however all such lighting would be installed in accordance with applicable standards, including *AS 4282(INT) - Control of Obtrusive Effects of Outdoor Lighting*.

The proposal is not expected to result in any other significant indirect impacts on the Nature Reserve, such as by way of erosion or sedimentation, or pests and weeds. As outlined in Section 6.2, the site is located downslope of the Nature Reserve, and as such there is no drainage from the site into the reserve.

²⁴ Non-developable parts of the site (ie. within the Endeavour Energy high voltage transmission line easement), are located approximately 40 metres from the vegetated parts of the Nature Reserve.



6.6 Heritage

6.6.1 Aboriginal Heritage

Aboriginal cultural heritage assessment has been addressed as part of the estate development for the Raceway Precinct.

In this regard, the Raceway Precinct was subject to two main Aboriginal Heritage Assessments as part of the planning and development of the precinct, namely assessments by:

- Kohen and Knight in 2002; and
- Ngara Consulting in 2005.

These assessments identified 3 Aboriginal sites/objects on the precinct site, including:

- an artefact scatter (PA-1 (Site A)) in the western area of the precinct;
- an open camp site/artefact scatter (PB-1) in the eastern area of the precinct (within the existing data centre site); and
- a possible scarred tree (PB-2) in the eastern area of the precinct (to the north of the site).

A subsequent archaeological excavation of Site PB-1 was undertaken by Total Earth Care on behalf of Investa in 2006 (report dated July 2007). The excavation recovered 118 artefacts from Site PB-1. The assessment also reviewed Sites PA-1 and PB-2, and found that that artefact scatter (PA-1) was located outside the precinct site and highly disturbed, and the scarring on the tree (PB-2) was found to be of non-Aboriginal origin.

Based on this work, in December 2006 the then Department of Environment and Climate Change issued a consent to destroy all remaining Aboriginal sites/objects within the Raceway Precinct site, under section 90 of the *National Parks and Wildlife Act 1974* (Consent No.2552).

The precinct and the site has since been developed in accordance with the section 90 consent.

Notwithstanding the consent, DCI engaged Eco Logical to prepare an Aboriginal Heritage Assessment for the proposal, which is attached as **Appendix O**. The assessment includes a review of the previous Aboriginal cultural heritage assessments undertaken on the site and surrounds, predictive modelling of potential archaeological material, and site inspection.

Consultation has also been undertaken with the Deerubbin Local Aboriginal Land Council (LALC) during preparation of the EIS (see Section 5). No comments were received from the LALC.

The assessment found that there is low to nil potential for archaeological resources to remain on the site, given the previous disturbance and fully developed nature of the site. No Aboriginal objects were identified during the visual inspection.

The assessment concludes that, due to the previous disturbance, the proposal would not have any impact on Aboriginal sites and objects, and that no further assessment is warranted. The assessment recommends that an Unexpected Finds Protocol is prepared to manage the discovery of any Aboriginal objects, in the unlikely event that this occurs. Details of the protocol are outlined in the following section.

6.6.2 Historical Heritage

The site is not identified as a heritage item, and no items of historical heritage significance have been identified in the Raceway Precinct.



However, the Prospect Nature Reserve, immediately to the south-east of the site, is identified as a heritage item on the State Heritage Register (SHR Listing No.01370), the Western Parkland City SEPP, and Sydney Water's Section 170 heritage register (see **Figure 6.18**).



Figure 6.18: Heritage Items (Source: NSW Planning Portal)

The proposal does not involve any disturbance or development within the Prospect Nature Reserve²⁵. Nonetheless, a Heritage Impact Statement has been prepared by Eco Logical to assess the potential indirect impacts of the proposal on the heritage values of the Nature Reserve. The assessment is attached in **Appendix P**, and a summary of the assessment is provided below.

The Heritage Impact Statement notes that Prospect Reservoir is historically significant at the State level as a central element of Sydney's water supply system. The Reservoir has continued to supply water to Sydney for over 120 years, and generally still operates in the same way as it was originally constructed. It is considered to be an outstanding achievement in civil engineering technology for its time.

The assessment notes that the proposed works are located outside the curtilage of the heritage item and would have no direct heritage impact. The function of the Reservoir would not be altered by the proposal, and no water supply assets would be removed, obscured, or altered as a result of the proposal. The site itself is considered to have no archaeological potential.

²⁵ As outlined in Section 3.9, DCI is also proposing to connect the proposed substation to the existing overhead Endeavour Energy high voltage electricity transmission lines to the south of the site, which are located within the Prospect Nature Reserve. These off-site works are being undertaken under separate approval, and do not form part of the proposed development.



Further, the proposal would not affect important views to and from the Reservoir, nor would it be visible from the publicly-accessible recreation areas around the Reservoir. Therefore, the proposal is not expected to have any visual-related or other indirect heritage impacts on the Reservoir.

As no direct (physical) or indirect (visual) impacts would occur to the significance of the State listed Prospect Reservoir and associated nature reserve, the Heritage Impact Statement concludes that the project is not expected to cause any impact to the site's heritage significance.

Notwithstanding, the Heritage Impact Statement recommends that DCI prepares and implements a standard Unexpected Finds Protocol during construction to manage any unexpected heritage items encountered during the works. Such items could include:

- Aboriginal objects (eg. stone artefacts);
- historic (non-Aboriginal) heritage items; or
- human remains.

Procedures to be implemented in the event that unexpected finds are uncovered during the works would include:

- stop all work in the immediate area of the item and notify the project manager;
- establish a 'no-go zone' around the item and inform all site personnel about the no-go zone;
- no work is to be undertaken within this zone until further investigations are completed;
- engage a suitably qualified and experienced archaeologist to assess the finds;
- notify Heritage NSW if the finds are of local or state heritage significance, and seek applicable approvals prior to recommencement of works in the area; and
- if the item is assessed as not a 'relic', a 'heritage item' or an 'Aboriginal object' by the archaeologist, work can proceed with advice provided in writing.

The Unexpected Finds Protocol would be prepared and implemented as part of the Construction Environmental Management Plan (CEMP) for the project.

6.7 Traffic and Parking

A Traffic Assessment has been undertaken for the development by Transport & Urban Planning, and is attached as **Appendix Q**. A summary of the assessment is provided below.

6.7.1 Existing Road Network

The site has direct and extended frontage to Peter Brock Drive and Raceway Place, both of which form part of the internal road network of the Raceway Precinct.

Peter Brock Drive is a two lane collector road which provides direct access to Reservoir Road to the east and Brabham Drive to the west. Both Reservoir Road and Brabham Drive are distributor roads which provide efficient access to Sydney's arterial road network, including the M4 and M7 Motorways and the Great Western Highway, without the need to transport through residential areas.

6.7.2 Access and Internal Circulation

Main vehicular access to the expanded data centre would be provided via the existing data centre driveway from Peter Brock Drive (North). Access is controlled via sliding security gates and a central median.

The existing access driveway provides a single access for all vehicles (cars and trucks), although internal car parking areas are separated from heavy vehicle service areas. Internal circulation is provided around the facility via existing internal roads, with circulation generally in a clockwise direction around the facility.



A second minor access for service vehicles is proposed to be provided to the cul-de-sac on Raceway Place, to the south of the proposed SYD03 data storage building, with access controlled via sliding security gate.

Access to the proposed substation would be provided via a driveway from Peter Brock Drive (East), in a similar location as the existing driveway servicing this lot.

The proposal involves minor changes to the internal service roads and fire access road to reflect the revised layout of the facility, and provide additional car parking. The internal layout has been designed to allow all cars and trucks to enter and exit the site in a forward direction.

The proposal also involves additional pedestrian accesses to and within the site, as outlined in Section 3.9.

The traffic assessment includes consideration of the site access, parking and internal circulation arrangements against the relevant Australian Standards (including AS2890), concluding that the internal layout is appropriate, efficient and compliant with the relevant standards (see swept paths for truck movements in **Appendix Q**).

6.7.3 Traffic Generation and Impacts

Operational Traffic

The traffic assessment includes traffic counts on the road network surrounding the site, including at the:

- intersection of Peter Brock Drive / Auto Place;
- intersection of Peter Brock Drive / Reservoir Road;
- intersection of Peter Brock Drive / Brabham Drive / Ferrers Road; and
- the existing site driveway at 90 Peter Brock Drive.

The assessment found that the existing roads and intersections generate moderate traffic during the AM and PM peak hours, and that the road network performance is satisfactory. Traffic generation associated with the existing SYD01 data centre is low, with a peak of 16 movements per hour in the AM peak hour, and 9 movements in the PM peak hour.

Adopting similar traffic generation rates for the proposed expansion, the traffic assessment calculates that the proposal would be expected to generate an additional 36 vehicle trips in the AM peak hour and 21 trips in the PM peak hour.

The assessment includes SIDRA modelling of the performance of the relevant intersections, based on the project-related traffic generation. The results of the modelling are presented in the following table, and indicate that the intersections would perform satisfactorily, with good levels of service and minor delay.

Table 6.10: Intersection Modelling Results

Intersection	Control	AM Peak			PM Peak		
		Degree of Saturation	Delay (sec)	Level of Service	Degree of Saturation	Delay (sec)	Level of Service
Existing Conditions							
Peter Brock Drive / Auto Place	Priority	0.137	5.7	A	0.082	5.4	A
Peter Brock Drive / Reservoir Road	Round-about	0.345	5.8	A	0.228	5.0	A



<i>Intersection</i>	<i>Control</i>	<i>AM Peak</i>			<i>PM Peak</i>		
		<i>Degree of Saturation</i>	<i>Delay (sec)</i>	<i>Level of Service</i>	<i>Degree of Saturation</i>	<i>Delay (sec)</i>	<i>Level of Service</i>
Peter Brock Drive / Brabham Drive / Ferrers Road	Round-about	0.412	6.4	A	0.486	6.7	A
Peter Brock Drive / Site Access to No.90	Priority	0.080	0.2	A	0.047	0.4	A
<i>With Proposal</i>							
Peter Brock Drive / Auto Place	Priority	0.141	5.7	A	0.089	5.4	A
Peter Brock Drive / Reservoir Road	Round-about	0.352	5.8	A	0.229	5.1	A
Peter Brock Drive / Brabham Drive / Ferrers Road	Round-about	0.420	6.4	A	0.487	6.7	A
Peter Brock Drive / Site Access to No.90	Priority	0.088	0.9	A	0.050	0.9	A

Construction Traffic

The proposal would also generate construction-related traffic during the construction period, which is expected to extend for 24 months for the main construction period (Stages 1 and 2). The traffic assessment estimates that the construction phase would generate an average of approximately 4-5 heavy vehicle deliveries per day, and up to about 30 deliveries per day during short periods (eg. during concrete pours).

Construction traffic would predominately access the site via Raceway Place during Stages 1 and 2 (ie. construction and fitout of the SYD03 data centre), and Peter Brock Drive during Stages 3 and 4 (ie. construction of the ancillary office building). Construction traffic would access the substation site directly from Peter Brock Drive (East). No construction traffic would be required to access the site through residential areas.

As such, construction-related traffic is unlikely to result in any significant traffic or safety issues. Nonetheless, a Construction Traffic Management Plan (CTMP) would be prepared to appropriately manage traffic during construction works. The plan would include best practice traffic management measures, including:

- minimising disruption to all road users during the construction period;
- providing traffic control to regulate construction traffic movements when required;
- ensuring construction traffic uses the industrial estate access roads, and minimising traffic during peak traffic periods where practicable;
- maintaining property access throughout the construction period with suitable alternative access arrangements provided otherwise; and
- providing clear signage and alternate pedestrian routes if footpaths are affected.

6.7.4 Parking

The proposal would increase the total parking supply on the site to 100 formal car parking spaces (including 2 disabled spaces). All parking spaces would be appropriately sealed and linemarked in accordance with Australian Standards (AS2890).

The proposed parking supply is based on the predicted employment associated with the expanded data centre (ie. 100 personnel), rather than on the generic floorspace-based rates provided in the



Raceway Precinct Plan or the RMS' *Guide to Traffic Generating Development*, which do not provide relevant parking rates for data centre facilities.

In this regard, the traffic assessment notes that the operation of data centres is not like other industrial/office land uses, as the majority of the floor area is used for computer equipment and storage devices, and is not frequented by employees.

The assessment includes a merits-based assessment of the proposed parking supply, which included parking surveys of the existing data centre car park (using aerial photography). The surveys showed that the parking demand for the existing facility (which provides 43 parking spaces) varies from 5 cars to 24 cars, which demonstrates that there is significant spare capacity in the existing car park and that parking demand reflects employee and customer staff numbers.

The traffic assessment concludes that, based on the predicted employment levels and highest driver rate of 100%, the proposed parking supply would adequately satisfy the parking demands of the proposed development.

6.7.5 Pedestrians, Cycling and Public Transport

The estate road network provides existing pedestrian and cycling facilities, including a:

- shared path in Peter Brock Drive along the frontage to the site, which extends to Brabham Drive;
- pedestrian path in Raceway Place along the frontage to the site; and
- eastbound bike lane in Peter Brock Drive between Auto Place and Reservoir Road.

Bus stops are located on Peter Brock Drive along the frontage to the site, which provide regular services (Route 724) to Blacktown and surrounding areas.

The proposal would provide additional pedestrian accesses within the site to connect the various facilities, including a new:

- elevated pedestrian bridge connecting Level 3 of the ancillary office building to the new SYD03 data storage building;
- covered ground level pathway connecting the existing SYD01 data storage facility with the new SYD03 data storage building and ancillary office building;
- ground level pathway connecting the SYD03 data storage facility to Peter Brock Drive (North); and
- internal ground level pathway connecting the new substation to the main data centre site.

Bicycle parking racks would also be provided within the site.

The traffic assessment considers that the pedestrian and cycling network in the vicinity of the site is good, and that the proposal is not expected to have any negative impact on this network. It also notes that the development may attract a proportion of trips by public transport, which would assist the viability of public transport services in the area.

6.8 Wastes and Hazards

6.8.1 Wastes

A Waste Management Plan for the construction and operational phases of the proposed development has been prepared by PJEP, and is attached in **Appendix R**. This plan has been prepared in accordance with the waste avoidance, reduction and recycling principles in the *NSW Waste Avoidance and Resource Recovery Strategy 2014*.



Construction Waste

The construction phase of the proposed development would generate wastes associated with:

- demolition of existing buildings and improvements;
- clearing (of planted landscaping);
- excavation; and
- facility construction and infrastructure development.

The existing industrial facilities on the expansion lots would be demolished to facilitate the data centre expansion. All of these facilities are of recent construction (ie. approximately 10 years), and are used for warehousing and light industry only. As such, the buildings and structure are not expected to contain any significant quantities of hazardous materials or substances.

Green waste generated during clearing would be mulched on-site for beneficial reuse either on-site or off-site.

The earthworks have been designed on a cut-to-fill basis, however approximately 14,650m³ of excess fill would be generated and would be required to be exported from the site, for beneficial reuse off-site.

Construction of the expanded data centre facilities and infrastructure would also generate waste. Wastes would be avoided as far as practicable through proper construction planning, and recyclable wastes would be separated and recycled as per the Waste Management Plan.

Operational Waste

The operation of the expanded data centre is not expected to generate significant amount of waste. The main waste types and anticipated disposal methods include:

- cardboard and paper – separated for off-site recycling;
- plastic packaging – separated for off-site recycling (where possible);
- recyclable glass, metal and plastic containers – separated for off-site recycling;
- obsolete or waste/reject product, including e-waste – beneficially reused (on-sold) where possible, or disposed to licensed waste management facility;
- non-recyclable general waste (inc. putrescible waste) – to licensed waste management facility;
- hazardous solid waste (inc. any dangerous goods) – to licensed waste management facility;
- liquid waste from kitchenettes – to sewer in accordance with Sydney Water requirements; and
- ablutions waste – to sewer.

6.8.2 Bushfire Hazard

Prospect Nature Reserve to the south-east of the site is identified as bushfire prone land on the NSW Rural Fire Services' (RFS) and Council's bushfire prone maps, with a buffer area extending into part of the site (see **Figure 6.19**).

The RFS' *Planning for Bush Fire Protection* guideline applies to development applications on bushfire prone land, and sets out requirements for assessment and management of bushfire risk at the planning stage of development.

Given the existing bushfire risk, a bushfire assessment has been undertaken for the proposal by Australian Bushfire Protection Planners (ABPP), and is attached in **Appendix S**.

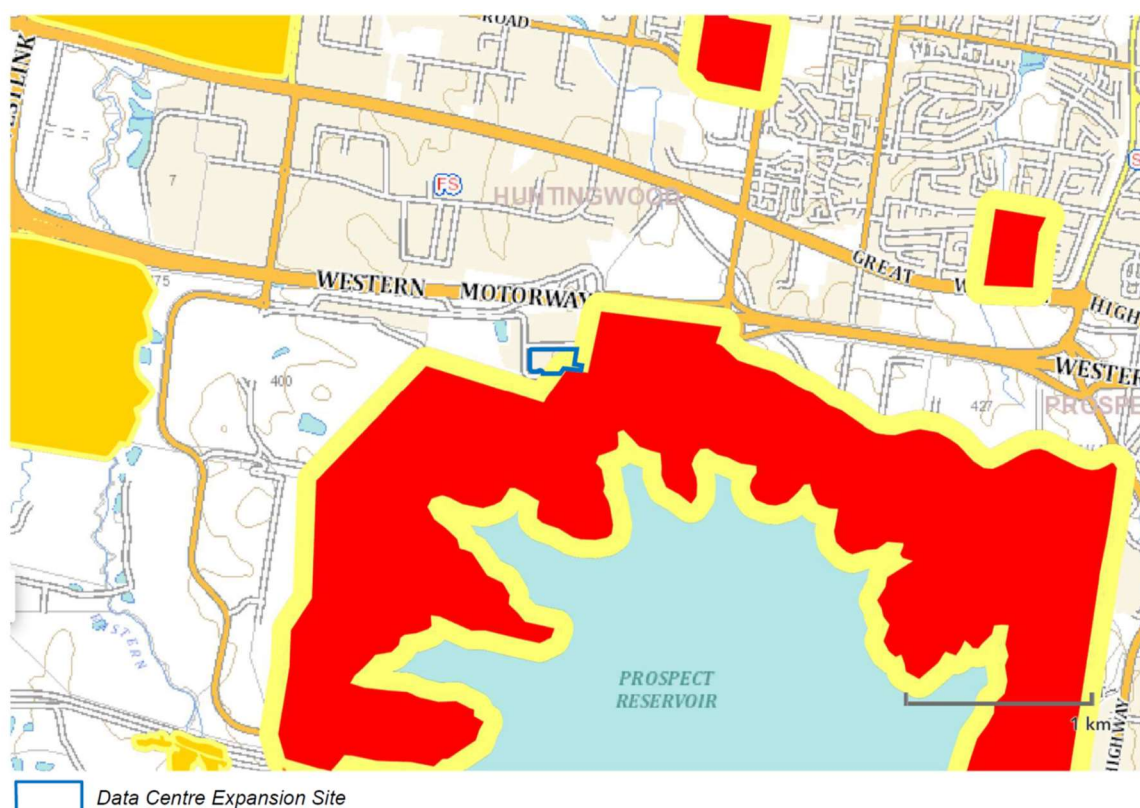


Figure 6.19: Bushfire Risk Areas (Source: NSW Planning Portal)

The assessment confirms that the development is able to satisfy the aims and objectives of the *Planning for Bush Fire Protection* guidelines, subject to a number of measures, including:

- Asset Protection Zones (APZs) are provided and maintained in accordance with the *Planning for Bush Fire Protection* guidelines. The assessment notes that the required defendable space to prevent flame contact for the proposed data centre expansion is 22 metres, and that the available APZs on the site are in excess of 100 metres to the proposed data centre and ancillary office buildings (see **Figure 6.20**). The proposed zone substation has a defendable space of approximately 60 metres, however grassland would grow up to the southern boundary of the site. The bushfire assessment notes that the bushfire threat to the substation would be mitigated by the non-combustible nature of the substation building (including a blast wall adjacent the southern boundary);
- no specific bushfire construction standards apply to the proposed buildings given the defendable space available, with the exception of ember protection measures for the proposed substation building;
- landscaping is implemented and maintained in accordance with the guidelines, which are aimed at minimising flame contact, radiant heat and fuel loads;
- provision of water supply and hydrants in accordance with the BCA and relevant Australian Standards;
- electrical services to be provided underground, and any gas services to be installed and maintained in accordance with relevant Australian Standards; and
- preparation of an Evacuation Plan for the facility in accordance with the requirements of AS 3745:2010 *Planning for Emergencies in Facilities* and relevant legislation.

The proposed development would be undertaken in accordance with the recommendations of the bushfire assessment.

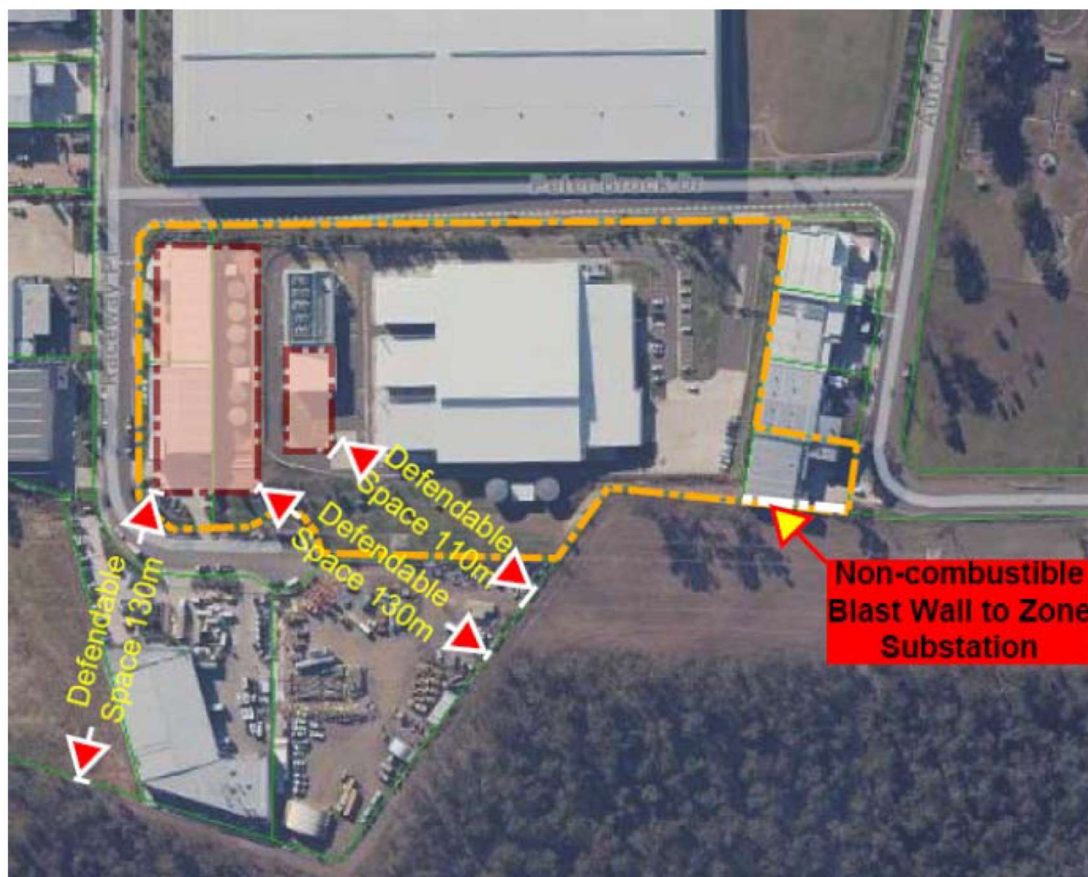


Figure 6.20: Defendable Space Plan (Source: ABPP)

6.8.3 Crime Risk

The expanded data centre is not expected to increase crime rates in the locality, as the project does not involve any particularly offensive activities and is therefore not expected to degrade the amenity of the locality.

Notwithstanding, the facility has been designed in accordance with crime prevention through environmental design (CPTED) principles, and includes a number of advanced security measures, given the importance of data security measures for DCI and its clients.

These measures are consistent with the existing security measures for the data centre, and include:

- design that provides for casual surveillance, and activation of the streetscape;
- providing clear sightlines and transitions between public and private space;
- high quality and attractive landscaping which does not provide opportunities for hiding or concealment;
- clear access and egress points;
- continuation and expansion of existing security installations, including:
 - security fencing, including perimeter fence and traffic/security bollards;
 - sliding security gates to control entry;
 - 24 hour security personnel on site;
 - a closed circuit TV security network;
 - security lighting; and
 - a comprehensive internal security authorisation system.



With the implementation of these measures, the security threats associated with the project are expected to be able to be effectively managed.

6.8.4 Dangerous Goods and Hazardous Substances

A Hazards Analysis has been undertaken for the proposal by HazKem, and is attached as **Appendix T**.

As outlined in the analysis and Section 4.3 above, *SEPP (Resilience and Hazards) 2021*²⁶ and the Department's *Applying SEPP 33* guidelines are used to ascertain whether a proposal is a hazardous industry. If a proposed development involves storage of dangerous goods in excess of the risk screening thresholds in the SEPP 33 guidelines then it is deemed to be a 'potentially hazardous industry', and a more detailed Preliminary Hazard Analysis (PHA) is required to assess whether the development is a 'hazardous industry'.

The only significant hazardous substances and dangerous goods proposed to be stored and used on site are diesel fuel, fire suppressants and batteries.

As outlined in Section 3.9.3, diesel fuel storage would increase from the existing 140,000 litres to approximately 685,000 litres. The existing underground tanks (2 x 70,000 L) are located adjacent to the existing Building G/H (see **Figure 1.3**), and the new underground tanks (5 x 109,000 L) would be located beneath the SYD03 data centre building (see Ground Floor Plan in **Appendix B**).

Diesel is a Class C1 combustible liquid. If a Class C1 or C2 liquid is stored underground, where it is the only flammable liquid present, it is not considered to be potentially hazardous. If, however, it is stored underground with other flammable liquids, it is treated as Class 3 PGIII, as under these conditions it may contribute to a fire.

The proposed underground diesel fuel storage tanks would not be stored with other flammable liquids, and is therefore not considered potentially hazardous.

Fire suppressants (carbon dioxide or other inert gas) would be stored in the data storage building. The fire suppressants would be stored as compressed gas, and are a Class 2.2 dangerous good. Class 2.2 gases are non-flammable and non-toxic, and are excluded from the risk screening under *Applying SEPP 33*, and therefore the storage on site is not considered potentially hazardous.

As outlined in Section 3.9.3, the expanded facility would also include storage and use of Lithium-ion batteries (or similar technology) for instantaneous back-up power during short term outages. These batteries would be located within, and form part of, each of the containerised Independent Power Block (IBP) units located within the lower ground levels of the SYD03 data storage building (see Ground and Upper Ground Floor Plans in **Appendix B**). Approximately 14 x 34.6kWh batteries would be located within each IBP, and there would be around 31 IBP units within the facility. The IBPs would be fully containerised units, serviced by gas fire suppression in accordance with BCA requirements and applicable standards.

Lithium-ion batteries are a Class 9 (Miscellaneous) dangerous good. Class 9 dangerous goods are excluded from the risk screening under *Applying SEPP 33*, and therefore the storage on site is not considered potentially hazardous for the purposes of the SEPP.

As indicated above, the proposed dangerous goods storage associated with the project would not exceed the screening thresholds in the *Applying SEPP 33* guidelines. Further, the proposal is not

²⁶ Formerly *SEPP No.33 – Hazardous and Offensive Development*



expected to exceed the transportation screening thresholds in the guidelines, given the low usage of dangerous goods associated with the facility.

As such, the proposed development is not considered to represent a 'potentially hazardous industry' under the Resilience and Hazards SEPP.

Notwithstanding, all dangerous goods and hazardous substances storage and handling on site would be undertaken in accordance with applicable regulations and standards, including:

- *Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2019* (POEO Regulation 2019);
- *AS 1940-2004: The storage and handling of flammable and combustible liquids;*
- *AS/NZS 4681: Storage and handling of Class 9 (miscellaneous) dangerous goods and articles;*
- *AS IEC 62619 - Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications;* and
- FM Global Property Loss Prevention Data Sheet 05-32 - Data Centres and Related Facilities.

6.9 Social and Economic

A review of the social and economic impacts of the project has been undertaken in consideration of applicable guidelines, including the Department's *Social Impact Assessment Guideline for State Significant Projects* (July 2021).

The site is located within a fully developed employment precinct, and is not located in proximity to any sensitive receivers. As outlined in Section 2, the nearest residential sensitive receivers are located in Blacktown and Prospect more than 1 kilometre to the north-east, beyond the M4 Motorway and the Great Western Highway. Publicly accessible open space areas within Prospect Nature Reserve are located approximately 2.5 kilometres to the south-east, and do not have any views to the site.

Environmental assessment indicates that the expanded data centre would not result in any significant amenity impacts on these receivers, including by way of noise and vibration, air quality, traffic or visual impacts.

As outlined in Section 4, the proposed development is consistent with the applicable strategic and statutory planning instruments. Further, the development is consistent with the stated objectives of the Raceway Precinct Plan, which are reproduced below:

- Promote economic growth and employment opportunities within Central Western Sydney.*
- Ensure the orderly provision of infrastructure and services.*
- Provide a safe and efficient stormwater management system that minimises stormwater impacts on the environment.*
- Ensure ecologically sustainable development that actively anticipates and prevents damage to the environment.*
- Minimise the impact of development on adjoining areas of high biodiversity and archaeological significance.*
- Ensure the traffic and public transport needs for the Precinct are achieved.*
- Ensure the best possible urban design outcomes are achieved.*
- Allow for the provision of adequate landscaped areas for the use and enjoyment of the working population.*
- Ensure the provision of high quality landscaping throughout the Precinct.*
- Ensure the community service needs of the working population are met.*



The proposed Eastern Creek Data Centre Expansion Project is considered to be wholly consistent with these objectives. In this regard, the proposed development:

- would generate significant capital investment and high technology employment opportunities in Central Western Sydney;
- would provide greatly expanded data storage capacity for DCI and its clients, which would facilitate downstream socio-economic benefits associated with increased data storage capacity;
- would provide all necessary infrastructure and services, in a manner that does not adversely affect other land users;
- is not expected to result in any significant environmental impacts, and is consistent with the principles of ESD; and
- has been designed to a high architectural and landscape quality, in a manner that integrates with the existing data centre and the surrounding development within the precinct.

Importantly, the development would result in significant socio-economic benefits for Western Sydney, including:

- a significant capital investment of some \$330 million (exc. GST) in the existing data centre;
- generation of approximately 100 direct high technology operational jobs, as well as indirect employment opportunities; and
- promotion of high technology industry in Western Sydney.

The proposal would result in the removal of three existing light industrial facilities on the expansion lots, including the facilities for Cargo King, Pozitive Sign and Graphic Supplies, and Thompson Controls. However, the proposal would not affect the demand or need for these businesses, and it is expected that the businesses would relocate to other employment areas in Western Sydney. As such, the proposal is not expected to have any negative net impact on employment in the region.

Given the socio-economic benefits, and that environmental assessment indicates that the proposal is unlikely to result in any significant adverse impacts on the amenity of surrounding receivers or on the environment, it is considered that the proposed Eastern Creek Data Centre Expansion Project is unlikely to result in any significant adverse social or socio-economic impacts.



7 JUSTIFICATION AND CONCLUSION

7.1 Summary of Mitigation Measures

A summary of the proposed measures to mitigate and/or manage the environmental aspects of the proposed development is provided in the following table.

Table 7.1: Summary of Mitigation Measures

Issue	Mitigation Measure	EIS Ref.
<i>Staging and Infrastructure</i>	DCI would not commence construction works (including demolition) on site until Endeavour Energy has approved the associated high voltage electricity works (subject to separate approval)	S.3.9
<i>General Environmental Management</i>	DCI would prepare a detailed Construction Environmental Management Plan (CEMP) for the development, prior to the commencement of construction	S.6
<i>Design and Visual</i>	The data centre expansion would be developed generally in accordance with the architectural and landscape plans for the project	- S.3 - App. B - App. C
	All external lighting would be installed in accordance with AS 4282(INT) - <i>Control of Obtrusive Effects of Outdoor Lighting</i>	S.3.12
<i>Soil and Water</i>	The data centre expansion would be developed generally in accordance with the Erosion and Sediment Control Plan for the project, and the Department's <i>Managing Urban Stormwater – Soils and Construction</i> guidelines	- S.0 - App.E
	The data centre expansion would be developed generally in accordance with the salinity management measures in the Salinity Assessment and Management Plan for the project	- S.0 - App.L
	The data centre expansion would be developed generally in accordance with the stormwater management strategy in the Soil and Water Management Plan for the project.	- S.0 - App. H
<i>Noise and Air Quality</i>	- Construction and operation of the expanded data centre would be managed in accordance with the relevant noise criteria under the: <i>Noise Policy for Industry (NPI)</i>; <i>Interim Construction Noise Guideline (ICNG)</i>; and <i>Road Noise Policy</i>	S.6.3
	Construction activities would be undertaken generally within the hours stipulated in the EPA's <i>Interim Construction Noise Guideline</i>	- S.3.6 - S.6.3
	- Construction noise would be managed in accordance with the measures outlined in the Noise Assessment, which would be addressed the CEMP for the development. The measures would include: - noise management controls, including: - site induction training; - operator instruction; - site noise planning, including locating noisy plant away from nearby receivers; - scheduling noisy activities so that they do not occur simultaneously, and/or during less sensitive time periods; and - selecting less noisy plant and equipment where practicable; - maintaining effective community consultation; and - maintaining a complaints handling and management system	- S.6.3 - App.M
	- Dust emissions during construction works would be managed in accordance with standard best practice techniques, including: - minimising the area of disturbance as far as practicable; - minimising drop heights for materials being worked on the site;	S.6.4



<i>Issue</i>	<i>Mitigation Measure</i>	<i>EIS Ref.</i>
	- keeping exposed surfaces moist at all times; - rehabilitating/revegetating disturbed surfaces as soon as practicable; and - ensuring that trucks are covered and do not track sediment onto public roads	
<i>Greenhouse Gas and Resource Use</i>	- The data centre expansion would be developed generally in accordance with the energy and water resource use efficiency measures outlined in this EIS and the Energy & Greenhouse Gas Assessment - DCI would target industry best practice energy performance targets for the proposed data centre expansion, namely: - NABERS ≥ 5 Stars; and - PUE ≤ 1.3 - DCI would continue to investigate reasonable and feasible alternatives to diesel back-up power generation	- S.3.10 - S.6.4 - App.I - S.6.4 - App.I - S.7.2
<i>Heritage</i>	An Unexpected Finds Protocol would be prepared and implemented as part of the CEMP to manage any unexpected heritage items encountered during the construction works	- S.6.6 - App.P
<i>Traffic</i>	- Site access, parking and internal circulation arrangements for the project would be developed in accordance with relevant Australian Standards (including AS2890.1 and AS2890.2) - A Construction Traffic Management Plan (CTMP) would be prepared and implemented as part of the CEMP to appropriately manage traffic and traffic-safety during construction works	- S.6.7 - App.Q - S.6.7 - App.Q
<i>Wastes and Hazards</i>	- The data centre expansion would be developed and managed generally in accordance with the Waste Management Plan for the project - The data centre expansion would be developed in accordance with the recommendations of the Bushfire Assessment for the project, including provision of: - Asset Protection Zones; - ember protection for the substation; - landscaping in accordance with the Planning for Bushfire Protection guidelines; - water supply and hydrants in accordance with the BCA and relevant Australian Standards; - underground electrical services; and - preparation of an Evacuation Plan for the facility - All dangerous goods and hazardous substances would be stored in accordance with applicable standards, including the POEO Regulation 2019, AS 1940-2004, AS/NZS 4681 and AS IEC 62619	- S.6.8 - App. R - S.6.8 - App. S - S.6.8

7.2 Consideration of Alternatives

Alternatives to carrying out the development on the site in the proposed manner include:

- developing the site to a lesser or higher scale;
- developing the site with a different layout and/or design;
- developing aspects of the facility with different technologies; and
- not undertaking the development, or components of it, at all.

Alternative Scale

In terms of scale, it is noted that:

- the maximum height of the proposed 4-storey SYD03 data centre expansion is well below the height of the approved 8-storey SYD02 data centre expansion (ie. approximately 18m reduction in building height, and approximately 25m reduction in relative building height);



- visual impact assessment indicates that proposed expansion would not result in any significant visual impacts on surrounding receivers;
- floor space ratio (ie. 50%) and site cover (ie. 44%) for the expanded data centre are relatively low, and well within the maximum allowable site cover under the Raceway Precinct Plan (ie. 65%);
- the proposed building setbacks to Peter Brock Drive and Raceway Place generally comply with the applicable setbacks in the Raceway Precinct Plan; and
- environmental assessment indicates that the development is able to be undertaken in a manner that would not adversely affect the environment or surrounding land users.

Accordingly, it is considered that the proposed scale of the expanded data centre provides a reasonable balance between maximising the development and employment opportunities of the site whilst ensuring that the amenity of the surrounding area is not adversely affected.

Alternative Layout and Design

In terms of alternative layouts and/or designs, it is noted that:

- the proposed data centre expansion has been designed to a high quality with a range of architectural forms, articulation and materials that respond to the site's attributes and constraints;
- the design of the facility has paid particular attention to key frontages to Peter Brock Drive and Raceway Place. Service areas, utilities, plant and equipment have been located away from the key frontages and/or effectively screened with landscaping;
- the proposal has been designed in a manner that avoids development in the Endeavour Energy easement, and avoids lighting and overlooking of the Prospect Nature Reserve;
- the proposal provides generous landscaping provided to key street frontages;
- the expanded data centre complies with the built form development standards and controls of the WSEA SEPP and Raceway Precinct Plan, with the exception of a minor non-compliance with car parking rates and minor setback encroachment under the Precinct Plan; and
- environmental assessment indicates that the development is able to be undertaken in a manner that would not adversely affect the environment or surrounding land users.

Accordingly, it is considered that the layout and design of the expanded data centre provides a reasonable balance between the utilitarian needs of the facility, and the desire for an attractive and appealing development that complements the Raceway Precinct and surrounding area.

Alternative Back-Up Power Technology

In terms of alternative technologies, one of the key environmental aspects associated with the operation of data centre facilities is the use of diesel generators for back-up power generation. Whilst these generators only operate irregularly and for short periods during power outages, their use does have the potential to generate considerable noise, air and greenhouse gas emissions.

DCI has considered a number of alternative technologies for back-up power generation during planning for the proposed development. A summary of the alternatives considered is provided in the following table.



Table 7.2: Consideration of Alternative Back-Up Power Generation

Technology	Comments	Conclusion
Solar / Battery	• Low power density • Power availability subject to weather • Poor high load capability for backup for extended periods	Not suitable
Wind / Battery	• Power availability subject to weather • Poor high load capability for backup for extended periods	Not suitable
Diesel Generator	• Commercially available • Proven technology • Manageable fuel storage for extended periods	Suitable
Gas Generator	• Gas storage for extended downtime “off grid” not practical • Poor load following capability to meet load demands • Nearest available high pressure mains some 1.6 kilometres away (Ferrers Road to west of site), which is not economically feasible to extend to the site	Not suitable
Green Hydrogen Generator	• Not yet commercially available (best case 2025) • Untested viability • May be considered for later stages subject to fuel system constraints and viability	Not suitable in near term. Viability to be re-evaluated at future stages
Hydrogen Fuel Cell	• Not commercially available at required ratings	Not suitable in near term. Viability to be re-evaluated at future stages

As indicated in the table, alternatives to diesel back-up power generation are not considered to be suitable for the proposed facility at this time, although green hydrogen generators may be suitable in the future as the technology becomes viable. DCI will continue to re-evaluate the viability of such technologies at future stages.

No Development Alternative

Not undertaking the development at all on the site is not considered to be a reasonable alternative, as:

- the development is permissible on the land and is consistent with the objectives of the WSEA SEPP and the Raceway Precinct Plan, particularly as it represents development for high technology data storage purposes and incorporates a high quality architectural and landscape design;
- the development is not predicted to have any significant impacts on the environment or surrounding land users; and
- not undertaking the development would negate the expanded data centre’s significant socio-economic benefits, including a capital investment of \$330 million (exc. GST) in the Raceway Precinct and the generation of approximately 100 high technology jobs in Western Sydney.

7.3 Project Need and Justification

The proposed Eastern Creek Data Centre Expansion Project would provide a high quality and high technology data storage facility in a manner that would complement the character of the Raceway Precinct and Central Western Sydney.

The development represents a significant capital investment by DCI in the Raceway Precinct and the wider Western Sydney Employment Area, which is identified in the *Greater Sydney Region Plan* as a key centre for employment and urban growth in Western Sydney over the next 20 years.



Importantly, the proposal would facilitate the expanded development of a high technology industry in Western Sydney, with the generation of advanced technology jobs and flow-on economic opportunities in the information technology sector. The project would also assist in meeting society's growing demand for data storage.

Environmental assessment indicates that the development is unlikely to result in any significant environmental impacts or adversely affect the amenity of the surrounding area. Further, the development is able to be undertaken in a manner that is consistent with the principles of ecologically sustainable development, which include²⁷:

- *the precautionary principle* – the development is not predicted to pose any threat of serious or irreversible environmental damage;
- *inter-generational equity* – the development is not predicted to adversely affect the health, diversity and productivity of the environment for the benefit of future generations;
- *conservation of biological diversity and ecological integrity* – the development is not predicted to have any significant adverse impacts on biodiversity; and
- *improved valuation, pricing and incentive mechanisms* – the development is consistent with this principle, particularly as it would provide increased data storage capacity/supply.

The site is well suited to the development, as it is zoned for employment uses, is already developed for modern data storage purposes, has or will have access to all required infrastructure and services, and is removed from residential zoned land and potential environmental hazard.

On balance, it is considered that the development represents the orderly and reasonable development of the land, and is therefore in the public interest.

7.4 Conclusion

Having regard to all the salient environmental, social and economic issues, it is considered that the proposed development represents orderly development of the land. It is respectfully requested that the Minister for Planning (or his delegate)²⁸, having due regard for the information submitted in this document, grants approval to the proposed Eastern Creek Data Centre Expansion Project.

²⁷ As outlined in the *Environmental Planning and Assessment Regulation 2021*

²⁸ Or the Independent Planning Commission if the proposal meets the thresholds for the Commission to be consent authority