



Environmental Impact Statement

Marsden Park Data Centre SSD-70889211

105 and 113 Hollinsworth Road, Marsden Park

ON BEHALF OF

CANBERRA DATA CENTRES PTY LTD

NOVEMBER 2024



Project

Marsden Park Data Centre SSD-70889211

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EIS Declaration

EIS Declaration	
Project details	
Project Name	Marsden Park Data Centre
Application number	SSD-70889211
Address of the land in respect of which the development application is made	105 & 113 Hollinsworth Road, Marsden Park Lot 10 Deposited Plan 1262052 and Lot 11 Deposited Plan 1262052
Applicant Details	
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Registration number	136338
Organisation registered with	Planning Institute of Australia
Declaration	The undersigned declares that this EIS: • has been prepared in accordance with the Environmental Planning and Assessment Regulation 2021; • contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates; • does not contain information that is false or misleading; • addresses the Planning Secretary's environmental assessment requirements (SEARs) for the proposal;

EIS Declaration

	• identifies and addresses the relevant statutory requirements for the proposal, including any relevant matters for consideration in environmental planning instruments; • has been prepared having regard to the Department's State Significant Development Guidelines - Preparing an Environmental Impact Statement; • contains a simple and easy to understand summary of the proposal as a whole, having regard to the economic, environmental and social impacts of the Proposal and the principles of ecologically sustainable development; • contains a consolidated description of the proposal in a single chapter of the EIS; • contains an accurate summary of the findings of any community engagement; and • contains an accurate summary of the detailed technical assessment of the impacts of the proposal as a whole.
Signature	
Date	4 November 2024

Abbreviations and Acronyms

Abbreviations and Acronyms	
%	percent
°	degrees
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACHCRP	<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010)</i>
ADR	Architectural Design Report
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
Applicant	Canberra Data Centres Pty Ltd
AQIA	Air Quality Impact Assessment
AS	Australian Standard
AS 1940	<i>AS 1940 – Storage and handling of flammable and combustible liquids</i>
AS IEC 62619	<i>AS IEC 62619 – Secondary cells and batteries containing alkaline or non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications</i>
AS/NZS 4681	<i>AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles</i>
BC Act 2016	<i>Biodiversity Conservation Act 2016</i>
BC Act 2016	<i>Biodiversity Conservation Act 2016</i>
BCA	The Building Code of Australia
BCSEPP 2021	<i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i>
BDAR	Biodiversity Development Assessment Report
BDAR	Biodiversity Development Assessment Report
Bio-certified land	biodiversity certified land
Burra Charter	The Burra Charter 2013 (Australia ICOMOS 2013)
°C	Degrees Celsius
CBD	Central Business District

Abbreviations and Acronyms	
CC	Construction Certificate
CDC	Canberra Data Centres Pty Ltd
CEMP	Construction Environmental Management Plan
CFC	Chlorofluorocarbon
CHL	Commonwealth Heritage List
cl.	Clause
Clean Air Regulation 2022	<i>Protection of the Environment Operations (Clean Air) Regulation 2022</i>
CNVMP	Construction Noise and Vibration Management Plan
CNVS	Construction Noise and Vibration Strategy
CO	Carbon Monoxide
Conservation Order	<i>Order to confer biodiversity certification on the State Environmental Planning Policy (Sydney Region Growth Centres) 2006</i>
COPs	Coefficient of Performance
Council	Blacktown City Council
Country	Nura
CPCP	Cumberland Plain Conservation Plan
CPTED	Crime Prevention Through Environmental Design
CSSI	Critical State Significant Infrastructure
CTMP	Construction Traffic Management Plan
dB(A)	A-Weighted Decibel
dBA	Decibels A
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DCP 2010	<i>Blacktown City Council Growth Centre Precincts Development Control Plan 2010 Amended March 2022</i>
DDP	Dam Dewatering Plan
Div.	Division
DMP	Construction Dust Management Plan

Abbreviations and Acronyms

DP	Deposited Plan
DPHI	Department of Planning, Housing and Infrastructure
DPHI	Department of Planning, Housing and Infrastructure
DtS	Deemed-to-Satisfy
EDC	estimated development cost
EIS	Environmental Impact Statement
Engagement Guide	<i>Undertaking Engagement Guide – Guidance for State Significant Projects</i> (DPIE, 2021)
EP&A Act 1979	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation 2021	<i>Environmental Planning and Assessment Regulation 2021</i>
EPA	NSW Environment Protection Authority
EPA Approved Methods	<i>Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales</i> (NSW EPA, 2022)
EPBC Act 1999	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPI	Environmental Planning Instrument
ESD	Ecologically Sustainable Development
EV	Electric Vehicle
FFL	Finished Floor Level
FMDS 5-32	<i>FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities</i> (FMDS 5-32)
FOH	Front of House
FRA	Flood Risk Assessment
FSR	Floor Space Ratio
FTE	Full-Time Equivalent
GCC	Greater Cities Commission
GFA	Gross Floor Area
GHG	Greenhouse Gas
GLCs	Ground Level Concentrations
GTP	Green Travel Plan

Abbreviations and Acronyms	
ha	Hectares
Hz	Hertz
IAQM guidance methodology	Air Quality Management (IAQM) document <i>Guidance on the assessment of dust from demolition and construction</i> (IAQM, 2024)
ICNG or Guideline	NSW Interim Construction Noise Guideline
IWMP	Integrated Water Management Plan
JtW	Journey to Work
JtW	Journey to Work
km	Kilometres
kV	Kilovolt
L	Litres
l/kWh	litres per kilowatt-hour
LAeq	Equivalent Continuous Sound Pressure Level
LAF	A-weighted, sound level, measured with a fast time-constant
LALC	Local Aboriginal Land Council
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
Lp	Sound Pressure Levels
LPP	Local Planning Priorities
LSPS	Local Strategic Planning Statement
Lw	Equipment Sound Power Levels
Lw	Sound Power Levels
m	Metres
m	Metre
m/s	Metres Per Second
m ³	cubic metres
MJ	megajoules

Abbreviations and Acronyms

MNES	Matters of National Environmental Significance
MW	Megawatt
MWe	Megawatts Electric
NABERS	National Australian Built Environment Rating System
NCC	National Construction Code
NEPC Act 1994	<i>National Environment Protection Council Act 1994</i>
NEPMs	National Environment Protection Measures
NGER	National Greenhouse and Energy Reporting
NGER Act	<i>National Greenhouse and Energy Reporting Act 2007</i>
NMLs	Construction Noise Management Levels
NMLs	Noise Management Levels
NO	nitric oxide
NO ₂	Nitrogen Dioxide
NO ₂	nitrogen dioxide
NoR	Notice of Requirements (NoR).
NP&W Act 1974	<i>National Parks and Wildlife Act 1974</i>
NPfl	Noise Policy for Industry
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
P.	Part
Patch	Patch Planning
PM 10	Particles with a diameter of 10 micrometres or less
PM 2.5	Particles with a diameter of 2.5 micrometres or less
POE	point of entries
POEO Act 1997	<i>Protection of the Environment Operations Act 1997</i>
Premises Standard	<i>The Disability (Access to Premises - Buildings) Standards 2010</i>
Proponent	Canberra Data Centres Pty Ltd
Proposal	New Data Centre

Abbreviations and Acronyms

PRP	prime rating power
PS SEPP 2021	<i>State Environmental Planning Policy (Planning Systems) 2021</i>
PSD	probable simultaneous demand
PUE	Power Usage Efficiency
PV	Photovoltaic
RAPs	Registered Aboriginal Parties
RAP	Remediation Action Plan
RBL	Rating Background Noise Level
REAP	Registered Environmental Assessment Practitioner
RESEPP 2021	<i>State Environmental Planning Policy (Resources and Energy) 2021</i>
RHSEPP 2021	<i>State Environmental Planning Policy (Resilience and Hazards) 2021</i>
RL	Reduced Level
RLB	Rider Levett Bucknall NSW Pty Ltd
RNP	NSW Road Noise Policy
RSD	Regionally Significant Development
s.	Section
s7.11 Plan	<i>Section 7.11 Contributions Plan No.21 – Marsden Park (IPART Reviewed Contributions Plan)</i>
SAIDI	System Average Interruption Duration Index
SBSEPP 2022	<i>State Environmental Planning Policy (Sustainable Buildings) 2022</i>
SCCPP	Sydney Central City Planning Panel
sch.	Schedule
SEARs	Secretary's Environmental Assessment Requirements
Sec	second
SEPP (Precincts) 2021	<i>State Environmental Planning Policy (Precincts – Central River City) 2021</i>
SHR	State Heritage Register
SIA	Social Impact Assessment
SIDRA	SIDRA Intersection Version: 9.1.1.200

Abbreviations and Acronyms

skm	Square Kilometres
sqm	Square Metres
SRI	Solar Reflectivity Index
SSDA	State Significant Development Application
SSDG	State Significant Development Guide
SSI	State Significant Infrastructure
t	Tonnes
T&I SEPP 2021	<i>State Environmental Planning Policy (Transport and Infrastructure</i>
TfNSW	Transport for NSW
The Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010)</i>
The Guide	<i>Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)</i>
The Site	105 & 113 Hollinsworth Road, Marsden Park
TIA	Traffic Impact Assessment
UPS	Uninterrupted Power Supply
VIA	Visual Impact Assessment
VOC	Volatile Organic Compound
WELS	Water Efficiency Labelling and Standards
WMP	Waste Management Plan
WSC	Water Servicing Coordinator
WSMS 2041	<i>NSW Waste and Sustainable Materials Strategy 2041</i>
WUE	Water Usage Efficiency
µg/m ³	Micrograms Per Cubic Meter Air

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Executive Summary

INTRODUCTION

This Environmental Impact Statement (EIS) has been prepared by Patch Planning Pty Ltd (Patch) on behalf of Canberra Data Centres Pty Ltd (the Applicant) in support of a State Significant Development Application (SSDA) for the construction and operation of a data centre on land known as 105 and 113 Hollinsworth Road, Marsden Park (the site).

The proposed data centre will have a total power consumption of 504 megawatts (MW) and as such is classified as a State Significant Development (SSD) under Schedule 1, Clause 25(1) of the *State Environmental Planning Policy (Planning Systems) 2021*.

The EIS has been prepared to respond to Secretary's Environmental Assessment Requirements (SEARs) received under SSD-70889211, and has been certified by a registered environmental assessment practitioner (REAP). This EIS concludes that the proposed development is both suitable and warrants approval subject to the implementation of planned mitigation and management measures identified throughout.

The proposal has a capital investment value (CIV) of \$3,113,226,273 exc. GST and will result in the provision of critical infrastructure and contribute to continued economic prosperity through a significant private investment. The proposal will also provide economic benefit through the provision of a state-of-the-art data centre which will provide a means of ensuring that the critical data of business, organisations and government is able to be safely stored and secured locally, nationally and internationally.

The proposal is a direct response to demand within the NSW market for such facilities and will provide infrastructure that provides a secure, reliable, and cost-effective way to store and process data, while also offering scalability and high levels of uptime.

LOCATION AND SITE DESCRIPTION

The SSDA relates to a proposal at the site known as 105 & 113 Hollinsworth Road, Marsden Park (the site) legally referred to as Lots 10 and 11 of Deposited Plan (DP) 1262052. The site is within the Blacktown City Council local government area (LGA) on traditional Country (Nura) of the Cabrogal People of the Darug nation.

The site is approximately 20.91ha in size and is bounded by industrial development to the north and west, the Baitul Huda Mosque and industrial development to the east, and the Castlereagh freeway reservation to the south. In its existing state, the site is largely undeveloped, consisting of tree canopy interspersed with areas of cleared grassland formerly used for rural-residential purposes.

RELEVANT APPROVALS

There are several historic or current development approvals of relevance to the SSDA:

- Complying Development Certificate (CDC) #8591/1 which provided consent for demolition of existing structures on site. The CDC was approved 24 January 2024;
- Development Application (DA) for Early Works (DA-24-00386, PAN-426243), which was approved by Council on 11 September 2024; and
- DA for a 5MW Data Centre, internal road network, and associated infrastructure (DA-24-00542, PAN-435950) currently under assessment by Council, expected to be determined by the Sydney Central City Planning Panel (SCCPP) by mid-November 2024.

PROJECT SUMMARY

The SSDA seeks approval for the construction and operation of a data centre campus referred to by the operator as 'The Marsden Park Data Centre Campus.' The Marsden Park Data Centre Campus will have an operational capacity of 504 megawatts (MW), comprising six (6) four (4) storey data centre buildings, ancillary office space, generators, substation, diesel storage, hardstand and landscaping. The facility will operate 24 hours a day, 7 days a week. In summary, approval for the following is sought:

- Minor site preparation works and the installation of services to enable the construction of the data centre campus;
- Staged construction of six (6) x four (4) storey data centre buildings, each containing: 12 data halls, 12 battery rooms, 40 generators (20 double stacked), loading docks, ancillary office space and associated mechanical, electrical and water infrastructure;
- The proposed development will have a typical height of 35m above ground and a maximum height of 37.515m;
- Construction of 12 two-storey skybridges linking the data centres;
- Provision for a dedicated 720MVA substation at the northern boundary with direct access to Hollinsworth Road, to serve the data centre campus in its entirety, subject to future detailed design;
- Construction of an internal road network to enable vehicular circulation around the campus, loading areas and onsite car parking;
- Removal of four (4) trees to facilitate the creation of Asset Protection Zones;
- Landscaping works, including the retention of a landscaped buffer along the southern and eastern boundary of the site and the introduction of a landscaped buffer along the northern and western boundaries of the site; and
- Construction of a 3m high security fence along the perimeter of the site.

Endeavour Energy are the Supply Authority for the area. Initially and prior to the establishment of the proposed onsite 132/11kV Zone Substation, the site shall be supplied from South Marsden Park Zone Substation.

PROJECT ALTERNATIVES

Three (3) feasible alternatives have been investigated for the SSDA:

1. **'Do Nothing':** This option would result in the site remaining vacant, undeveloped, and underutilised. It is considered that the construction of a new data centre at the site provides for a better outcome when compared to a 'do nothing' scenario given the critical role data centres play in the proper functioning of the economy.
2. **Alternative Design:** Several different design options have been considered at the site throughout the master planning and design development phases of the project. The primary alternative design option considered included 260 individual flues for the emergency back-up generator exhaust stacks, and lower acoustic barriers to the chiller plants. Throughout the detailed design process, it was determined that the previous design provided for a poorer outcome when compared to the current design.
3. **The Proposed Design:** The option which is proposed in this SSDA was selected as it would result in an optimal design outcome with operational, constructability and amenity impacts when compared to previous designs.

The proposed design represents the highest and best use of the site and will enable the delivery of additional IT infrastructure that is critical to proper day to day functioning of the economy which is increasingly reliant on digital infrastructure and systems.

STRATEGIC CONTEXT

A review of the Region Plan, District Plan and Blacktown Local Strategic Planning Statement (LSPS) identifies that the proposal is aligned with relevant strategic policies as detailed below.

A Metropolis of Three Cities

A *Metropolis of Three Cities* is the current Region Plan applying to Sydney. While the purpose of the Region Plan is to guide strategic planning decisions by authorities, the subject proposal is nevertheless consistent with its vision, particularly as it relates to the provision of more jobs within the Central City District. The proposal will help realise the following objectives contained within the Region Plan, as discussed within this EIS.

The Central City District Plan

The District Plan highlights the importance of industrial activity and urban services to Greater Sydney's economy, and the nature in which industrial lands are evolving into complex employment lands as a result of emerging technologies. Pressures for the conversion of industrial land are noted as being particularly strong in the Central River City.

Blacktown LSPS 2020

The *Blacktown Local Strategic Planning Statement 2020* (LSPS) is Council's primary strategic planning document and sets out planning priorities consistent with the Central City District Plan and the Greater Sydney Region Plan, providing a 20-year land use vision for the LGA.

The LSPS seeks to transform the LGA's employment lands into advanced manufacturing hubs with a diversity and density of jobs, and opportunities for local workers to boost their skills and knowledge. By retaining employment land, the LSPS intends to create one of the largest concentrations of employment in Greater Sydney. Of this, Marsden Park will be home to the largest portion of employment land in the Central City District.

The proposal directly supports the realisation of a number of Local Planning Priorities contained within the LSPS, and supports Council's vision for industrial land by providing employment opportunities for local workers, and by attracting innovation in the form of a high technology industry which will contribute to the digital economy to the LGA.

STATUTORY CONTEXT

The EIS addresses statutory planning process for the proposal along with relevant State and Local legislation and planning instruments. As summarised below, following consideration of the proposal against the requirements of the relevant legislation, planning instruments and policies, the EIS demonstrates the suitability of the site for the proposal and that the proposal is in the public interest.

Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* [Cth.] (EPBC Act 1999), any action that is considered likely to have a significant impact on Matters of National Environmental Significance (MNES) is declared a "Controlled Action" for which formal Commonwealth approval is required. The Proposal is not likely to impact a MNES. Therefore, the Proposal is **not required to be referred** to the Federal Department of the Environment to determine if it constitutes a controlled action and the bilateral agreement applies.

Environmental Planning and Assessment Act 1979

The EIS provides an assessment of the proposal against the matters of consideration listed in Section 4.15 of the EP&A Act 1979. The assessment undertaken provides that the site is suitable for the proposal and within the public interest.

Environmental Planning and Assessment Regulation 2021

This EIS has been prepared in accordance with the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation 2021) as relevant, with all necessary requirements being provided as required under Sections 24 and 190.

The development would **not constitute Designated Development** as defined under Schedule 3 of the EP&A Regulation 2021.

Protection of the Environment Operations Act 1997

Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act 1997) lists 'scheduled activities' for which an environment protection license (EPL) is required. These are considered below.

The combined diesel storage quantity proposed to serve the six (6) data centres that are the subject of this SSDA equates to 7,231.5 tonnes. This exceeds the 2,000 tonnes of chemical and petroleum product storage requirement, thus an EPL **is required** for petroleum products storage.

The assessment otherwise finds that an EPL for the purposes of general chemical storage or electricity works is **not** required.

Protection of the Environment Operations (Clean Air) Regulation 2022

The *Protection of the Environment Operations (Clean Air) Regulation 2022* (Clean Air Regulation) is the core regulatory instrument for air quality issues in NSW. Part 5 Division 6 s.73 of the Clean Air Regulation exempts emergency standby plant for generating electricity from the air impurities standard for nitrogen dioxide (NO₂) and nitric oxide (NO) if the plant is used for a total of not more than 200 hours per year.

Periodic testing of back-up generators is proposed to take place in the order of 192 hours per year. As such the proposal is **exempt** from the concentration limits outlined in Clean Air Regulation.

Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act 2016) protects native vegetation, species of threatened flora and fauna, endangered populations and endangered ecological communities and their habitats in NSW. Under s. 7.9 of the BC Act 2016, a Biodiversity Development Assessment Report (BDAR) is required to be submitted for any SSD, unless a waiver is granted exempting the SSD from this requirement.

This EIS is supported by a **BDAR Waiver Request Report** for the small area of land on the site which has not been previously biodiversity certified. The previously biodiversity certified land does not require the preparation of a BDAR. The BDAR Waiver Request was made to DPHI on 16 October 2024 and is expected imminently.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NP&W Act 1974) relates to the establishment, preservation and management of national parks, historic sites and certain other areas and the protection of certain fauna, native plants and Aboriginal objects.

As discussed in this EIS, a number of Aboriginal objects have previously been identified within the site. However, the actual works that will disturb the Aboriginal objects were already approved under the separate Early Works DA (PAN-426243).

An Aboriginal Heritage Impact Permit (AHIP) application is being submitted for these areas in order to disturb these artefacts for those separate but related works. As such, an **AHIP is not required** for the proposed works specifically subject to this SSDA.

State Environmental Planning Policy (Precincts – Central River City) 2021

Marsden Park Industrial Precinct Plan of *State Environmental Planning Policy (Precincts—Central River City) 2021* (PCRC SEPP 2021) is the primary environmental planning instrument applicable to the site. Under the PCRC SEPP 2021, the site is zoned IN2 – Light Industrial.

The proposal is permissible with development consent in the IN2 Zone and meets the zone objectives.

State Environmental Planning Policy (Planning Systems) 2021

In accordance with Schedule 1, Clause 25 of the *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP), the development is defined as SSD as the power consumption of the facility exceeds 15MW.

State Environmental Planning Policy (Biodiversity and Conservation) 2021

The primary aims and objectives of Chapter 2 of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (B&C SEPP 2021) relate to the protection of the biodiversity values of the trees and other vegetation on the site in non-rural areas. This chapter is not applicable to the proposed development as the proposed removal of trees is ancillary to development requiring consent.

State Environmental Planning Policy (Transport and Infrastructure) 2021

In accordance with Clause 2.31 of the *State Environmental Planning Policy (Transport and Infrastructure)* (T&I SEPP 2021), development for the purposes of a data centre is permissible in the IN2 Light Industrial zone.

Pursuant to clause 2.122 of the T&I SEPP 2021 the proposal would need to be referred to Transport for New South Wales (TfNSW) as it is considered traffic generating development.

State Environmental Planning Policy (Resilience and Hazards) 2021

An assessment of the proposal has been undertaken against the relevant chapters of the *State Environmental Planning Policy (Resilience and Hazards) 2021* (R&H SEPP 2021) and finds the following:

- Chapter 3 of R&H SEPP 2021 provides criteria to confirm whether a development can be considered potentially hazardous or offensive and outlines how to reduce these impacts.

A risk screening assessment has been prepared in support of the EIS which confirms that there are no dangerous goods on the site that are included in the threshold values contained within the SEPP and the proposed development is therefore not a potentially hazardous industry.

- Chapter 4 of R&H SEPP 2021 provides a state-wide approach to the remediation of contaminated land, to reduce the risk of harm to human health or the environment. Clause 4.6 of the SEPP requires that a consent authority not grant approval for the carrying out of development on land unless satisfied that the site can be made suitable for the proposed use.

As outlined in the EIS, site wide remediation strategies are proposed as part of the Early Works DA. The site is able to be made suitable for the proposed use.

State Environmental Planning Policy (Sustainable Buildings) 2022

Chapter 3 of the *State Environmental Planning Policy (Sustainable Buildings) 2022* (Sustainable Buildings SEPP) contains non-residential building sustainability standards. In accordance with 3.2(1) of the Sustainable Buildings SEPP the proposal is considered to meet the general sustainability measures.

To ensure consistency in the measurement of embodied emissions, all impacted new non-residential development are required to complete the NABERS Embodied Emissions Material Form. The NABERS Embodied Emissions Material Form has been provided as part of the EIS.

The office component of the proposal is defined as a large commercial development, and is therefore required to comply with s 3.3 and Schedule 3 of the Sustainable Buildings SEPP. The office component of the proposed development is able to achieve a 5.5-star NABERS energy rating and 3-star NABERS water rating.

No fossil fuels are proposed for the development in regular operation. 100% of the development's energy demand is to be met using electricity, which aligns with the Government's goal of net zero emissions by 2050.

Blacktown City Council Growth Centre Precincts Development Control Plan 2010

While cl. 2.10 of PS SEPP 2021 expressly states that development control plans (DCP) do not apply to SSD, the *Blacktown City Council Growth Centre Precincts Development Control Plan 2010* (BDCP 2010) has nevertheless been considered in relation to siting and design of the proposal. The proposal demonstrates a high level of compliance with the BDCP 2010.

COMMUNITY AND STAKEHOLDER ENGAGEMENT

During the preparation of the SSDA, the project team has undertaken consultation with surrounding landowners, the local and regional community and environmental groups and relevant government agencies.

Approximately 950 properties surrounding the site were notified in on 29 May 2024 with information about the proposed development. To date only nine (9) responses to the online survey have been received (between 29 May – 1 July 2024) from members of the community. No feedback was received from local organisations or through the 1800 information line. To date there have been no requests for a virtual briefing session.

This suggests limited interest in, and no objection to, the proposal. Notwithstanding, the Applicant (and their representatives) remains open to discussing the proposal with interested community members prior to, and during the public exhibition and assessment process. Any comments received by the community will be suitably addressed, as and when they happen.

In relation to Government stakeholders, extensive consultation was undertaken with Council and other Government stakeholders over the course of the Project.

ASSESSMENT OF IMPACTS

The EIS addresses a range of environmental matters identified in the project's SEARs. The most significant environmental impact associated with the proposal arise from the testing and emergency operation of the back-up generators. Beyond the impacts associated with the testing and emergency operation of the back-up generators, it is considered that the impact of the proposal is low and that any potential adverse impacts which may result have been minimised or appropriately managed through proposed mitigation strategies.

Where short term impacts have the potential to occur throughout construction, mitigation measures have been proposed to help minimise their effect. The assessment of relevant impacts is summarised below.

Built form, urban design and landscape response

It is considered that an appropriate balance has been struck between facilitating the bespoke built form requirements associated with data centres and the need to provide a built form and landscaping outcome which does not result in adverse visual or amenity impacts, or appear at odds with the broader landscape character.

This has been achieved through the careful master planning of the site, an architecturally articulated design response, the retention of existing vegetation along the southern and eastern boundaries, and the proposed provision of new landscaping along the frontages of the site, which will provide an effective screen over the long term.

Visual impact

The visual catchment area is not considered an area of high scenic value within the landscape. While the proposal would be visible from many viewpoints, the proposal will have a low to moderate cumulative visual impact. This is as a result of it protruding over the line of existing vegetation, whilst also being partially screened by existing and proposed vegetation.

It is considered that any perceived adverse impacts can be appropriately mitigated through the adoption of urban design principles, the overall landscaping strategy undertaken at the site and the retainment and enhancement of buffer zone planting along the southern and eastern edges of the site.

Noise and Vibration

Construction Noise

In relation to construction acoustic impacts, the CNVIA found that construction activities during each of the construction stages are predicted to exceed the NML for standard hours and outside of working hours criteria at the majority of residential receivers (with the exception of R08) during calm and prevailing wind conditions. Similarly, the CNVIA found that construction activities during each of the construction stages in prevailing wind conditions are predicted to exceed the NML criteria at the Baitul Huda Mosque (R06).

Whilst construction noise levels in construction scenarios SC01, SC02 and SC03, are predicted to exceed the NML; none of the receivers are predicted to exceed the highly noise affected criteria of 75 dBA.

Additionally, the above noise levels are considered conservative as it is unlikely that all plant and equipment will be operating concurrently. Therefore, the actual construction noise levels would be lower than the levels presented in the CNVIA.

It is considered that where exceedances occur, these can be appropriately minimised in line with the ICNG recommendations.

Operational Noise

The predicted noise level modelling in the ONVIA found that in a typical operation scenario (Scenario 1) and in a maintenance scenario (Scenario 2), the noise impact to all surrounding receivers are expected to comply with the established noise criteria for all time periods and stability categories.

The noise impact during an emergency scenario (Scenario 3) is expected to exceed the established criteria in some instances. However, this is representative of the worst-case emergency scenario and is expected to be short-term impact during a power outage (estimated to be up to a 1 hour event every 2 years).

All feasible and effective best practice mitigation measures for the Project have been rigorously assessed to minimise acoustic impacts to the greatest extent practicable. This includes the selection of alternative plant equipment, and the introduction of noise mitigating barriers around the proposed chiller plants to reduce environmental impacts on nearby sensitive receptors and the surrounding area. This is seen to be an appropriate and proportionate mitigation strategy.

Hazards and Risks

The operation of the data centre requires the storage of a quantity of diesel fuel (for generators), and lithium-ion batteries. A potentially hazardous development screening review of the proposed dangerous goods storage systems has confirmed that the development is not classed as a “potentially hazardous industry”.

The storage of batteries and diesel storage has also been shown to be generally compliant with relevant standards including AS/NZ S4681, AS IEC 62619, FM Global Property Loss Prevention Data Sheet 05-32, and AS 1940.

Air Quality

The AQIA prepared in support of the EIS found that, given the size of the site, the distance to sensitive receptors, and the activities to be performed, residual impacts associated with dust emissions from the would be anticipated to be ‘low risk’ during the construction phase of the project, should recommended mitigation measures be implemented appropriately.

A worst-case scenario (Scenario 1) was assessed for the operation of the emergency back-up generators based on the event of a mains power failure. Under a worst-case operating scenario (Scenario 1) the predicted ground level concentrations at the nearby residential area to the south would be above the relevant NSW EPA impact assessment criteria for the assessed pollutants (NO₂, PM₁₀ and PM_{2.5}). A probability analysis for the likelihood of a worst-case scenario (Scenario 1) exceedance occurring in conjunction with the expected duration of an outage has been presented within the AQIA. The modelling predictions for this probabilistic scenario indicate levels would be below the applicable NSW EPA impact assessment criteria at all potentially affected sensitive receptors.

In relation to operation, the AQIA predicted that under a realistic operating scenario (Scenario 2) reflective of the maintenance requirements on both annual and monthly schedules, the predicted ground-level concentrations of pollutants (NO₂, PM₁₀ and PM_{2.5}) in the adjacent residential area to the south are within the acceptable impact assessment criteria set by the NSW EPA.

All feasible and effective best practice mitigation measures for the Project have been rigorously assessed to minimise emission impacts to the greatest extent practicable. This included consolidating the four (4) exhaust stacks into a single (1) flue stack to improve emissions and reduce environmental impacts on nearby sensitive receptors and the surrounding area. This configuration allows for increased diameter and greater stack height, extending above the datacentre roofline to reduce building wake effects and improve ground-level concentrations offsite. Nevertheless, additional management measures are recommended to further mitigate impacts as far as reasonably and feasibly practicable.

Traffic and Transport

The proposal will include provision for 265 car parking spaces, which will be sufficient to cater for the site and complies with relevant standards.

The site will be accessed from Hollinsworth Road, via a single left-in/left-out driveway. The site access driveway can accommodate all vehicles up to and including 19m Articulated Vehicles (AV). The site access arrangement would be able to accommodate vehicles immediately upon arrival, avoiding any queues exiting onto the external road network.

The peak hourly trip generation of the proposed development (133 trips during the AM and PM peak periods) are considered to be acceptable.

Furthermore, as determined in traffic modelling, subject to the completion of planned upgrades to Richmond Road, there would not be negative impacts on the road network resulting from the proposal.

The proposed construction activities are not expected to result in a negative impact on operation and safety of the surrounding road network.

Contamination and Remediation

The site will be remediated under the separate Early Works DA (DA-24-00386) which was approved by Blacktown City Council on 11 September 2024. The associated Remediation Action Plan indicates that following remediation, the site can be made suitable for the proposed land use as a data centre. As such, there is no further need to consider these matters under this SSDA.

Stormwater and geotechnical considerations

The stormwater quantity management plan demonstrates the stormwater network to adequately manage and dispose of stormwater runoff generated from the site. This includes the diversion of neighbouring surface flows which discharge to the proposed lot via a diversion swale.

An OSD system has been provided in accordance with all relevant guidelines to mitigate any potential increase of surface flows from the site. Stormwater discharges have included a tail out into the retained vegetated area to minimise the effects downstream.

Water quality treatments proposed would adequately treat the stormwater runoff generated from the site. This includes the provision of a rainwater tank that is sized to provide 80% of the non-potable water for irrigation and toilet flushing.

Soil erosion and sedimentation

Soil erosion and sediment control measures have been included for the proposed development. These measures have been prepared in accordance with industry best practices and consideration of the anticipated pollution sources to occur during construction.

Flooding

The proposed development site is not within a flood affected area and, has been planned so that surface levels to all existing floodplain areas in the 1% AEP storm are not changed. With new stormwater infrastructure being constructed as part of the development, there will be a reduction of runoff to this southeastern corner of the site.

Ecologically Sustainable Development (ESD)

The design of the data centre responds to ESD principles through its features which minimise energy and water consumption, improve stormwater quality, and manages pollution. The office component of the proposed development will target a minimum NABERS Energy rating of 5.5-stars, and a minimum NABERS Water rating of 3-stars.

Climate Resilience

The Proposal will strive to implement climate adaptation principles to increase the resilience of the development to risks caused by projected changes in climate. This will include designing for energy efficiency and grid resilience and installing additional power sources such as back-up generators or battery storage located above the flooding heights.

A Climate Change Adaptation Plan is recommended to be further developed to further assess the projected climate risks for the site. This will allow for early mitigation for any elements found to be at high-risk to be designed for long-term safety, security, and operation.

Greenhouse gas and energy efficiency

Large-scale data centres can achieve higher efficiencies over smaller-scale ones. The Marsden Park Data Centre Campus has a target PUE of 1.3 which reflects a 19% improvement over the market average. The proposed development is anticipated to have minimal GHG impact by 2050. Additionally, CDC has committed to being net-zero in operations for all corporate emissions and supports tenants in achieving net-zero operations by providing renewable energy supply choices at the facility.

Aboriginal Heritage

The works proposed within the SSDA are not expected to disturb any artefacts, and do not require an additional AHIP. Notwithstanding, a number of mitigation measures are proposed to be adopted to ensure there are no additional potential impacts on Aboriginal cultural heritage beyond those identified as a result of the Early Works DA.

Non-Aboriginal Heritage

Research and analysis undertaken for this report did not discover any significant historical uses for the site and it has been concluded that the site does not possess historical heritage significance or archaeological significance. Notwithstanding, a number of mitigation measures are proposed to ensure no adverse impacts result in relation to Non-Aboriginal heritage.

Biodiversity

The biodiversity impacts associated with the subject SSDA are negligible. A proposed Asset Protection Zone (APZ) encroaches into non Bio-certified land by only approximately 30sqm requiring the removal of four (4) additional trees above those approved for clearing under the Early Works DA. Any vegetation clearing within the non-bio-certified land will be significantly minimal in comparison to the area of the retained vegetation within the bio-certified land (4,000sqm).

Waste Management

Consideration of construction and operational phase waste generation has been undertaken as a part of the preparation of the proposal. Construction waste is capable of being suitably managed throughout the construction phase of the project, while appropriate waste areas have been included within the site to manage waste once the proposal is operational.

Crime Prevention

A CPTED assessment has been undertaken within the EIS to ensure that the proposal is consistent with CPTED principles.

BCA Compliance and Accessibility

The proposal has been assessed against the relevant requirements of the BCA. The assessment determines that BCA compliance can be achieved, with a number of items to be resolved prior to construction.

Social and Economic Benefits

The proposal will deliver a development outcome within a strategic employment precinct that will encourage growth of higher order jobs within Western Sydney. Specifically, it will accommodate up to 220 direct FTE jobs during the construction phase, and 265 FTE jobs once completed and fully operational.

More importantly, the proposal will result in the provision of critical infrastructure that is increasingly important in an ever increasing digitally based economy and represent a significant private investment in the NSW. The proposal is a direct response to demand within the NSW market for such facilities and will deliver infrastructure that provides a secure, reliable, and cost-effective way to store and process data, while also offering scalability and high levels of uptime.

PROJECT JUSTIFICATION

The EIS demonstrates that the proposal is both suitable for the site and in the public interest for the following reasons:

- The development is permissible in the IN2 – Light Industrial Zone and has been shown to be consistent with the objectives of the zone;
- Beyond the impacts associated with the testing of generators and emergency use of

generators in the event of a power outage, it is considered that the environmental impact of the proposal is low and that any potential adverse impacts which may result can be minimised or appropriately managed through proposed mitigation strategies;

- In relation to the design of the Proposal, it is considered that an appropriate balance has been struck between facilitating the bespoke built form requirements associated with data centres and the need to provide a built form and landscaping outcome which does not result in adverse visual, or amenity impacts, or appear at odds with the broader industrial character;
- The development will provide for the economic and orderly use of land intended for industrial purposes, and will see a formerly under-utilised site renewed and providing for new jobs during construction and operation; and
- The site will provide for a development outcome which will contribute to the continued success of the NSW and Australian economy through allowing private investment which provides an increasingly critical technological asset class of development to be delivered at the site.

As demonstrated above, the social, environmental, and economic impacts of the proposal have been assessed in detail as a part of this EIS and supporting documentation. It has been shown that the proposal will not result in any unjustified or unmanageable impacts on the surrounding community, or flora and fauna.

On this basis, there is strong justification for the proposal and the Delegate for the Minister is requested to grant development consent to enable the project to proceed.

1 Introduction

This Environmental Impact Statement (EIS) has been prepared by Patch Planning (Patch) on behalf of Canberra Data Centres Pty Ltd (the Applicant) in support of a State Significant Development Application (SSDA) for construction and operation of a data centre with an operational capacity of 504 megawatts (MW) on land known as 105 and 113 Hollinsworth Road, Marsden Park (the site). The applicant's details are provided in Table 1 below.

Table 1. Applicant Details	
Name	Canberra Data Centres Pty Ltd (CDC) c/- Patch Planning
ABN	59 125 710 394
Address	CDC Data Centres Pty Ltd 54 Sheppard Street Hume ACT 2620
Nominated Contact	Mason Stankovic, Patch Planning
Contact Details	0401 699 336

The EIS has been prepared in response to the SEARs issued under SSD-70889211 and contains the relevant information required to be provided in accordance with Section (s.) 190 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation 2021).

The EIS has been structured as below:

1. Introduction
2. Strategic Context
3. Project Description
4. Statutory Context
5. Community and Stakeholder Engagement
6. Assessment of Impacts
7. Project Justification
8. Conclusion and Recommendation

Supporting documentation which forms Appendices of the EIS are outlined in Table 2.

Table 2. Appendix List	
Number and Item	Consultant / Author
Appendix 1 – SEARs Table	Patch
Appendix 2 – Statutory Compliance Table	Patch
Appendix 3 – Proposed Mitigation Measures	Patch
Appendix 4 – Site Survey	Land Partners
Appendix 5 – Architectural Plans	EJE
Appendix 6 – Architectural Design Report	EJE
Appendix 7 – Landscape Masterplan Report	Terras Landscape Architects
Appendix 8 – Civil Drawings	Stantec
Appendix 9 – Aboriginal Cultural Heritage Assessment Report	Travers

Table 2. Appendix List	
Number and Item	Consultant / Author
Appendix 10 – Accessibility Report	MBC
Appendix 11 – Air Quality Impact Assessment	Todoroski
Appendix 12 – Arboricultural Impact Assessment	Travers
Appendix 13 – BCA Report	MBC
Appendix 14 – Biodiversity Development Assessment Report Waiver Request	Abel Ecology
Appendix 15 – Bushfire Report	Bushfire Hazard Solutions
Appendix 16 – Contamination Report	Stantec
Appendix 17 – Ecologically Sustainable Development Report	Stantec
Appendix 18 – Emissions Report (GHG Mitigation Plan and Climate Change Adaptation Plan)	Stantec
Appendix 19 – Engagement Report	Astrolabe
Appendix 20 – Estimated Development Cost Report	Rider Levett Bucknall
Appendix 21 – Historical Archaeological Assessment	Biosis
Appendix 22 – Groundwater Impact Assessment	Stantec
Appendix 23 – Geotechnical Report	JK Geotechnics
Appendix 24 – Preliminary Hazards and Risk Report	Vector
Appendix 25 – Infrastructure and Utilities Report	Stantec with CDC input
Appendix 26 – Integrated Water Management Plan	Stantec
Appendix 27 – NABERS Embodied Emission Form	Stantec
Appendix 28 – Construction Noise and Vibration Impact Assessment	Northrop
Appendix 29 – Operational Noise and Vibration Impact Assessment	Stantec
Appendix 30 – Statement of Heritage Impact	Biosis
Appendix 31 – Sydney Water Statement of Available Pressure & Flow	Sydney Water
Appendix 32 – Social Impact Assessment	Astrolabe
Appendix 33 – Traffic Impact Assessment (includes Green Travel Plan and Construction Traffic Management Plan)	Stantec
Appendix 34 – Visual Impact Assessment	Terras Landscape Architects
Appendix 35 – Waste Management Plan	JBS&G
Appendix 36 – Previous Relevant Consent (CDC 8591/1)	Various
Appendix 37 – Previous Relevant Early Works DA24/00386 Approval	Various

Table 2. Appendix List	
Number and Item	Consultant / Author
Appendix 38 – Previous Relevant 5MW Data Centre DA24/00542	Various
Appendix 39 – Marsden Park DCP Compliance Table	Patch
Appendix 40 – Easement Details	-
Appendix 41 – Prescribed Ecological Actions Report	Abel Ecology
Appendix 42 – GHG Mitigations Plan	Stantec

1.1 Project Overview

1.1.1 Site Overview

The subject site is located on land known as 105 & 113 Hollinsworth Road, Marsden Park (the site) legally referred to as Lots 10 and 11 of Deposited Plan 1262052. The site is within the Marsden Park Industrial Precinct and is zoned IN2 Light Industrial.

The site is within the Blacktown City Council (Council) Local Government Area (LGA) and is located on the traditional Country (Nura) of the Cabrogal People of the Darug nation.

The site is located on a land parcel approximately 20.91ha in size and is bounded by industrial development to the north and west, the Baitul Huda Mosque and industrial development to the east, and the Castlereagh freeway reservation to the south.

The site has a primary frontage of 120m to Hollinsworth Road in the north-west corner of the site. The site has an approximately 220m secondary frontage to the Mosque Entry Road along the eastern boundary of the site. The site is broadly trapezoidal in shape with the northern and southern boundaries generally running parallel each other.

In its most recent state, the site was largely undeveloped, comprising tree canopy interspersed with areas of cleared grassland formerly used for rural-residential purposes. The site sloped down gently to the south-east with an average gradient of about 3°, falling from a high point of approximately Reduced Level (RL) 55.5 Australian Height Datum (AHD) in the northwestern corner to approximately RL 37.8 AHD in the southeastern corner and along the eastern boundary.

However, following the approval of a recent early works application, the site is now subject to earthworks construction which will significantly impact its presentation. The early works application, as well as other applications relevant to the site and this SSDA, are discussed in detail in 1.1.3 of this EIS.

The subject site is depicted in Figure 1 and Figure 2 below including both abovementioned lots.



Figure 1: Site Aerial
Source: Metromap, modified by Patch

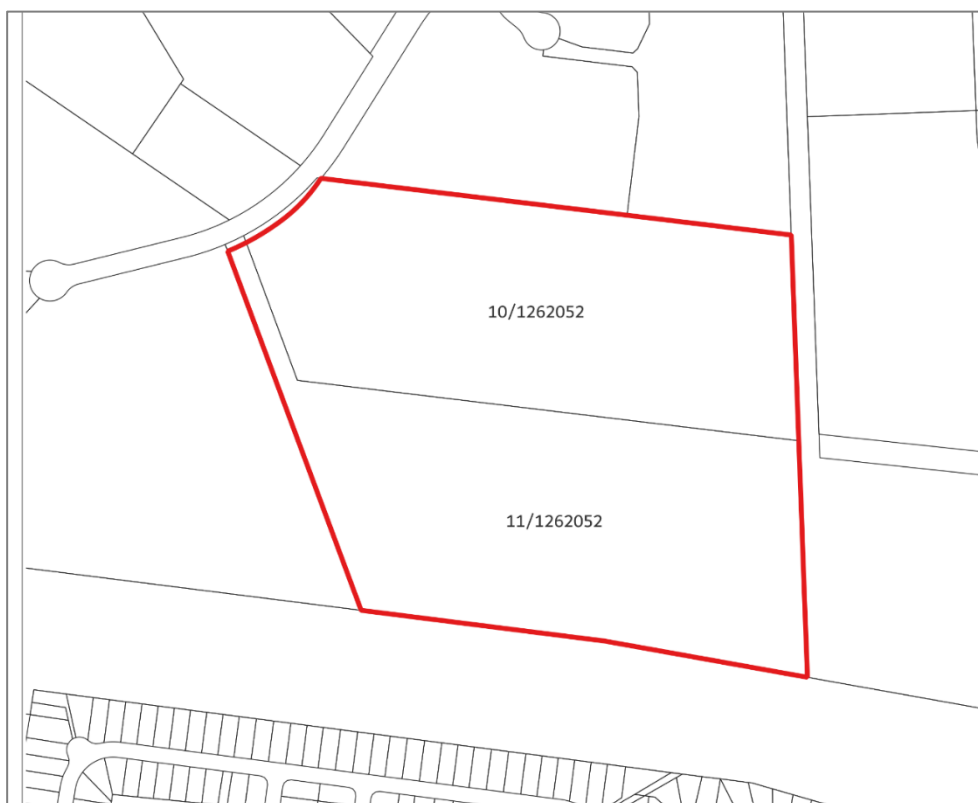


Figure 2: Site Cadastral Map
Source: Metromap, modified by Patch

1.1.2 Site Description

A description of the site and key site characteristics are provided in Table 3.

Table 3. Site Description	
Item	Description
Legal Description	Lots 10 and 11 of Deposited Plan 1262052.
Site Area	The site has a total area of approximately 20.91ha.
Easements	A 3m wide easement to drain water is located on the eastern boundary of the subject site through Lot 10 DP1262052. The site is benefitted by a 4.5m wide easement to drain water located within the adjoining property to the east being Lot 1 DP1176437 owned by Baitul Huda Mosque. The easement provides a connection for stormwater from the subject site to Langford Drive.
Site Condition	Prior to construction commencing for earthworks, the site was largely undeveloped, consisting of trees interspersed with areas of cleared grassland formerly used for rural-residential purposes. The site also contained two dams and connecting drainage lines.
Street Frontage and Access	The site has a primary frontage of 120m to Hollinsworth Road.
Topography	Prior to earthworks construction, the site sloped to the south-east falling from a high point of approximately Reduced Level (RL) 55.5 Australian Height Datum (AHD) in the northwestern corner to approximately RL 37.8 AHD in the southeastern corner and along the eastern boundary.
Services	The site is served by existing services connections for power, water, sewer, and telecommunications.
Flooding	Under the <i>North West Growth Centre Development Control Map</i> the site is not mapped as being flood prone land. However, the south-eastern corner of the site is identified by Council's Digital Cadastral Data Base as a 'low flood risk precinct', with no flood related controls applicable. This is discussed further in Section 6.11 of this EIS.
Biodiversity	Almost the entirety of the site was biodiversity certified per s. 126H of the <i>Threatened Species Conservation Act 1995</i>, made under the <i>Order to confer biodiversity certification on the State Environmental Planning Policy (Sydney Region Growth Centres) 2006</i> dated 11 December 2007. A separate Early Works DA (PAN-426243) that includes the removal of 949 trees was approved by Blacktown City Council on 11 September 2024 and will facilitate the construction of the proposed future data centre on the site. PAN-426243 is supported by an Arborist Report prepared by Travers Bushfire & Ecology and a Dam Dewatering Plan prepared by Cumberland Ecology. A copy of the Early Works DA approval provided as Appendix 36. No element of the site is identified on the Biodiversity Values Map. No vegetation is located within the development footprint of SSD-70889211, with four (4) trees proposed to be removed to facilitate the creation of Asset Protection Zones.
Bushfire prone land	The site is identified as being Vegetation Category 1 and Vegetation Buffer bushfire prone land. Four (4) trees are proposed to be removed to facilitate the creation of appropriate Asset Protection Zones. This is discussed further in Section 6.20 of this EIS.
Aboriginal Heritage	The subject site contains a Potential Archaeological Deposit (PAD) located within the area subject to works. Works that will disturb Aboriginal objects have been approved by Blacktown City Council under the Early Works DA (PAN-426243). The Early Works DA requires the granting of an AHIP.

Table 3. Site Description	
Item	Description
	The works proposed within the SSDA are not expected to disturb any artefacts, and <u>do not require an additional AHIP</u> . This is discussed further in Section 6.18 of this EIS.
European Heritage	There are no items of State or local heritage significance identified within or proximate to the site. This is discussed further in Section 6.19 of this EIS.

1.1.3 Surrounding Context

The site is located in Marsden Park, within the Blacktown LGA. The surrounding developments in the immediate vicinity include:

- **North:** Large industrial warehouse and distribution centres leased out to various businesses, and the South Marsden Park zone substation.
- **East:** Immediately joining the site is 45 Hollinsworth Road and its 20m wide access handle, currently used by Baitul Huda Mosque. Immediately opposite the access handle is Costco Marsden Park, a large format retail premises.
- **South:** Castlereagh Freeway reservation. Beyond the reservation is low density residential housing of Hassall Grove.
- **West:** Large industrial warehouse and distribution centres leased to various businesses.

Access to the site is provided off Hollinsworth Road, which provides close connections to Richmond Road and the M7 Motorway. The site is reasonably connected via public transport, with bus stops located on Hollinsworth Road immediately north of the site providing connections to Blacktown, Marsden Park, Mount Druitt and Rouse Hill.

A rail corridor preservation linking Tallawong to St Marys via Schofields runs in close proximity to the site, approx. 800m to the west. The site will also benefit from its proximity to the undeveloped Marsden Park Town Centre, located 1.6km to the north.

The surrounding site context is illustrated in Figure 3 below.

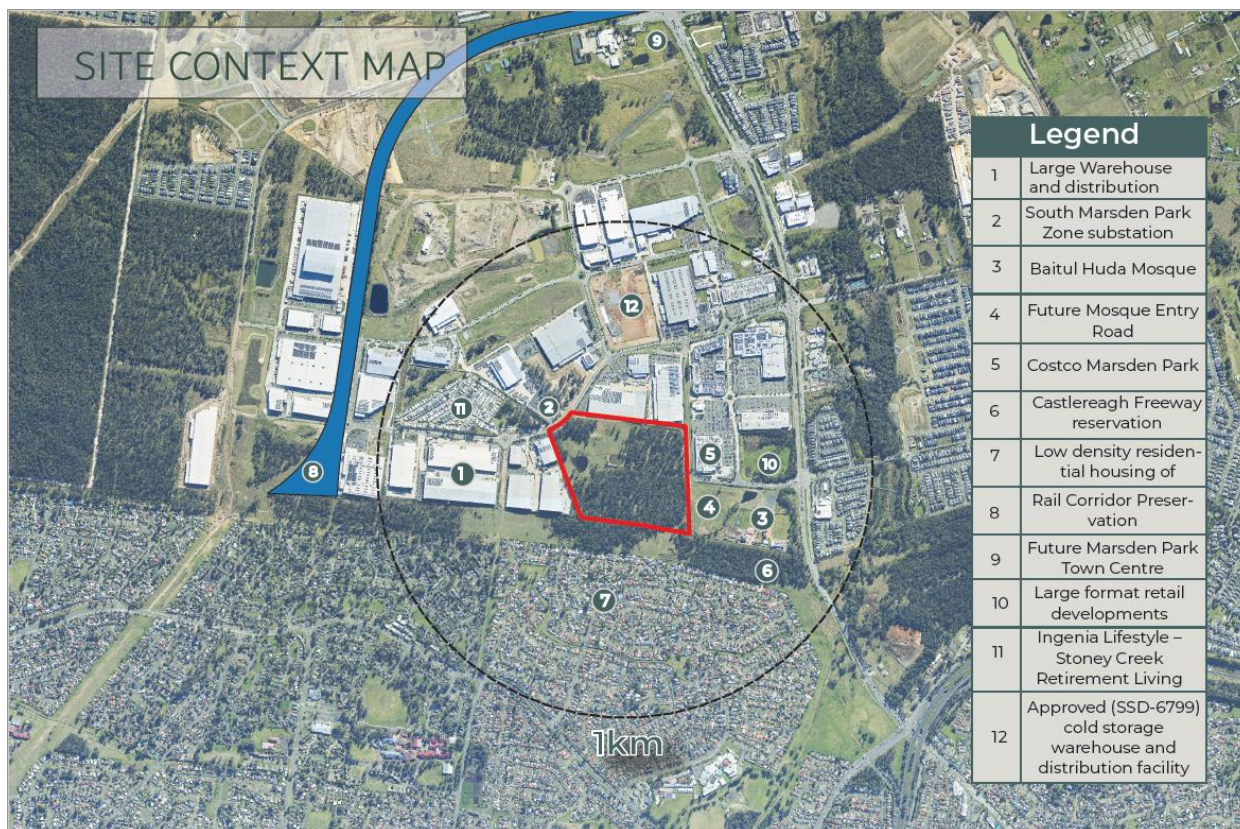


Figure 3: Site Context Map
Source: Metromap, modified by Patch

1.2 Relevant Approvals

There are several development approvals of relevance to the SSDA including:

- Complying Development Certificate (CDC) #8591/1 which provided consent for demolition of existing structures on site. The CDC was approved 24 January 2024;
- Development Application (DA) for Early Works (DA-24-00386, PAN-426243) was approved by Council on 11 September 2024; and
- DA for a 5MW Data Centre, internal road network, and associated infrastructure (DA-24-00542, PAN-435950) currently under assessment by Council and expected for approval in November 2024.

Details of the interrelated approvals are discussed below.

1.2.1 CDC 8591/1 – Demolition of Existing Structures (Approved)

On 24 January 2024, a CDC (Certificate Number: 8591/1), Council Reference: CDC-24-00077) was issued by Certis (NSW) Pty Ltd (Certis) which provided consent for demolition of existing structures at the site. Specifically, the CDC approved demolition of one (1) existing dwelling house, seven (7) ancillary structures, fencing and other remaining remnants of other structures on the site.

The works have since been completed, and on 1 May 2024, an Occupation Certificate (OC) (OC-24-01492) was issued by Certis for the works undertaken.

Figure 4 below depicts the extent of demolition permitted under the CDC issued. A copy of all documentation lodged in support of CDC 8591/1 is provided as **Appendix 36**.

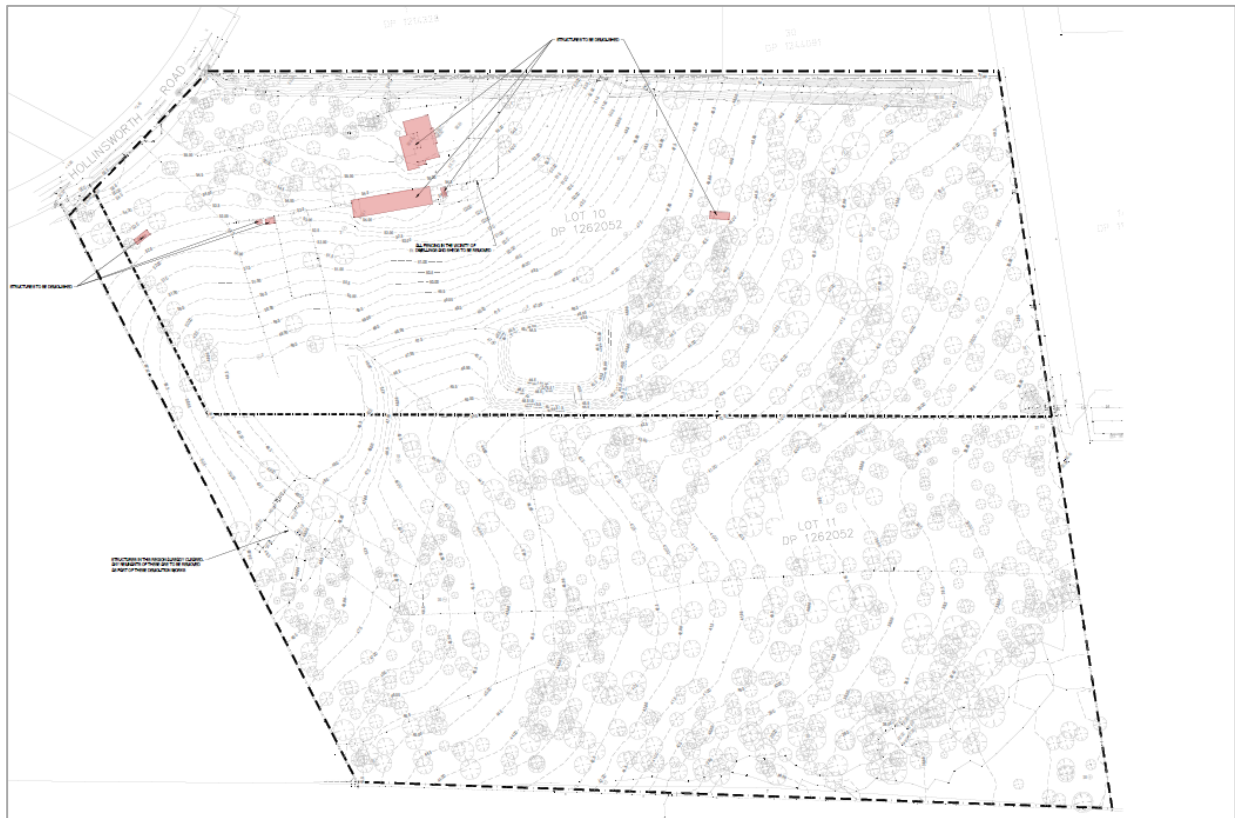


Figure 4: Demolition Plan (not part of SSDA)
Source: CDC 8591/1 Demolition Plan, EJE Architecture

1.2.2 DA-24-00386 – Early Works DA (Approved)

On 14 April 2024 an early works DA (DA-24-00386 / PAN-426243) (the Early Works DA) was lodged with Blacktown City Council. The application was approved by Council on 11 September 2024, providing consent for:

“Staged early works including tree removal, dewatering of dams, bulk earthworks and site remediation works to facilitate future industrial development of 7 data centres. The proposal is classified as “Integrated Development” under Section 4.46 of the Environmental Planning and Assessment Act 1979, as concurrent approval is required from Heritage NSW under Section 90 of the National Parks and Wildlife Act 1974.”

A description of the relevant aspects of the early works application is provided below. A copy of all documentation lodged in support of the Early Works DA is provided as **Appendix 37**.

Tree Removal

The Early Works DA seeks approval for the removal of 949 trees across of the site, with 215 to be retained along the southern and eastern boundaries of the site. The trees to be removed under the Early Works DA are identified in Figure 5.

Dam Dewatering

The Early Works DA seeks approval for the decommissioning of two (2) dams within the site. The location of the dams is shown in Figure 6.

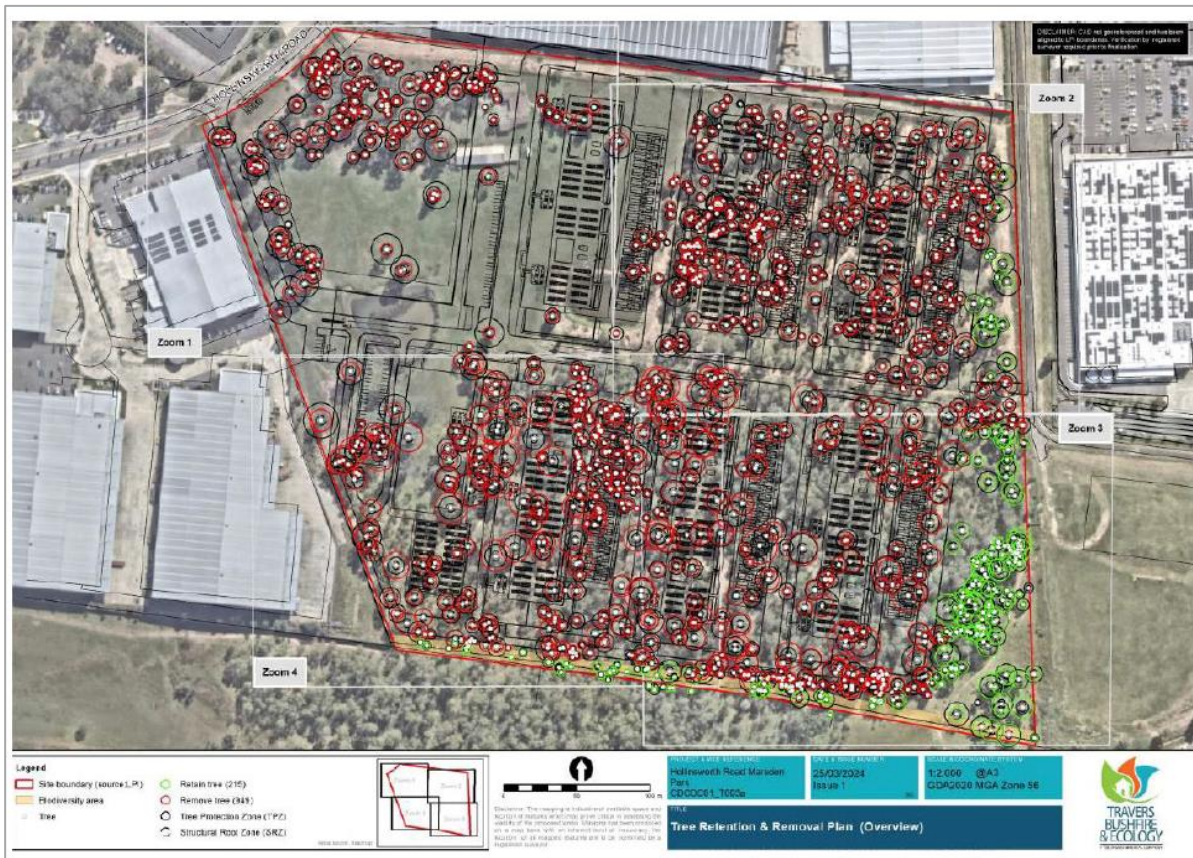


Figure 5: Approved Tree Removal Plan (not proposed under SSDA)
Source: DA-24-00386 Arboriculture Impact Assessment, Travers Bushfire and Ecology



Figure 6: Location of the subject site and dams
Source: DA-24-00386 Dam Dewatering Plan, Cumberland Ecology

Bulk Earthworks

The Early Works DA seeks approval for the bulk earthworks across the site and interim stormwater works. In summary, the bulk earthworks would establish pad sites for the data halls proposed under the SSDA as well as the 5MW facility (referred to below), a substation, internal roads and car parking areas. The levels proposed closely align with the final levels required to facilitate the proposal (SSD-70889211).

The intent of the bulk earthworks design is to result in a balanced cut/fill outcome. The initial earthworks will provide building footprints for future development, and do not include detailed service trenching for the proposed facilities. An extract of the proposed cut and fill diagram approved as part of the Early Works DA is provided as Figure 7 and identifies that as part of initial building and infrastructure site works, approximately 180,000 cubic metres (m³) of additional cut volume will be generated from foundations, piling and services trenching, which will be stockpiled and reused on the site. Once added, the bulk earthworks to the site will be close to balanced with no earthworks volume required to be brought into site to make up the total earthworks volumes. It is expected that the balance for the earthworks upon completion of all stages is 0m³.

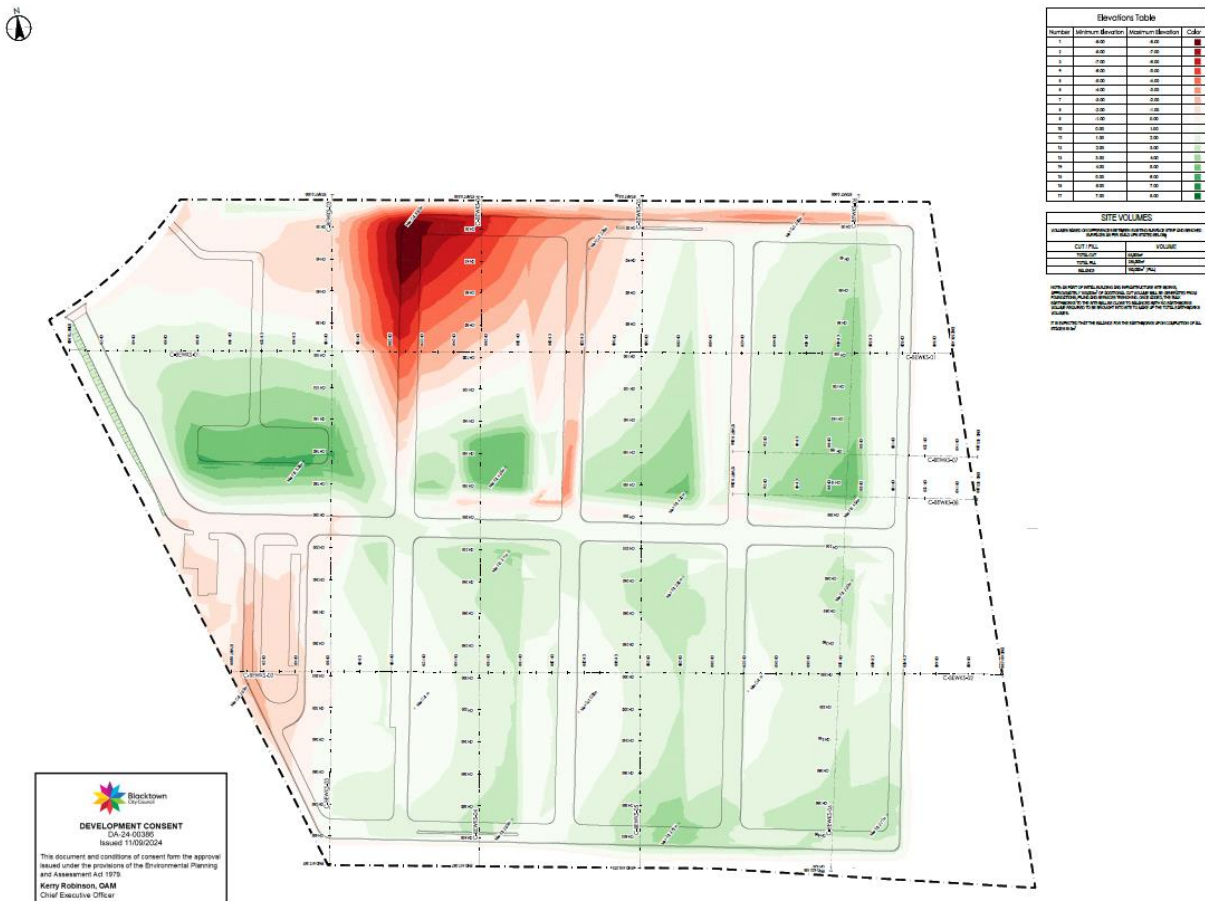


Figure 7: Approved Cut and Fill Diagram (not proposed under SSDA)

Source: DA-24-00386 Civil Plans Drawing CDC-SYD-MP.EW-CV-DG-0100-01, Stantec, Approved by Blacktown City Council 11 September 2024

Remediation

The Early Works DA seeks approval for the remediation of the site to make the site suitable for industrial development, and specifically to facilitate the proposal (SSD-70889211). Remediation of the site will be undertaken under a Remediation Action Plan (RAP) which is currently being finalised in accordance with relevant planning instruments, including the Resilience and Hazards SEPP and associated guidelines.

1.2.3 DA-24-00542 – 5MW Data Centre (Under Consideration)

On 3 June 2024 a DA (DA-24-00542 / PAN-435950) (the 5MW Data Centre DA) was lodged with Blacktown City Council for the construction of a part 1-storey part 2-storey 5MW data centre facility with ancillary office, associated plant, equipment, civil works, parking and landscaping, as shown in Figure 8. The 5MW Data Centre DA is currently under assessment by Council.

Table 5 provides a summary description of the 5MW Data Centre DA. A copy of all documentation lodged in support of the 5MW Data Centre DA is provided as **Appendix 38**.

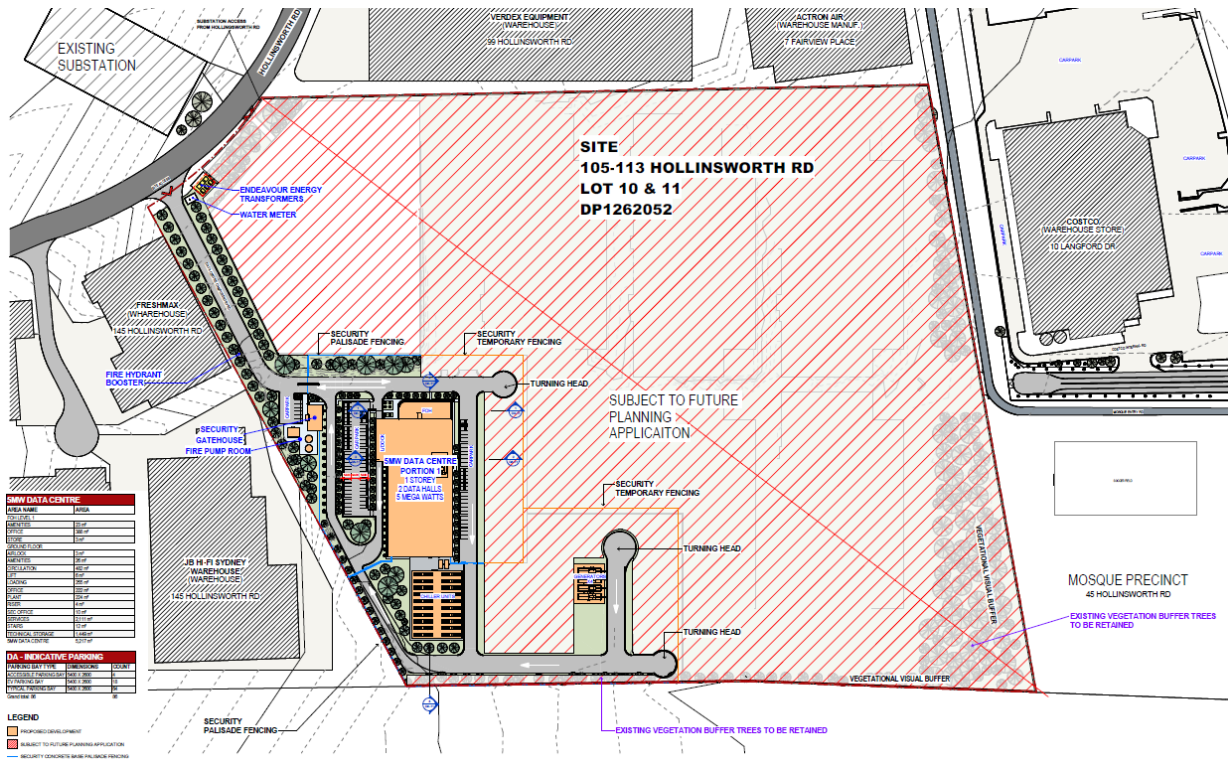


Figure 8: 5MW Data Centre Site Plan

Source: DA-24-00542 Architectural Plans, EJE Architecture

Table 4. 5MW Data Centre Proposed Development Summary	
Item	Description
Use	5MW data centre with ancillary office, associated plant, equipment, civil works, parking, landscaping and associated works.
Estimated Development Cost	\$53,940,000 including GST
Consent Authority	As the estimated development cost exceeds \$30,000,000 including GST, it will therefore be classified as regionally significant development in accordance with Schedule 6 of the <i>State Environmental Planning Policy (Planning Systems) 2021</i> (PS SEPP 2021). Accordingly it will be determined by Sydney Central City Planning Panel (SCCPP) (Planning Panel Reference Number: PPSSCC-562).
Earthworks and Stormwater	Minor earthworks are required to facilitate construction. The earthworks will otherwise align with the approved earthwork pads to be constructed under the Early Works DA (DA-24-00386). On-site stormwater will be diverted to a temporary OSD basin before being discharged through existing easements and pipes to Langford Drive.
Built Form	Construction of:

Table 4. 5MW Data Centre Proposed Development Summary

	- One (1), part one, part two storey data centre building containing two (2) data halls with a capacity of 5MW and 689sqm of ancillary office floor space across the ground floor and an upper level; - Internal fit out of the data centre including plant, technical storage and service areas; - Supporting plant and equipment including four (4) generators and 20 chiller units; - Civil works including stormwater and fire management infrastructure, utilities, internal roads, carparking and turning heads, and landscaping; and - Security systems including a 166sqm gatehouse, security gate, permanent palisade fencing and temporary security fencing.
Height	Data Centre: 10.9m Security Gatehouse: 8.2m
Vehicular Access and Internal Roads	Site access is proposed via a left in-left out, bi-directional campus entry road to Hollinsworth Road. Access arrangements include: - Site access via a single driveway from Hollinsworth Road. - Construction of five (5) internal access roads and three associated temporary turning heads. All roads on site have been designed to accommodate 19m long articulated vehicles, B99 vehicles, Small Rigid Vehicles (SRV), and the FRNSW specialist fire appliance vehicles.
Parking	Construction of 86 car parking spaces including: - Six (6) spaces outside of the secure area of the site (fronting the gatehouse), 80 staff parking spaces in a dedicated car park to the west of the site and along the internal road to the east, including four (4) accessible spaces and 12 EV charging bays.
Hours of Operation	The data centre will operate 24 hours a day, seven days a week, however office staff will generally only be on site during business hours.
Landscaping	Embellished landscape areas are proposed around the driveway, hardstand areas and data centre building.
Power supply	The proposed 5MW data centre building utilises an on-site uninterrupted power supply (UPS) system comprising of: - Back-up diesel generators and associated diesel fuel storage systems located externally. - Lithium-ion battery energy storage systems generally located within Battery Rooms and Data Halls.
Tree Removal and Remediation	To be undertaken per the separate Early Works DA (DA-24-00386).
Services and Infrastructure	The subject site is currently serviced by water, electricity, telecommunications and sewer. The services will be upgraded and connected as part of the detailed design, following issue of consent.

1.3 Project Summary

The SSDA seeks approval for the construction and operation of a data centre campus with an operational capacity of 504 megawatts (MW), comprising six (6) four (4) storey data centre buildings, ancillary office space, generators, substation, diesel storage, hardstand and landscaping. The facility will operate 24 hours a day, 7 days a week. In summary, approval for the following is sought:

- Minor site preparation works and the installation of services to enable the construction of the data centre campus;
- Staged construction of six (6) x four (4) storey data centre buildings, each containing: 12 data halls, 12 battery rooms, 40 generators (20 double stacked), loading docks, ancillary office space and associated mechanical, electrical and water infrastructure;
- The proposed development will have a typical height of 35m above ground and a maximum height of 37.515m;
- Construction of 12 two-storey skybridges linking the data centres;
- Provision for a dedicated 720MVA substation at the northern boundary with direct access to Hollinsworth Road, to serve the data centre campus in its entirety, subject to future detailed design;
- Construction of an internal road network to enable vehicular circulation around the campus, loading areas and on-site car parking;
- Removal of four (4) trees to facilitate the creation of Asset Protection Zones;
- Landscaping works, including the retention of a landscaped buffer along the southern and eastern boundary of the site and the introduction of a landscaped buffer along the northern and western boundaries of the site; and
- Construction of a 3m high security fence along the perimeter of the site.

Initially and prior to the establishment of the proposed onsite 132/11kV Zone Substation, the site shall be supplied from South Marsden Park Zone Substation at 11kV. A Preliminary Enquiry for the 132kV supplies to the site has been lodged with the Supply Authorities and is currently in the process of being reviewed.



Figure 9: Photomontage of entire campus proposal viewed from Hollinsworth Road
Source: EJE Architecture

1.4 Project Alternatives

Table 5 outlines three (3) feasible alternatives: 'Do Nothing', alternative design and the proposed design.

Table 5. Project Alternatives Considered

'Do Nothing'	The 'Do Nothing' option would result in the site remaining vacant and undeveloped and an opportunity being missed to deliver a data centre development at the site. It is noted that data centres are considered critical to the proper day to day functioning of the economy which is increasingly reliant on digital infrastructure and systems. Data centres play an important role in ensuring network security and for making sure that there is data back-up and recovery available in an emergency such as a power outage or some form of disaster. Taking into consideration the above, it is considered that the construction of a new data centre campus at the site provides for a better outcome when compared to a 'do nothing' scenario given the critical role data centres play in the proper functioning of the economy.
Alternative Design options	Several different design options have been considered at the site throughout the master planning and design development phases of the project. The primary alternative design option considered included 260 individual flues for the emergency back-up generator exhaust stacks, and lower acoustic barriers to the chiller plants. Throughout the detailed design process, it was determined that the previous design provided for a poorer outcome when compared to the current design. As such, the design which is the subject of this approval was pursued for the SSDA as it will result in fewer environmental impacts.
Proposed Design	The option which is proposed in this SSDA was selected as it will result in an optimal design outcome with operational, constructability and amenity impacts when compared to previous designs. Furthermore, the proposal will provide for a development outcome which will result in the following: • The provision of critical infrastructure that will support the economy and community alike, resulting in both economic and social benefits; • Results in a development outcome which will have minimal adverse built form impacts and be compatible with the site and surrounds; • Provides a low intensity, high technology land use, which interfaces appropriately with surrounding land and transport network; and • Is consistent with the desired future character of the Marsden Park Industrial Precinct. Taking into consideration the above, it is considered that the proposed design provides for a better outcome when compared to the 'do nothing' scenario and alternate design option.

2 Strategic Context

This section of the EIS describes the way in which the proposal addresses the strategic planning policies relevant to the site. It identifies the key strategic issues relevant to the assessment and evaluation of the project, each of which are addressed in further detail in Section 6 of this EIS.

2.1 Greater Sydney Region Plan

A *Metropolis of Three Cities* is the current Region Plan applying to Sydney, released by the Greater Sydney Commission in 2018. It sets a 40-year vision for the entirety of the Sydney metropolitan area, based on the establishment of three 'cities' where most residents will live within 30 minutes of their jobs, education and health facilities, services and great places. Shown in Figure 10, the three cities are:

- The Western Parkland City, an emerging city focused around the new Western Sydney International Airport;
- The Central River City, developing around Greater Parramatta (The site is located within the Central River City); and
- The Eastern Harbour City, largely established and centred around the Sydney CBD.

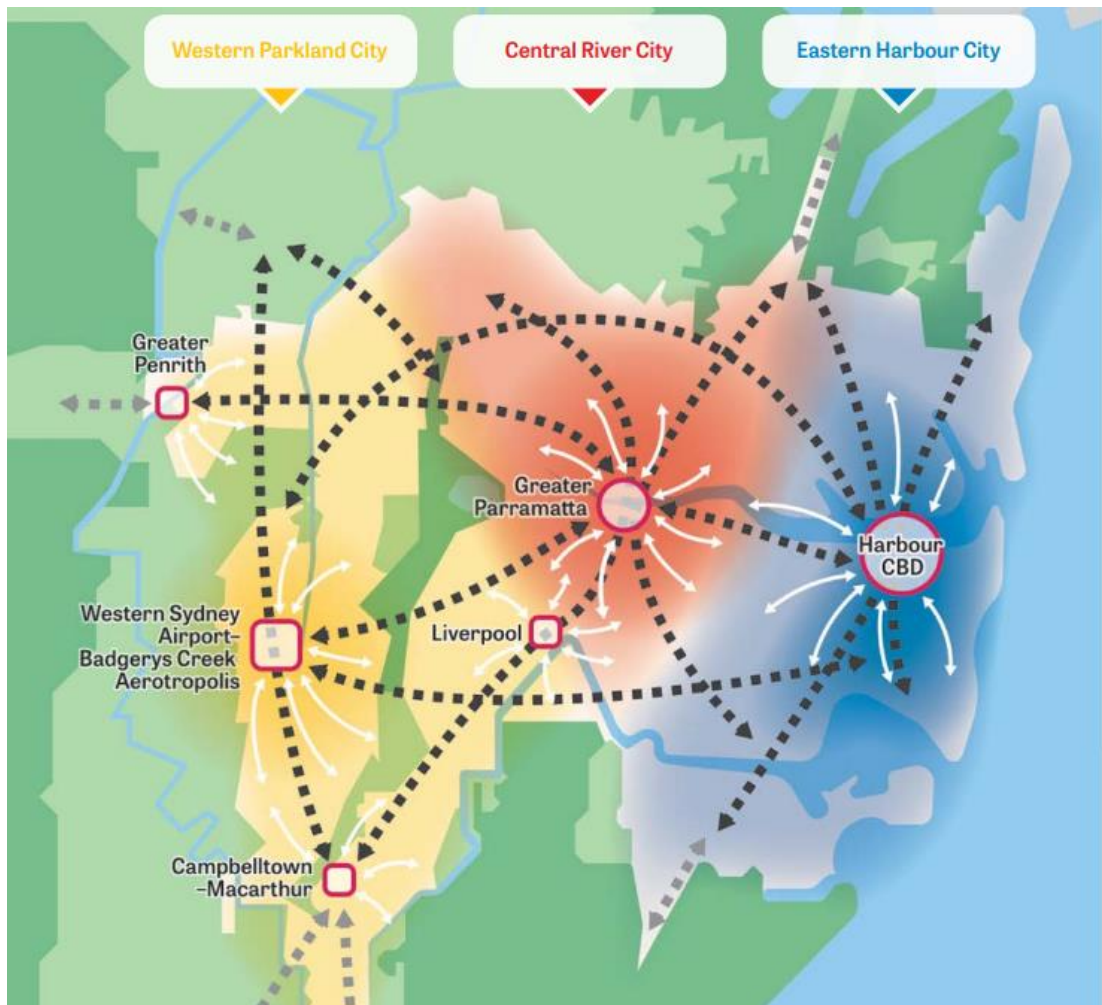


Figure 10: Three Cities Plan
Source: Greater Sydney Commission

The plan also gives effect to five underlying ‘District Plans’, which provide 20-year frameworks to manage growth. The subject site is located within the Blacktown LGA, which is captured under the ‘Central City District Plan’, discussed further in Section 2.1.1.

While the purpose of the Region Plan is to guide strategic planning decisions by authorities, the subject proposal is nevertheless consistent with its vision, particularly as it relates to the provision of more jobs within the Central City District. The proposal will help realise the following objectives contained within the Region Plan:

- **Objective 22** *Investment and business activity in centres.*
- **Objective 23** *Industrial and urban services land is planned, retained and managed.*
- **Objective 33** *A low-carbon city contributes to net-zero emissions by 2050 and mitigates climate change.*
- **Objective 34** *Energy and water flows are captured, used and re-used.*
- **Objective 35** *More waste is re-used and recycled to support the development of a circular economy*

Each of the above objectives are tied to the Planning Principles within the District Plan, and are addressed in Section 2.1.1.

Region Plan Update – Six Cities Discussion Paper

The *Six Cities Discussion Paper* was released by the Greater Cities Commission (GCC) in September 2022. It was an initial step in the preparation of an update to the Region Plan that will consider a multi-city region spanning between the Lower Hunter and Newcastle City in the north, the Central Coast, Greater Sydney, and the Illawarra-Shoalhaven in the south.

Part of the 20-year vision outlined in the Discussion Paper relates to “*powering local jobs and economies*” and the intent to support long term investment through industrial lands. The important role of industrial lands is identified in the Discussion Paper, noting they help generate the investment needed to support the effective functioning of the Six Cities Region.

The Discussion Paper indicates that the future Region Plan will include an industrial lands policy across all six cities which will ensure that these areas are sustainably linked to global gateways like ports and airports.

2.1.1 Central City District Plan

The *Central City District Plan* provides a 20-year plan to manage growth in the Blacktown, Cumberland, Parramatta and The Hills LGAs. It sets a number of planning priorities for the precinct and helps inform local councils prepare Local Strategic Planning Statements (LSPS), develop local environmental plans (LEPs), and assess planning proposals.

The site’s location within the Central City is shown in Figure 11 where it is mapped as being within a ‘Land Release Area.’

The District Plan highlights the importance of industrial activity and urban services to Greater Sydney’s economy, and the nature in which industrial lands are evolving into complex employment lands as a result of emerging technologies. Pressures for the conversion of industrial land are noted as being particularly strong in the Central River City.

As identified in Figure 12, the site is located within the emerging strategic centre of Marsden Park. Marsden Park is identified as being the largest employment zone in the North West Growth Area with a 2036 employment target of between 5,000 (baseline) and 10,000 (higher target).

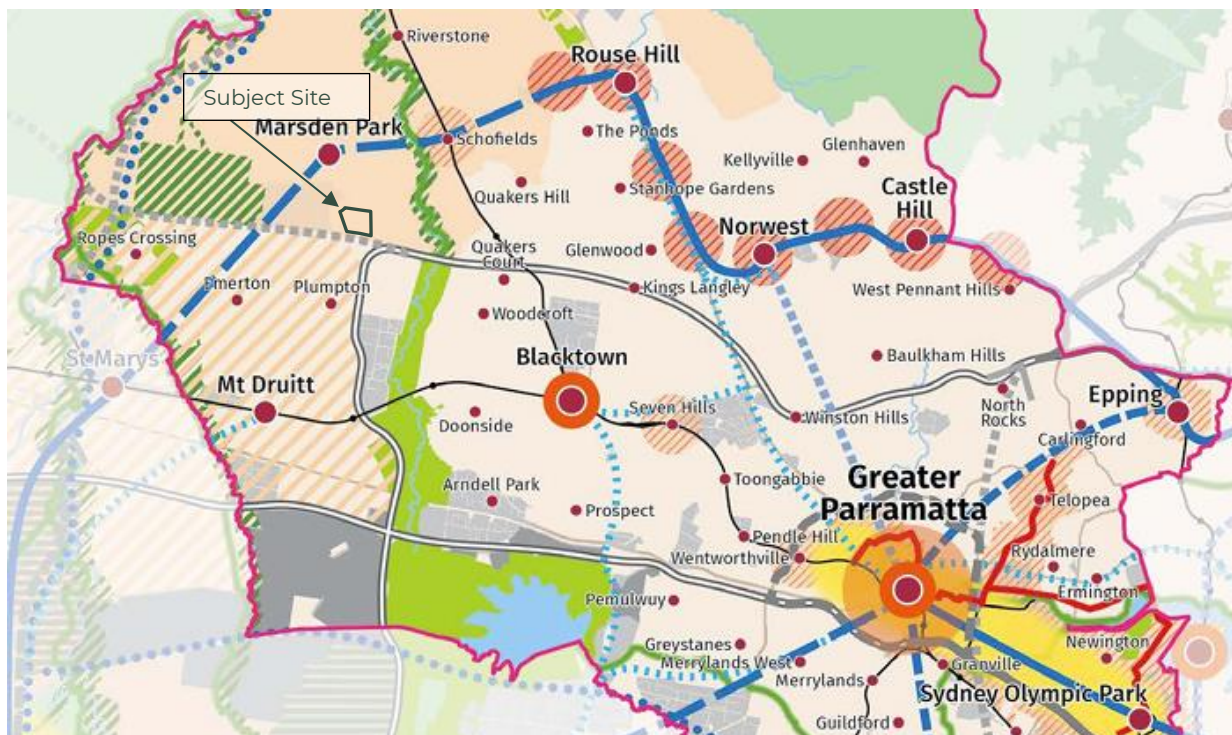


Figure 11: Central City District Plan (site's approximate location outlined in green)
 Source: Greater Sydney Commission, modified by Patch

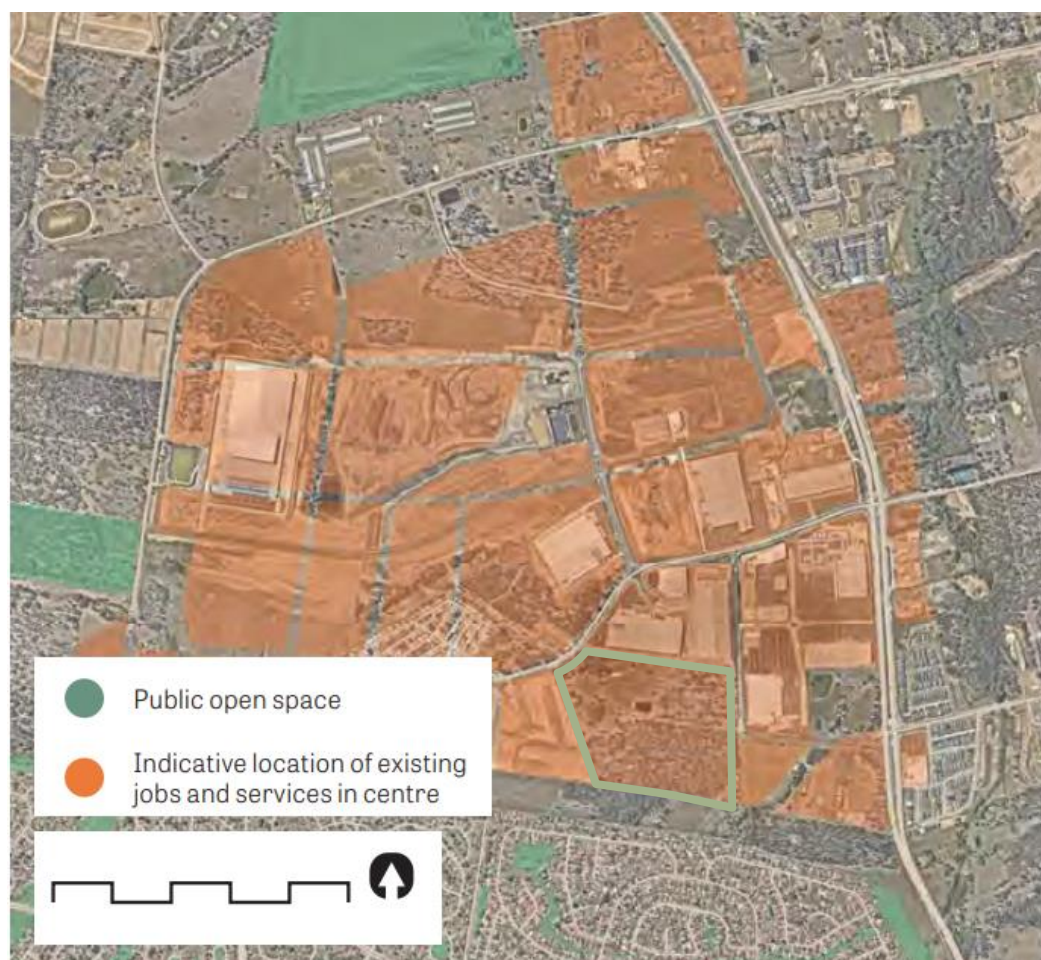


Figure 12: Marsden Park Strategic Centre (site's approximate location outlined in green)
 Source: Greater Sydney Commission, modified by Patch

The proposal supports the realisation of a number of Planning Priorities contained within the District Plan, specifically:

- **Planning Priority C9:** *Delivering integrated land use and transport planning and a 30-minute city.*

It does this by focusing growth within the Marsden Park strategic centre which will help to reduce the need for people to travel long distances to access jobs. This will help to realise **Objective 22** *Investment and business activity in centres of the Region Plan.*

- **Planning Priority C10:** *Growing investment, business and job opportunities in strategic centres.*

It does this by focusing employment growth and economic development within the Marsden Park strategic centre, which in turn helps to underpin the economy of the Central City District. This will help to realise **Objective 22** *Investment and business activity in centres of the Region Plan.*

- **Planning Priority C11:** *Maximising opportunities to attract advanced manufacturing and innovation in industrial and urban services land.*

It achieves this by utilising vacant industrial land within the Marsden Park strategic centre for a high technology industry use which will contribute to the digital economy. Similarly, the proposal will support the retention and management of industrial and urban services land, by safe-guarding industrially zoned land from conversion to residential development, including conversion to mixed-use zones. This will help to realise **Objective 23** *Industrial and urban services land is planned, retained and managed of the Region Plan.*

- **Planning Priority C12:** *Supporting growth of targeted industry sectors.*

It achieves this by utilising vacant industrial land within the Marsden Park strategic centre for a high technology industry use which will contribute to and support the digital economy, which in turn will support the growth of targeted industry sectors more broadly.

- **Planning Priority C19:** *Reducing carbon emissions and managing energy, water and waste efficiently.*

It achieves this by delivering a project that has been designed to include ecologically sustainable design initiatives that minimise its consumption of resources, specifically in relation to energy, waste and water in line with the standards specified in Schedule 3 of the SB SEPP 2022. The proposal is supported by a NABERS Embodied Emissions Material Form that quantifies the embedded emissions associated with the proposal. This will help to realise the following objectives of the Region Plan: **Objective 33** *A low-carbon city contributes to net-zero emissions by 2050 and mitigates climate change;* **Objective 34** *Energy and water flows are captured, used and re-used;* and **Objective 35** *More waste is re-used and recycled to support the development of a circular economy.*

2.1.2 Blacktown Local Strategic Planning Statement

The *Blacktown Local Strategic Planning Statement 2020* (LSPS) is Council's primary strategic planning document and provides a 20-year land use vision for the LGA. It directs how future growth and change will be managed across the LGA and informs changes to relevant environmental planning instruments and development control plans.

The vision outlined for the LGA in the LSPS is to be a “*City of Excellence – diverse, dynamic, progressive.*” This vision is further articulated as a 20 year planning vision to be “*a planned city of sustainable growth, supported by essential infrastructure, efficient transport, a prosperous economy and equitable access to a vibrant, healthy lifestyle.*”

The LSPS identifies the site as being within the Marsden Park employment area, as shown in Figure 13. The LSPS seeks to transform the LGA’s employment lands into advanced manufacturing hubs with a diversity and density of jobs, and opportunities for local workers to boost their skills and knowledge. By retaining employment land, the LSPS intends to create one of the largest concentrations of employment in Greater Sydney. Of this, Marsden Park will be home to the largest portion of employment land in the Central City District.

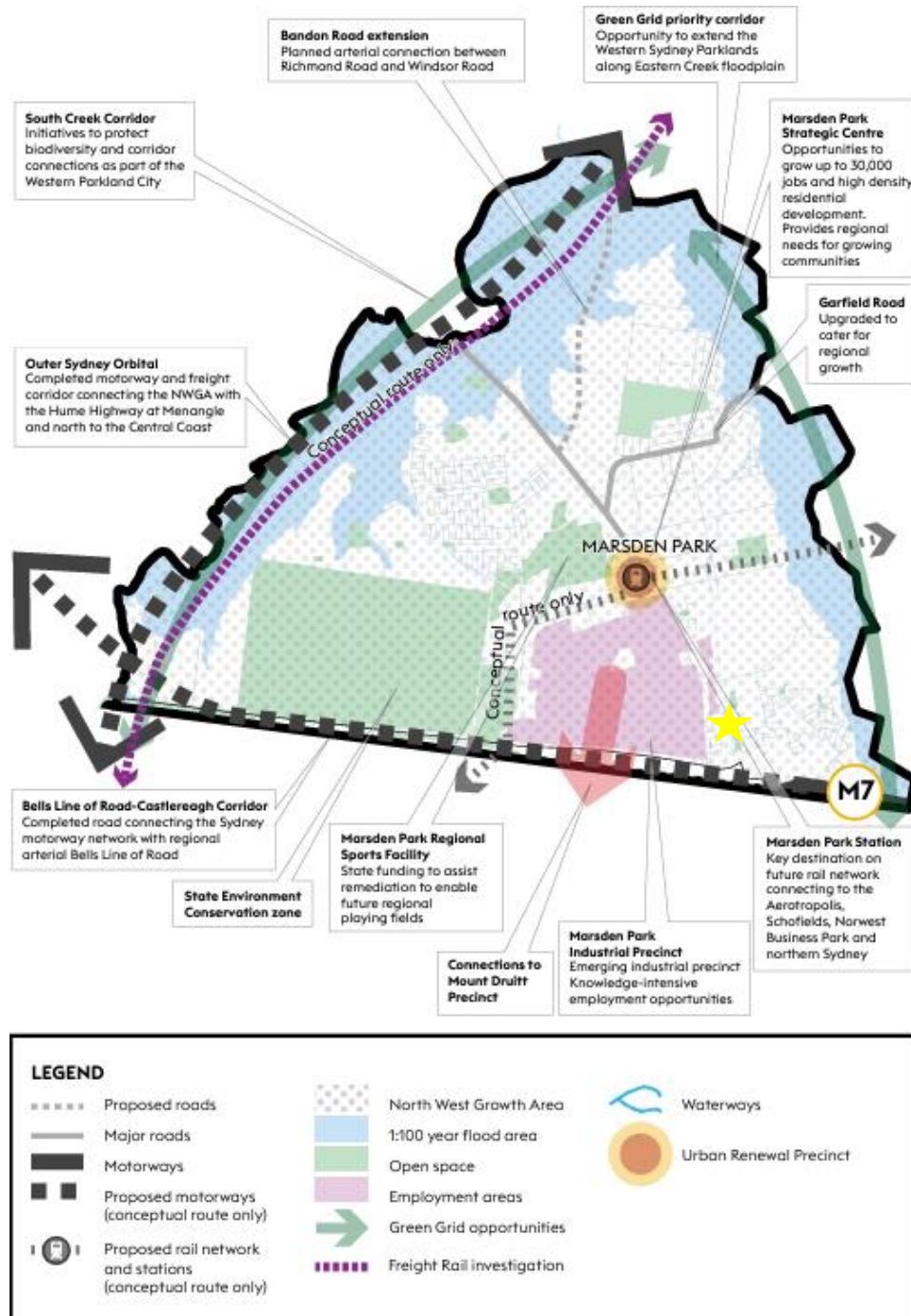


Figure 13: Marsden Park Structure Plan (site’s approximate location identified by star)
Source: Blacktown City Council, modified by Patch

The proposal directly supports the realisation of the following Local Planning Priorities (LPP):

- **LPP8:** *Growing mixed use, investment, business and job opportunities in Strategic Centres*

It does this by focusing employment growth and economic development within the Marsden Park strategic centre, which in turn helps to underpin the economy of the Central City District and State more broadly. This will help to realise **Objective 22** of the Region Plan, and **Planning Priority C10** of the District Plan.

- **LPP9:** *Maximising opportunities to attract advanced manufacturing and innovation in industrial and urban services land*

It achieves this by utilising vacant industrial land within the Marsden Park strategic centre for a high technology industry use which will contribute to the digital economy.

Similarly, the proposal will support the retention and management of industrial and urban services land, by safe-guarding industrially zoned land from conversion to residential development, including conversion to mixed-use zones. This will help to realise **Objective 23** of the Region Plan, and **Planning Priority C11** of the District Plan.

- **LPP10:** *Growing targeted industry sectors*

It achieves this by utilising vacant industrial land within the Marsden Park strategic centre for a high technology industry use which will contribute to and support the digital economy, which in turn will support the growth of targeted industry sectors more broadly. This will help to realise **Planning Priority C12** of the District Plan.

3 Project Description

The following sections of the EIS summarise the key numeric components of the proposed development and describe the demolition, site preparation, construction, and operational phases in further detail.

3.1 Project Overview

This SSDA seeks approval for a new 504MW (IT Load) data centre campus referred to by the operator as 'The Marsden Park Data Centre Campus.' The proposed data centre campus will include the construction six (6) data centre buildings to complement the proposed 5MW data centre building which is being pursued under the local DA pathway (refer to Figure 14).

Each of the six (6) data centre buildings would be four (4) storeys in height with a maximum overall height of RL 84.100AHD (generally 34.5m above Ground Floor Level of each building) and will contain 12 data halls, 12 battery rooms, 40 generators (20 double stacked), loading docks, ancillary office space and associated mechanical, electrical and water infrastructure (refer to Figure 25 – Figure 30).

In addition, the SSDA seeks approval for associated water and power infrastructure, mechanical plant and equipment, internal roads and car parking, and site landscaping. Furthermore, an area of approximately 2.25ha on the southern and eastern portion of the site will be retained as a vegetation buffer.

The project construction will be delivered through multiple stages, and be sequenced to follow the fall of the natural ground slope - from highest to lowest.

- The intended first site development delivery stage is the 5MW Data Centre building, referred to as the MP1 Development - Stage 1 (MP1.S1) and is subject to development approval via DA to Blacktown Council outside this SSDA scope.
- The second site development delivery stage will be the 79MW Data Centre building, referred to as MP1 Development - Stage 2 (MP1.S2), and the 84MW Data Centre building to the north, referred to as MP4.
- The third development stage is intended to be the construction of MP5 and MP2 Data Centre buildings.
- Stage 4 will be the final stage of site development and is intended to be the construction of MP6 and MP3 Data Centre buildings.

Each stage of works will include the roads and inground infrastructure, with exception to the stormwater and inground services that are required to be installed for Day 1 operation of MP1.S1.

Following this, subsequent phases of fit out of the data halls within each building will likely occur sequentially in response to customer demand and will be subject to separate complying development approvals.

Once operational, the proposed development would operate on a 24-hour, seven (7) day a week basis. However, it is noted that after hours staff would primarily comprise maintenance staff who ensure the smooth operation of the facility outside of regular work hours as well as security personnel.

A detailed overview of the proposed development is provided further in Table 6 overleaf.

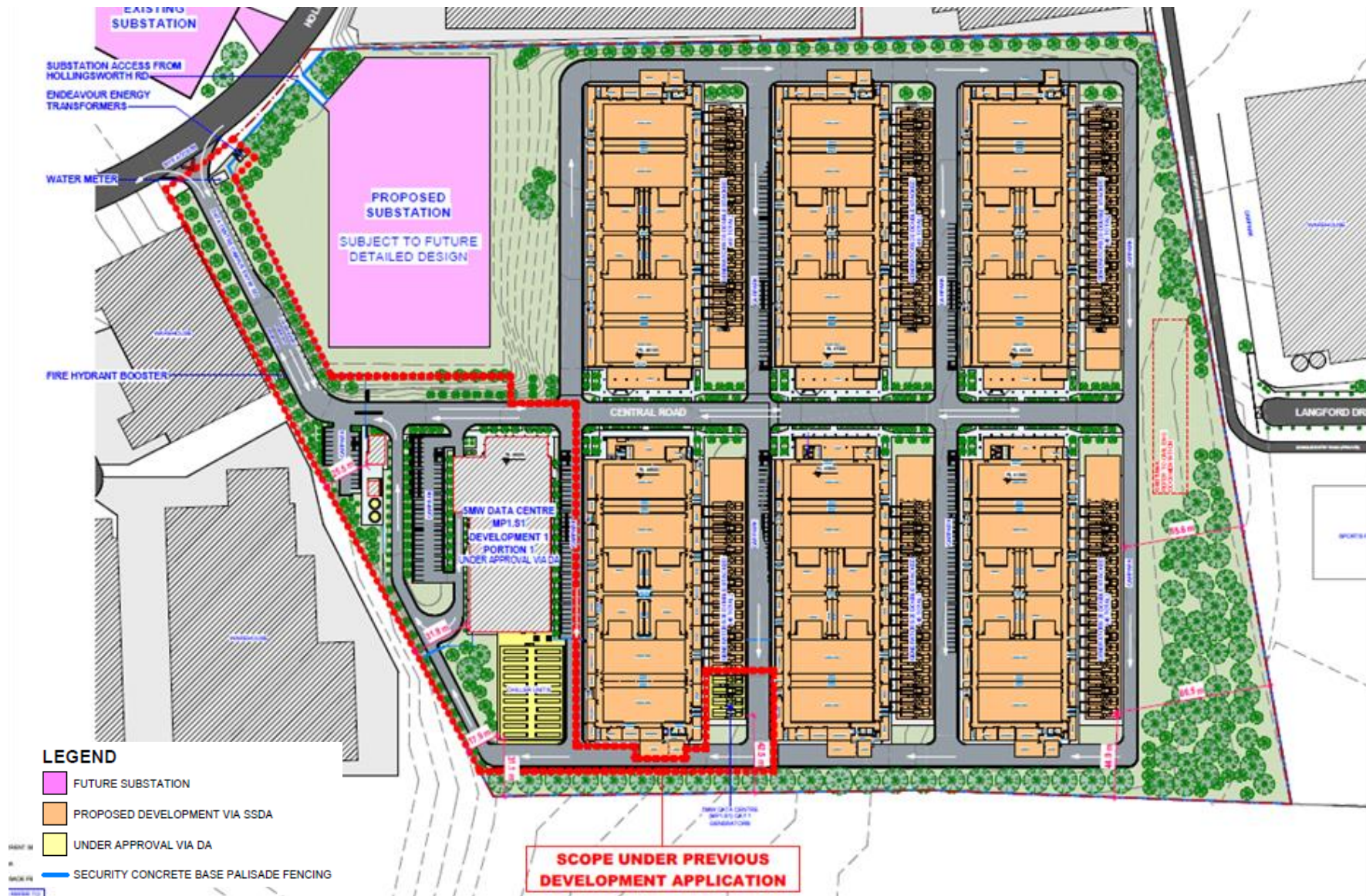


Figure 14: Extract of Campus Site Plan
Source: EJE Architecture

Table 6. Project Overview	
Item	Description
Proposed Use	504MW (IT Load) data centre campus and ancillary office areas operating 24 hours, 7 days per week.
Built Form	Six (6) x four (4) storey data centre buildings including associated mechanical, electrical and water infrastructure, along with 120 double stacked generator pairs (240 generators total) required in order to ensure the proper and safe functioning of the facility.
Gross Floor Area	279,650sqm
Maximum height	RL 84.100AHD (generally 34.5m above Ground Floor Level of each building)
Proposed Development	Data centre facility with ancillary office, associated plant, equipment and power infrastructure required for the proper functioning of the facility.
Estimated Development Cost	\$3,113,226,273 excluding GST.
Operations	Total power consumption capacity up to 504MW with operation to take place 24 hours a day, 7 days a week.
Fuel Storage	Capacity for up to 9,150 Kilolitres (kL) of diesel fuel storage within self-bunded double skin 'belly tanks' and day tanks proposed across the site. Total diesel intended to be stored on site for generators is 9,150 kL (does not include minor diesel fuel storage that may be stored on site for operation of other equipment such as fire pumps.)
Lithium-ion batteries	1,649,340kg of Lithium-ion batteries are proposed across the site. The total on-site general electricity generation rate across the site via Lithium-ion Batteries is forecast to be 1,081.92MW.
Tree Removal and site clearing	Five (5) trees are required to be removed to provide required Asset Protection Zones.
Bulk Earthworks and retaining walls	Limited earthworks required as the site is subject to a separate (approved) Early Works DA.
Vehicular access and internal roads	Vehicular access and the internal roads have been designed as part of a broader campus design and will comprise: • All access to the site will be via a left-in left-out driveway connection to Hollinsworth Road designed to cater for the largest vehicle accessing the site, being a 19m articulated vehicle. • All access to the site will be controlled by boom gate access at the entrance of the broader campus at the Hollinsworth Road entrance. • Construction of new internal circulation road network linking each of the proposed data centre building's parking and loading dock facilities to the main entrance off Hollinsworth Road. The new internal circulation road network has been designed to cater for the largest vehicle accessing the site, being a 19m articulated vehicle. The central spine will allow two-way traffic, however the remaining internal road network will be one-way with all traffic going in a forward moving direction clockwise around the site, entering from the main access point.
Car parking	The proposed development will be supported by 265 car parking spaces including 42 electric vehicle parking spaces, and 16 accessible parking spaces.
Bicycle parking	The proposed development will be supported by 36 bicycle parking bays.
Employment Generation	Up to 220 full-time equivalent (FTE) construction jobs, and 265 operational FTE employees.

Table 6. Project Overview	
Item	Description
Services and Infrastructure	The site is serviced with the necessary electrical, sewer, and telecommunications services.

3.1.1 Employment Generation

Construction Jobs

CDC's Construction Operations team has identified that the proposal would generate up to a peak maximum of 220 construction workers during the life of the project, with an average of 150 construction workers.

Operational Jobs

An estimate of operational employment numbers has been provided by the Proponent based on the operative requirements of the Data Centre. As outlined in Table 7 the proposal is expected to generate 265 FTE operational jobs.

Table 7. Forecast Operational Employment Generation Across Campus			
Category	5MW (inc. gatehouse)	84MW Typical	Total (all buildings)
Office Staff	12	20	132
Security Staff	3	5	33
Visitors	5	5	35
Contractor	5	10	65
Total	25	40	265

3.2 Detailed Description

3.2.1 Project Area

The proposal is located on land known as 105 & 115 Hollinsworth Road, Marsden Park, legally referred to as Lots 10 and 11 of Deposited Plan 1262052. The site is located on a land parcel approximately 20.91ha in size and has a primary frontage of 120m to Hollinsworth Road. As shown in Figure 14, the area of the site subject to the SSDA is 152,126sqm (15.21ha).

3.2.2 Use and Operation

The SSDA seeks approval for a 504MW data centre campus with six (6) individual data centres with ancillary office, associated plant, equipment and power infrastructure required for the proper functioning of the facility. The campus will operate 24 hours, 7 days a week.

3.2.3 Staging

As outlined Figure 15, the delivery of the data centre campus is anticipated to be completed in four stages, with three of these relating to the SSDA works specifically to be delivered over five years. Project construction will be sequenced to follow the fall of the natural ground slope - from highest to lowest (as per Figure 16 – Figure 19).

It is anticipated that construction will commence in 2025 and be staged as follows:

- 5MW DA:
 - Stage 1 – MP1.S1 subject to development approval via DA to Blacktown Council outside this SSDA scope.
- SSDA:
 - Stage 2 – MP1.S2 & MP4 (complete 1.5 yrs post approval);
 - Stage 3 – MP5 (first building of stage 2) then MP2 (complete 3 years post approval); and
 - Stage 4 – MP6 then MP3 last (complete 5 yrs post approval).

Each stage of works will include the roads and inground infrastructure, with exception to the stormwater and inground services that are required to be installed for Day 1 operation of MP1.S1.

Following this, subsequent phases of fit out of the data halls within each building will likely occur sequentially in response to customer demand and will be subject to separate complying development approvals.

To avoid certification issues at the construction stage, the proponent requests that Conditions of Consent relating to CC requirements are tailored to refer to the relevant construction stages of the proposed works. Alternatively, wording such as “*prior to the **relevant** construction certificate*”, may be preferred.

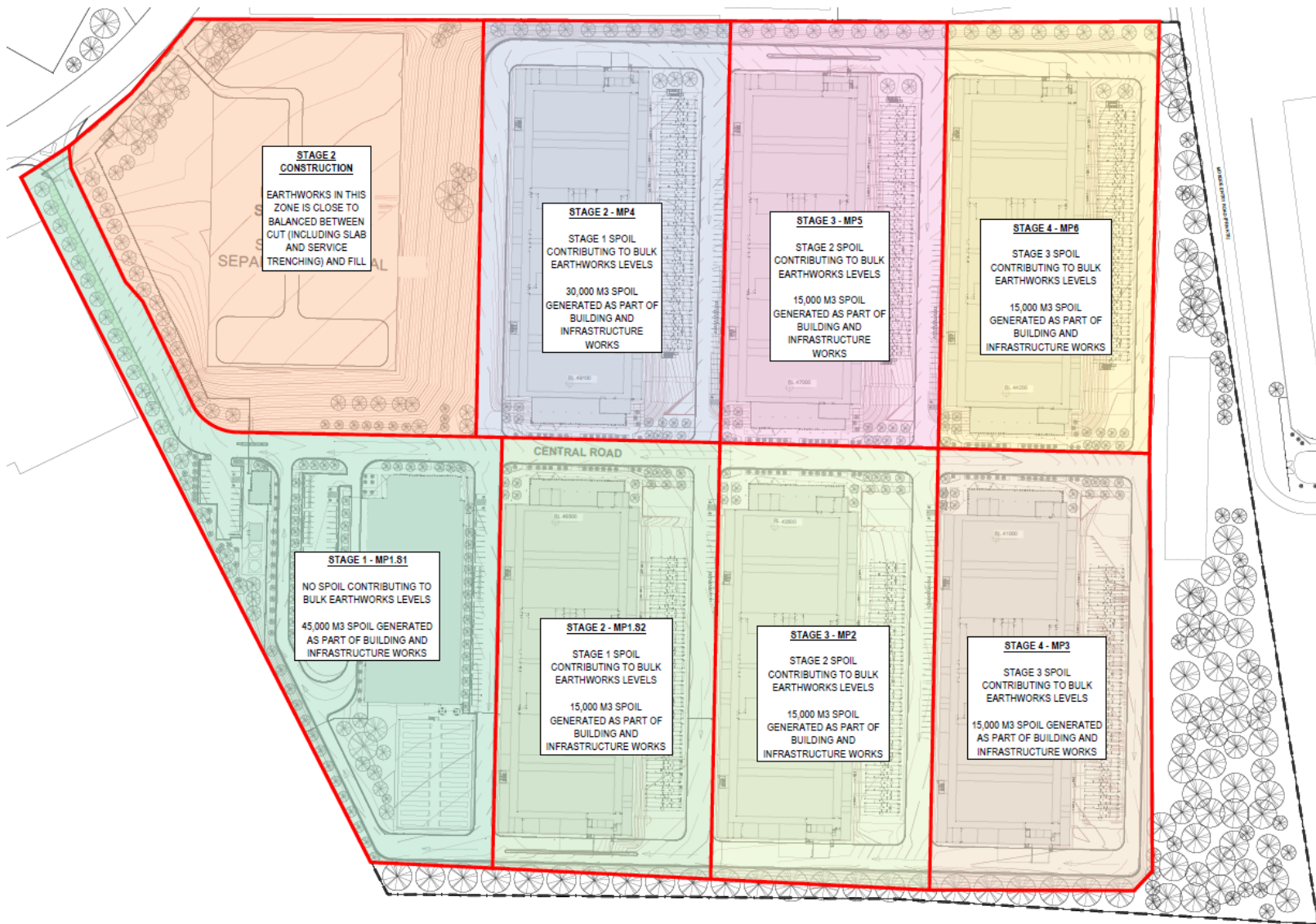


Figure 15: Proposed Staging Plan
Source: Stantec

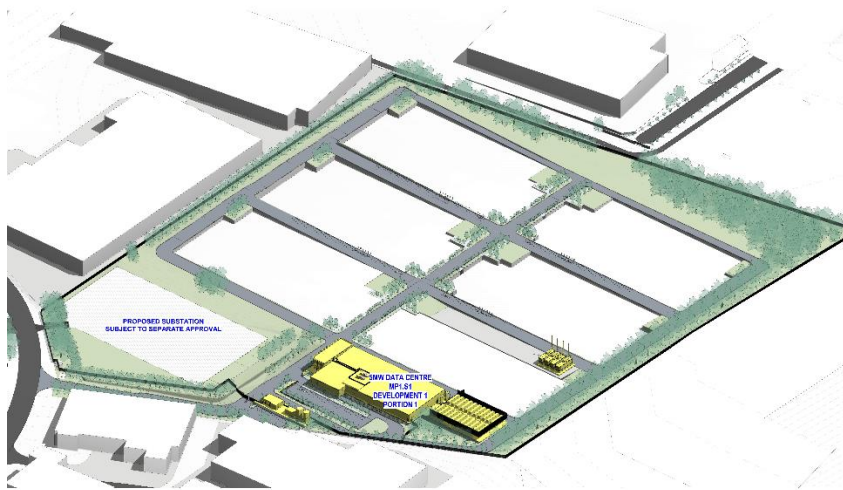


Figure 16: Masterplan Massing – Construction Phasing – Stage 1
Source: EJE Architecture

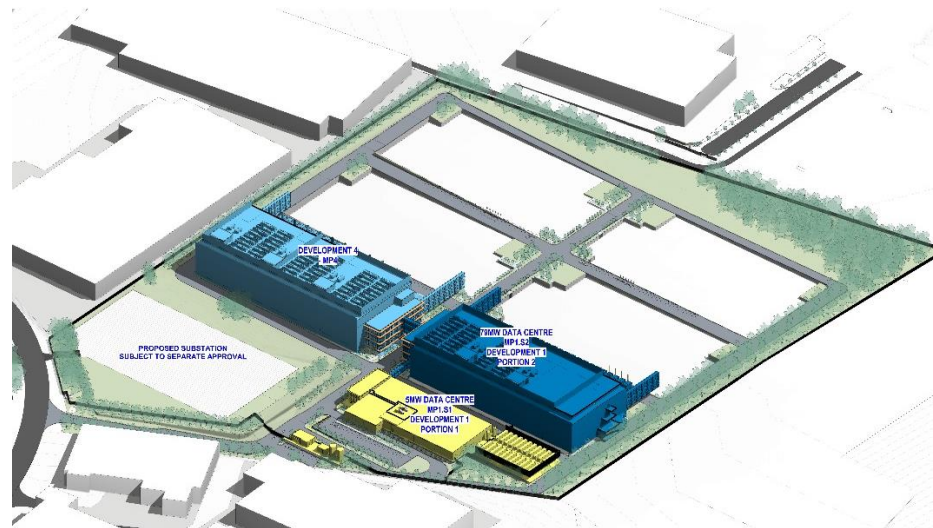


Figure 17: Masterplan Massing – Construction Phasing – Stage 2
Source: EJE Architecture

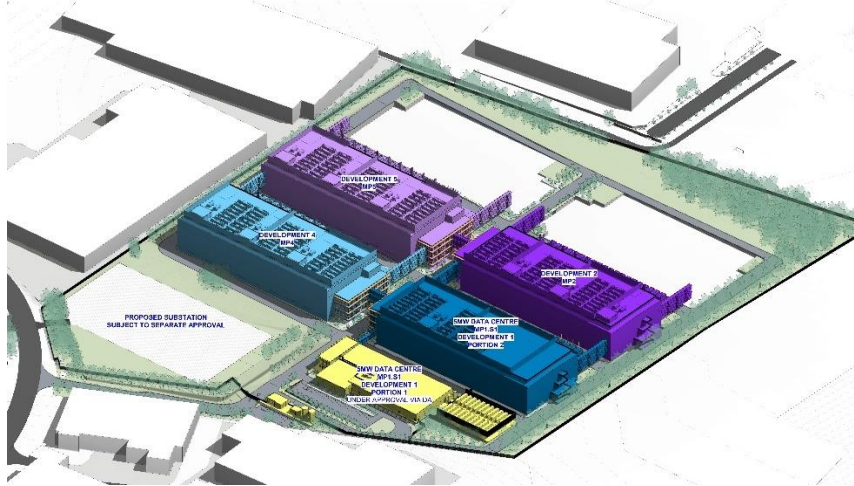


Figure 18: Masterplan Massing – Construction Phasing – Stage 3
Source: EJE Architecture

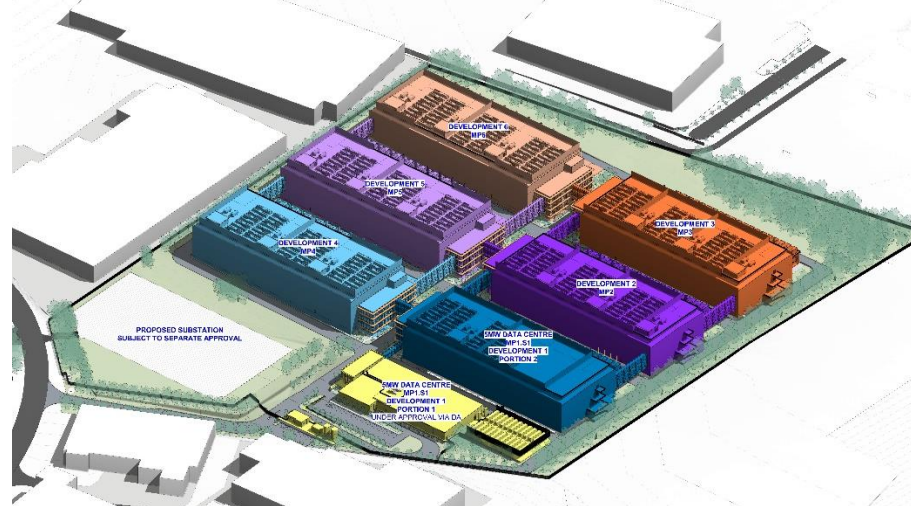


Figure 19: Masterplan Massing – Construction Phasing – Stage 4
Source: EJE Architecture

3.2.4 Physical Layout and Design of Campus

The proposal responds to the specific functions of a data centre, the requirements for plant and equipment storage, and the high level of security necessary at the facility. The proposed buildings are located centrally within the site and respond to the sites topography appropriately, with excessive excavation not proposed.

The site will be prepared for the project under a separate early works approval (PAN-426243) (**Appendix 37**) which has consent for tree removal, dewatering of dams, bulk earthworks and remediation works. As such, limited preparatory earthworks are required under the subject SSDA. Only five (5) additional trees are required to be removed to facilitate the proposal.

The six (6) proposed data centres will complement the currently proposed 5MW data centre building being assessed by Blacktown City Council under DA-24-00542 (**Appendix 38**). A detailed description of the physical layout and design of each data centre building is provided within Section 3.2.5 of this EIS.

The SSDA seeks consent for approximately 279,650sqm of GFA (includes approximately 13,630sqm of GFA for ancillary office space) across the six (6) buildings. A detailed breakdown of the GFA proposed across the campus is provided further in Section 3.2.6 of this EIS.

To function effectively, data centres typically require a large building bulk and mass, and numerous ancillary structures to accommodate technical and security requirements. In response to these requirements, careful attention has been given to the proposed design to ensure bulk and scale impacts are limited through the provision of generous setbacks, building articulation, and screening of plant and infrastructure from neighbouring properties (refer to Figure 20 - Figure 24).

Due to the nature of the proposal, it is necessary for the site to be secure. A 1.8m high fence is proposed around the perimeter of the site to ensure a high level of security for the campus.

All access to the site will be via a left-in left-out driveway connection to Hollinsworth Road designed to cater for the largest vehicle accessing the site, being a 19m articulated vehicle.

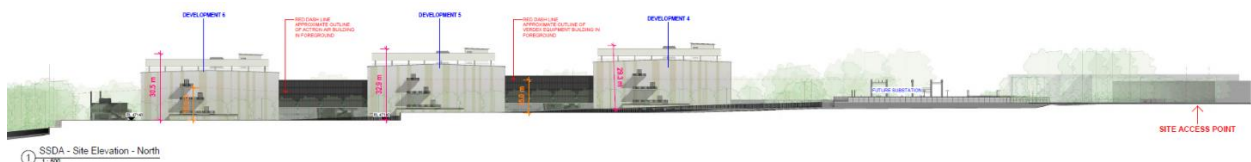


Figure 20: Site Elevation – North
Source: EJE Architecture



Figure 21: Site Elevation - North West, Hollinsworth Street Frontage
Source: EJE Architecture



Figure 22: Site Elevation – East
Source: EJE Architecture

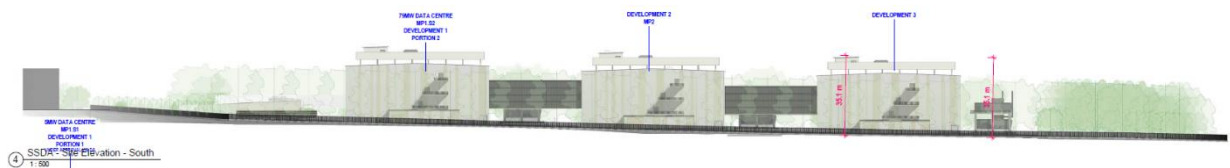


Figure 23: Site Elevation – South

Source: EJE Architecture



Figure 24: Site Elevation – West, Aligned to Boundary

Source: EJE Architecture

3.2.5 Physical Layout and Design of Each Data Centre Building

Each of the six (6) data centre buildings would be four (4) storeys in height with a maximum overall height of 34.5m and will contain 12 data halls, 12 battery rooms, 40 generators (20 double stacked), loading docks, ancillary office space and associated mechanical, electrical and water infrastructure. Each data centre building will contain:

- **Ground Floor:** Four (4) data halls (technical store), four (4) battery rooms (services), internal vertical and horizontal circulation areas, general services and storage areas. A loading dock area is proposed at the rear of the building, and administration and worker office areas are proposed at the front end of the data centre building facing the proposed primary central internal road, in a location referred to as 'front of house' (FOH) (refer to Figure 25).
- **Level 1:** Four (4) data halls (technical store), four (4) battery rooms (services), internal vertical and horizontal circulation areas, general services and storage areas. A loading area is proposed at the rear of the building, and administration and worker office areas are proposed in the FOH area facing the proposed primary central internal road (refer to Figure 26).
- **Level 2:** Four (4) data halls (technical store), four (4) battery rooms (services), internal vertical and horizontal circulation areas, general services and storage areas. A loading area is proposed at the rear of the building, and administration and worker office areas are proposed in the FOH area facing the proposed primary central internal road (refer to Figure 27).
- **Level 3:** Four (4) general storage, services, internal vertical and horizontal circulation areas. A loading area is at the rear of the building, and administration and worker office areas are proposed in the FOH area facing the proposed primary central internal road (refer to Figure 28).
- **Roof:** gently pitched roof made of colorbond (refer to Figure 29).
- **Chiller Deck:** Suspended over the roof and will contain mechanical plant and chillers to support each data centre building (refer to Figure 30).

In addition, each data centre will be supported by 20 double stacked generators (40 total) along the eastern edge of each building that will provide emergency power.

Each data centre will be linked in multiple locations to the other data centres by a series of elevated sky bridges at Level 1 and Level 2.

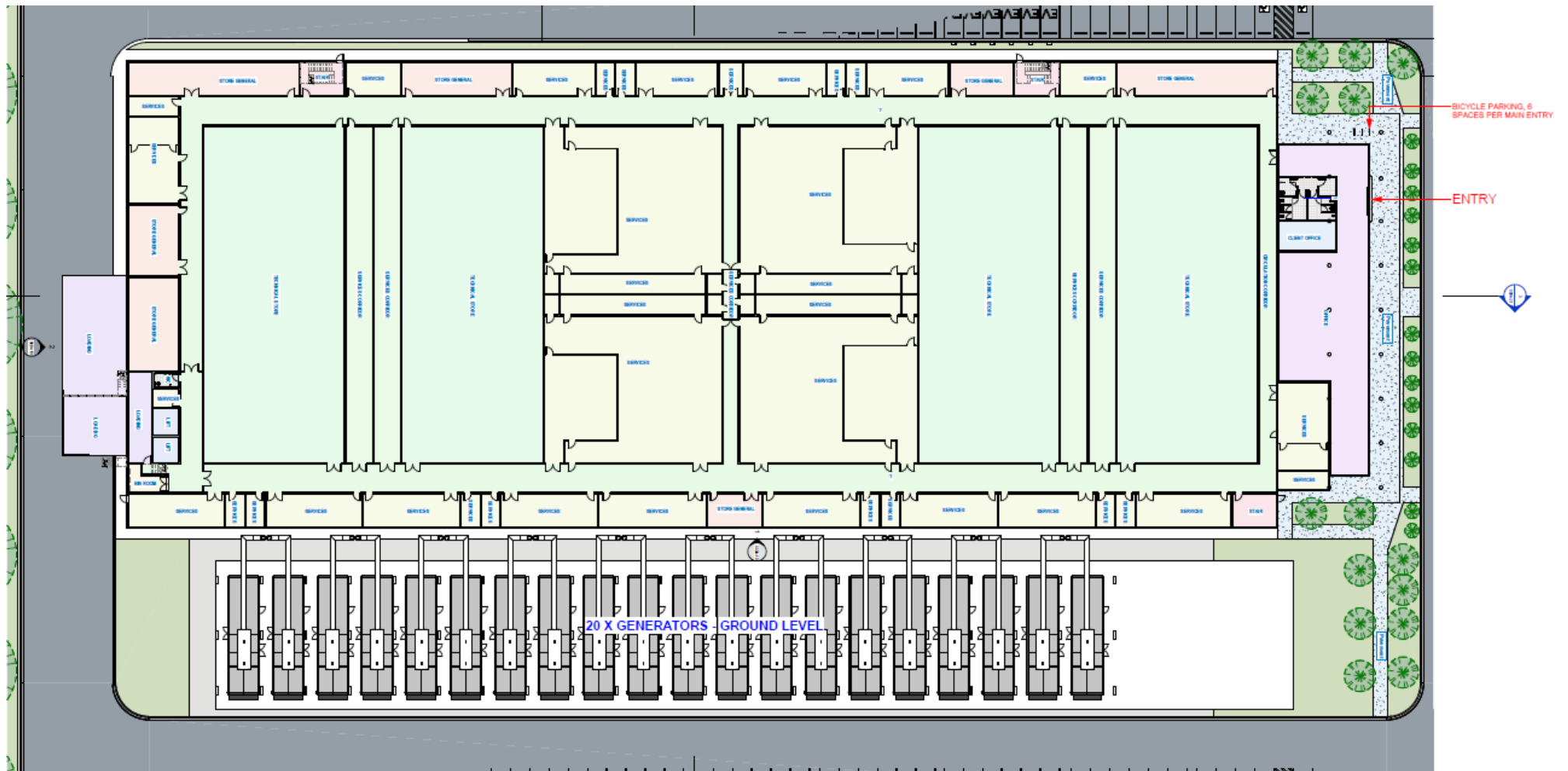


Figure 25: Typical 84MW Data Centre - Ground Floor Plan
Source: EJE Architecture

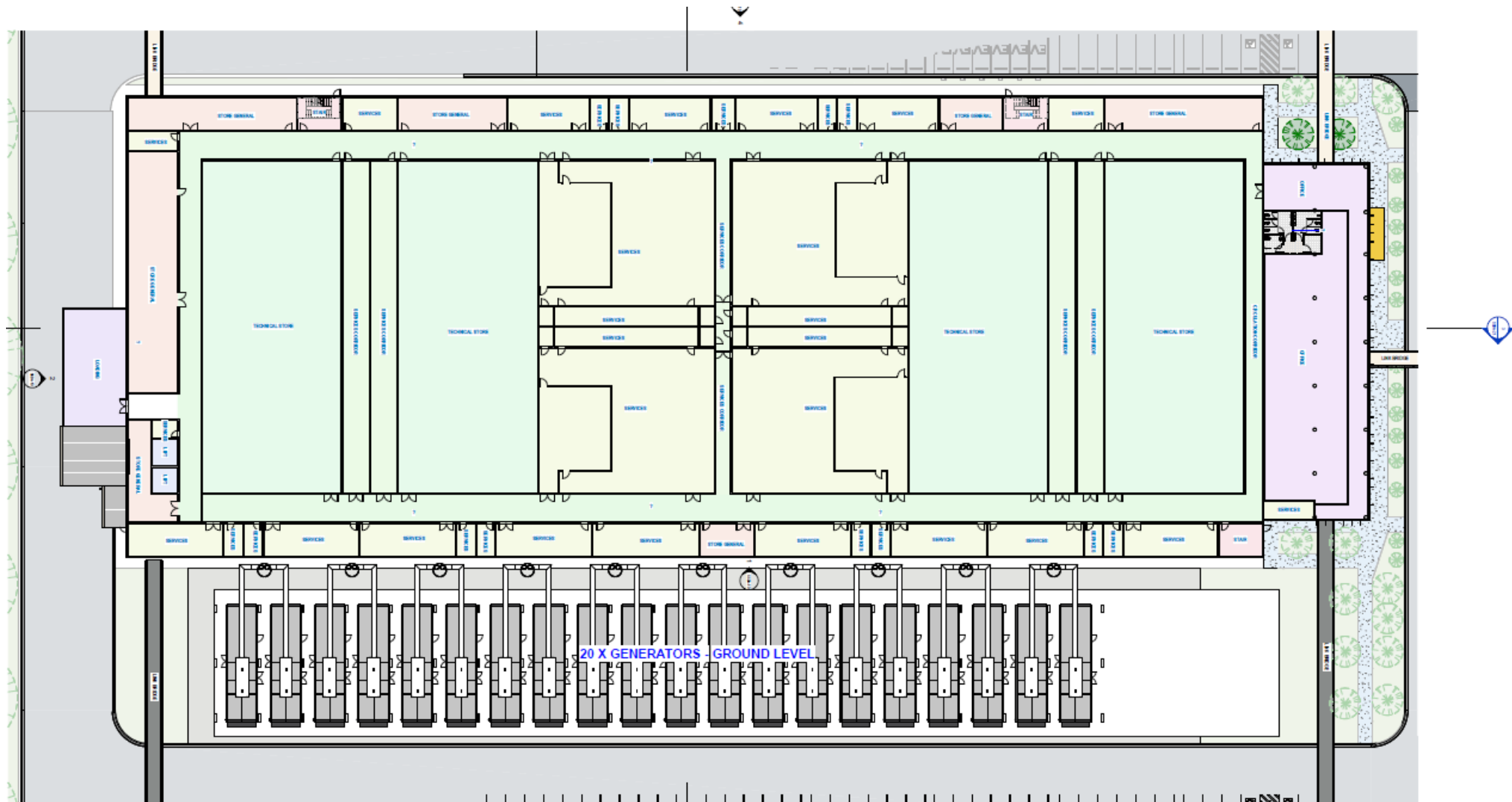


Figure 26: Typical 84MW Data Centre - Level 1 Floor Plan
Source: EJE Architecture

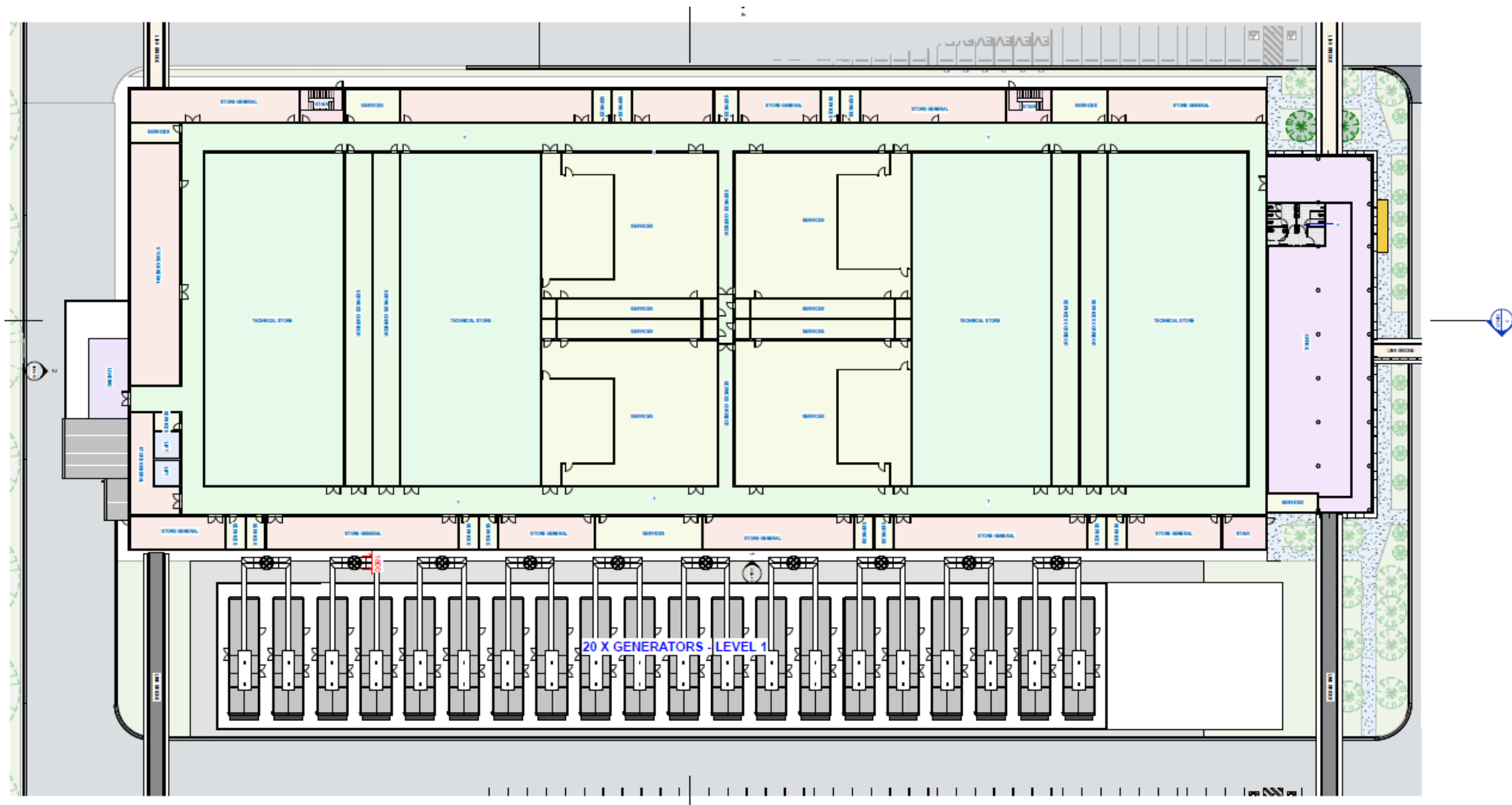


Figure 27: Typical 84MW Data Centre - Level 2 Floor Plan
Source: EJE Architecture

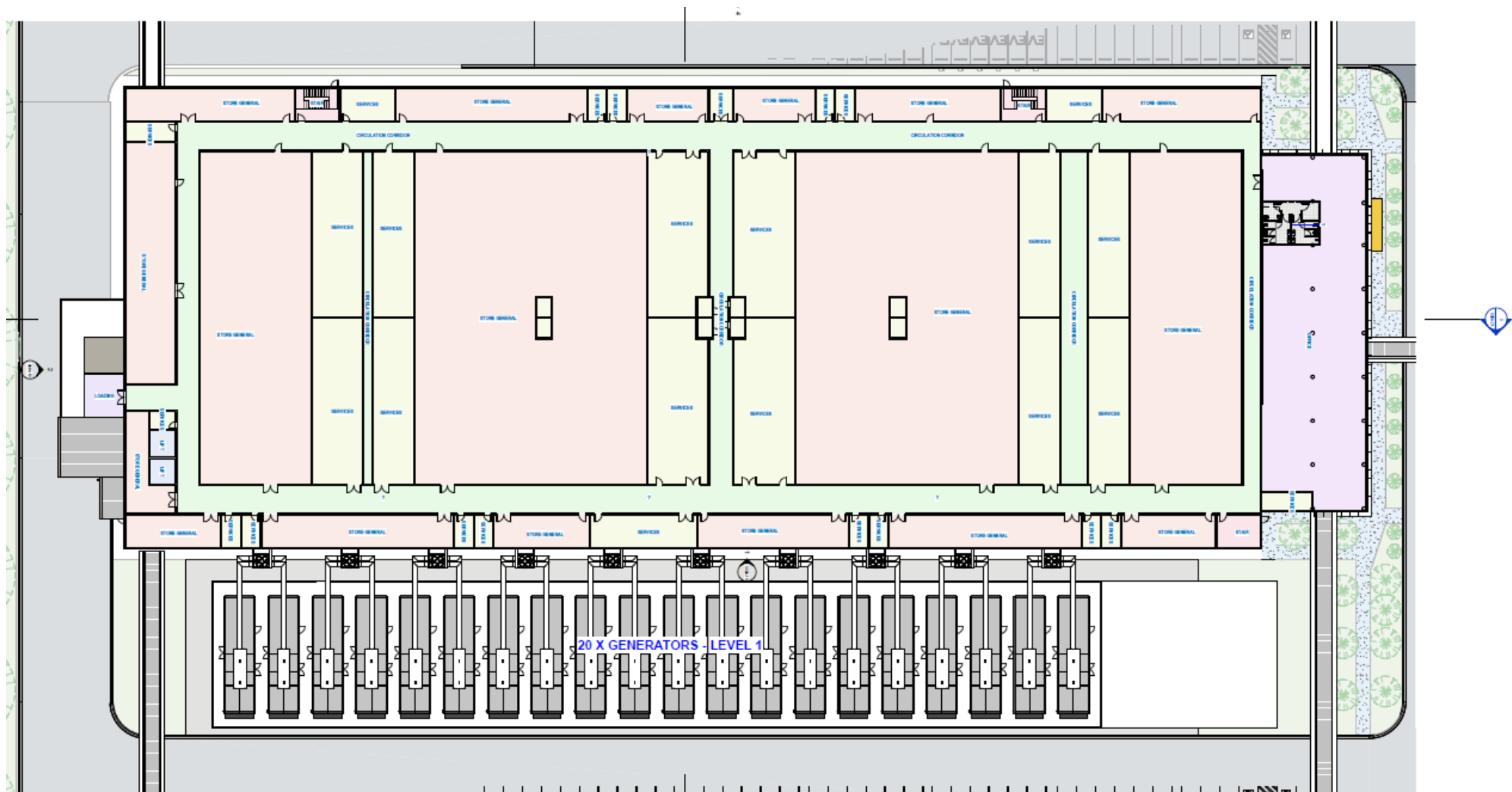


Figure 28: Typical 84MW Data Centre - Level 3 Floor Plan
Source: EJE Architecture

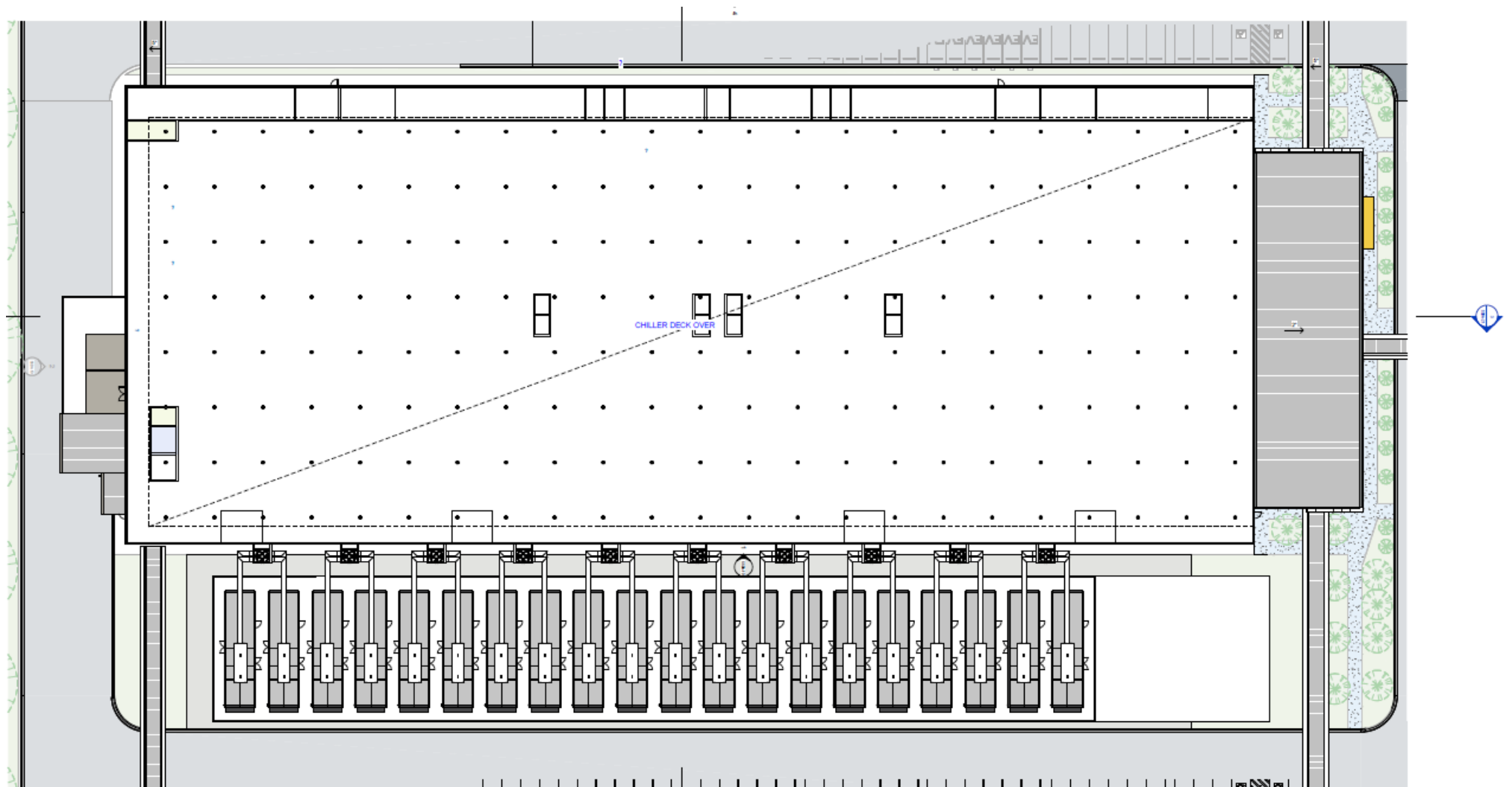


Figure 29: Typical 84MW Data Centre - Roof Plan
Source: EJE Architecture

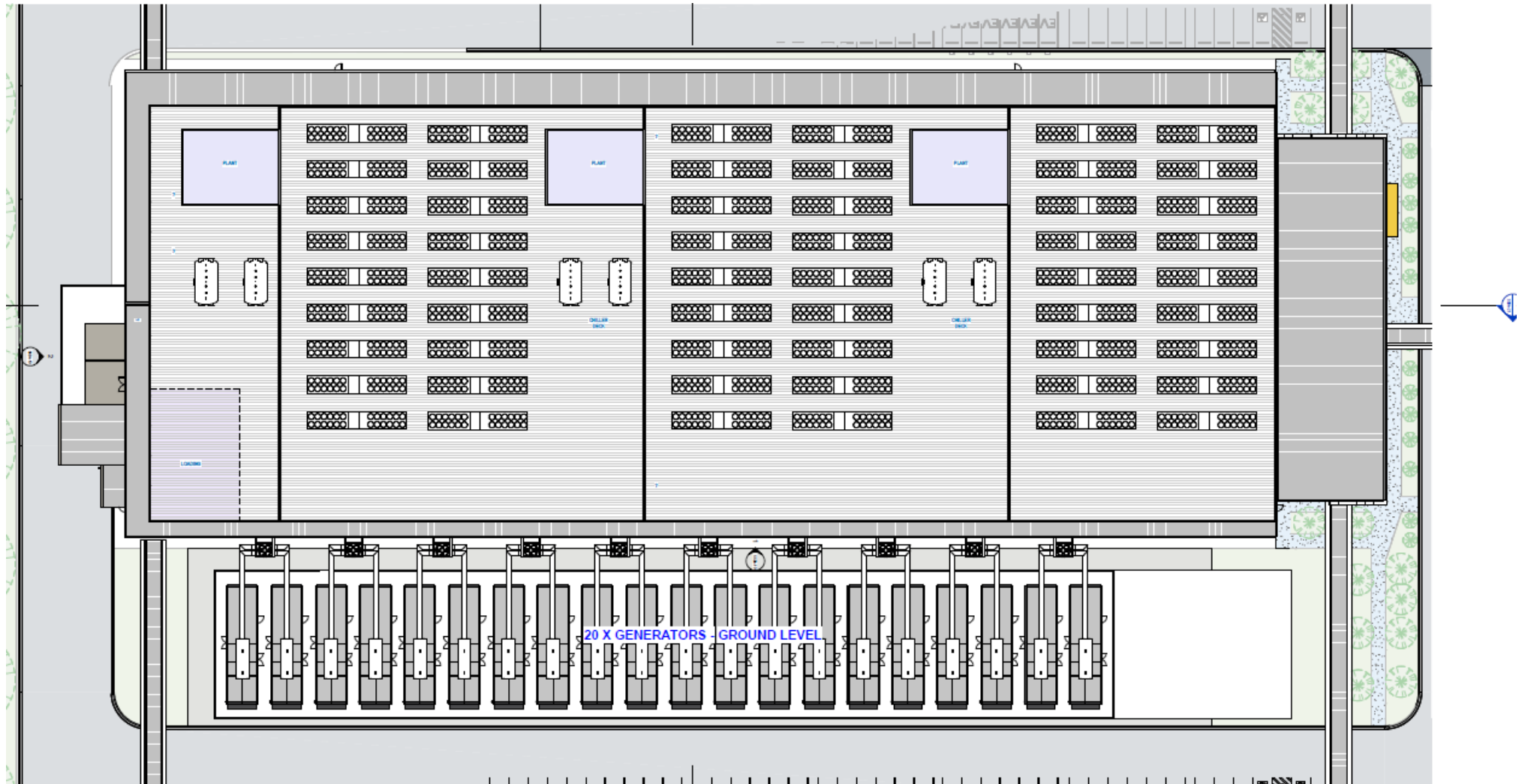


Figure 30: Typical 84MW Data Centre - Chiller Deck Level Floor Plan
Source: EJE Architecture

3.2.6 Gross Floor Area

The SSDA seeks consent for approximately 279,650sqm of GFA across the six (6) buildings that make up the SSDA component of the campus. A detailed breakdown of the GFA proposed across the campus is provided further in Table 8.

Table 8. Proposed Campus GFA breakdown										
SSD Data Centre	Proposed GFA (sqm)	Amenities	Client Office	FOH Office	Loading	Plant	Technical	Vertical Circulation	Link Bridge	Sub-Total
Development 1 (79MW)	170	30	2,262	370	8,482	35,159	64	619		47,156
Development 2 (84MW)	17	30	2,264	582	6,665	36,433	93	549		46,633
Development 3 (84MW)	17	30	2,264	582	6,665	36,433	93	104		46,188
Development 4 (84MW)	-	-	2,250	582	6,665	36,671	93	445		46,706
Development 5 (84MW)	-	-	2,250	582	6,665	36,671	93	445		46,706
Development 6 (84MW)	-	-	2,250	582	6,665	36,671	93	-		46,261
Sub-Total by Use	204	90	13,540	3,280	41,807	218,038	529	2,162		279,650
SSDA Total GFA										279,650
5MW										7409
Campus Total										287,059

3.2.7 Landscaping

As shown in Figure 31, landscaped areas associated with the proposal would include the following:

- Landscaping along the boundaries of the site. This is to include predominantly native species selected for the project's low maintenance and watering needs;
- Retention of existing vegetation along the southern and eastern boundaries of the site to provide a visual landscaped buffer to the development;
- Removal of 4 trees along the southern and eastern boundaries to meet APZ requirements;
- Mass planting throughout the site of appropriate shrubs and ground cover;
- Planting of approximately 95 additional trees across the site; and
- Construction of a 1.8m high security fence along the perimeter of the site.

The proposal will include new turf and mass and areas of retained vegetation landscaping works across approximately 28% of the total campus site area; and will have a tree canopy coverage rate of 10% at maturity.

The proposed works include the construction of a new internal circulation road network linking each of the proposed data centre building's parking and loading dock facilities to the main entrance off Hollinsworth Road, as shown in Figure 32.

The new internal circulation road network has been designed to cater for the largest vehicle accessing the site, being a 19m articulated vehicle. The central spine will allow two-way traffic, however the remaining internal road network will be one-way with all traffic going in a forward moving direction clockwise around the site, entering from the main access point.

The proposed development will be supported by 265 car parking spaces including 42 electric vehicle parking spaces, and 16 accessible parking spaces. The proposed development will be supported by 36 bicycle parking bays.

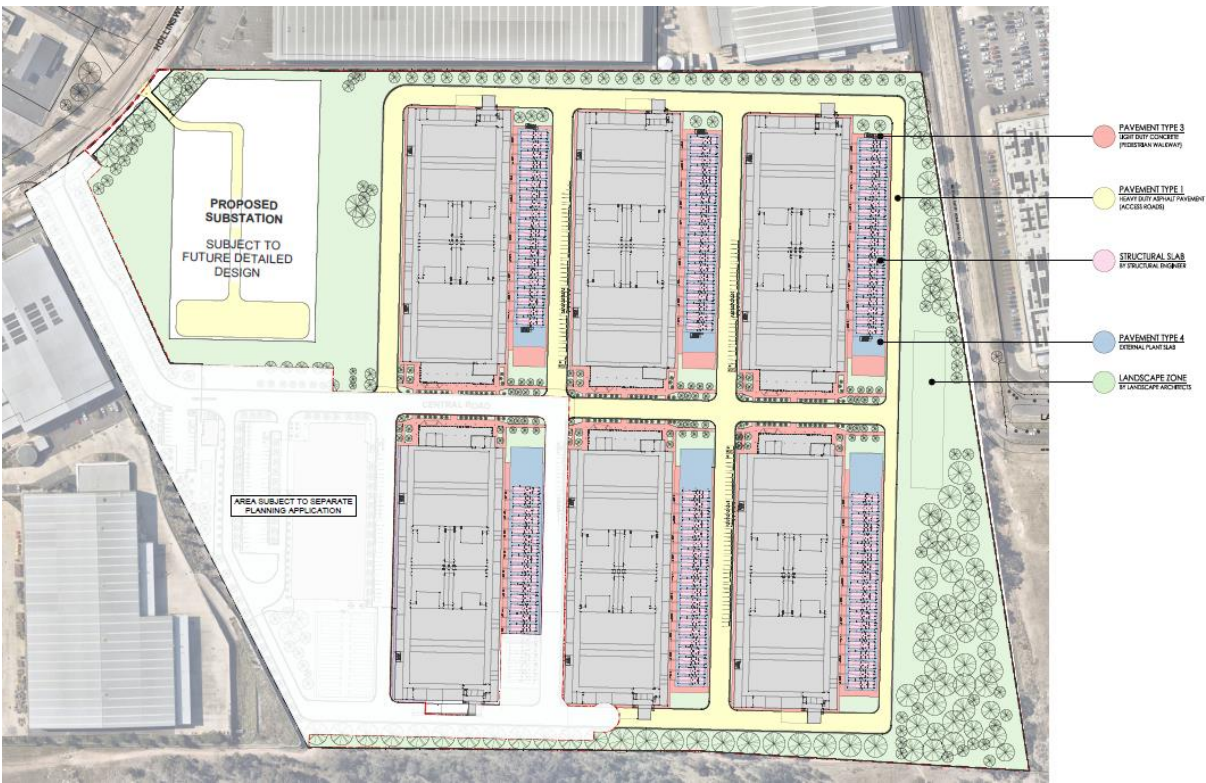


Figure 32: Proposed Internal Circulation Road Network
Source: Stantec

3.2.10 Construction Hours

Unless otherwise approved by DPHI, construction hours will generally be limited to those outlined in Table 9.

Table 9. Proposed Construction Working Hours		
Days	Start time	End time
Monday to Friday	7:00am	5:00pm
Saturday	8:00am	1:00pm
Sundays and Public Holidays	No work permitted	No work permitted

It is envisaged that construction of the proposal would commence as soon as practicable after the issuing of a consent.

3.2.11 Data Hall Cooling Systems

The proponent does not use evaporative cooling systems in any of their data centres. Each building contains closed loop chilled water systems through air cooled chillers, which pumps water to the terminal units at the data hall level. There are a total of 320 air cooled chillers in the development, which are located on the roof of the buildings. There are various secondary pumps that serve the system, and terminal units located in the data halls.

With the use of air-cooled chillers, the proponent is able to save significant quantities of water over the usable life of the data centre. Through the use of closed-circuit systems, the proponent is able to use negligible quantities of water throughout the life of the data centre.

As discussed further in Section 6.15 of this EIS, the Proposal will explore all feasible opportunities to reduce climate change impacts from construction and operation activities, including designing for a target Power Usage Efficiency (PUE) of 1.3 (approximately equivalent to NABERS 5-star benchmark) and Water Usage Efficiency (WUE) of nearly 0 l/kWh that exceed both Australian and global best practice.

3.2.12 Electricity Supply and Back-Up Power Generation

POWER SUPPLY

Endeavour Energy are the Supply Authority for the area. Endeavour Energy's South Marsden Park Zone Substation located at Hollinsworth Road Marsden Park (Lot 100 DP 1188147) is located approximately 25.8m away from the site (as shown in Figure 33).

Initially and prior to the establishment of the proposed onsite 132/11kV Zone Substation, the site shall be supplied from South Marsden Park Zone Substation at 11kV [2 off feeders arranged in a N+1 formation and rated for 10MVA]. A Preliminary Enquiry for the 132kV supplies to the site has been lodged with the Supply Authorities and is currently in the process of being reviewed.

The calculated demand for the site is approx. 720MW, made up of six (6) similar buildings (circa 120MW each). A new zone substation will be established on the site. It is envisaged that the new zone substation will be serviced by new 132kV incomers, and will consist of:

- 132KV outdoor bus arrangements, including isolators, circuit breaker, voltage and current transformers;
- 132kV control room;
- 12 off 132/11kV transformer bays; and
- 12 off 11kV distribution rooms, complete with 11kV indoor switchgear.

Site electricity reticulation shall consist of inground 11kV networks from the onsite zone substation to each of the six (6) buildings. Reticulation shall largely follow the internal road network of the campus.

It is envisaged that the new zone substation will be serviced by a new 330/132kV substation off site. There will be two sets of transformation firstly 330/132kV off site and then 132/11kV on site. There will also be a cable pathway between the 330kV substation and the site zone substation area.

A Preliminary Enquiry for the transmission connection at 330kV has been submitted to TransGrid. Separate consent will be sought for offsite electricity works separate to the SSDA.

Site electricity reticulation shall consist of inground 11kV networks from the onsite zone substation to each of the six (6) buildings. Reticulation shall largely follow the internal road network of the campus.

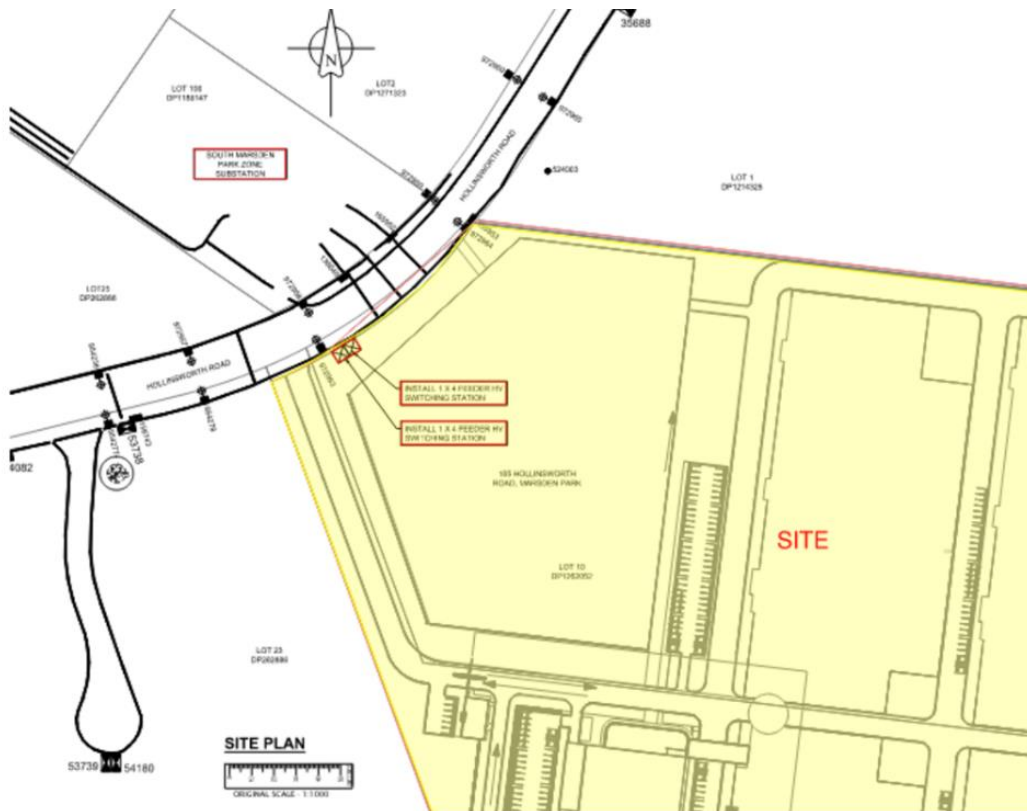


Figure 33: Initial 11kV supply from South Marsden Zone Substation
Source: Stantec, Infrastructure and Utilities Report

BACKUP POWER SYSTEMS

As discussed in Section 3.2.5 of the EIS, each data centre is equipped with 40 generators per building, providing emergency power in the unlikely event of a power interruption and complete mains failure. Lithium-ion UPS batteries will be installed in the data centre buildings to provide short term power to critical systems during an outage, while the generators start up.

In the event of a power outage, only 36 generators will commence operating, with four (4) generators acting as redundant engines in the unlikely event that four (4) of the primary engines fail. The back-up generators are housed in prefabricated acoustic enclosures and are double stacked on the eastern side of each data centre building. In the unlikely scenario of a power outage, the generators will automatically run to keep the data centre fully operational.

The initial design specified exhaust stack heights for the generators at heights of 15m and 17m, approximately half the height of the data centre building. Some of these exhaust stacks were positioned between two (2) data centres, leading to significant wake effects from the buildings, poor dilution of the exhaust gases, and potential for considerable impacts both offsite and within the surrounding area. By applying best practice design principles, the exhaust stacks from four (4) generators were consolidated into a single (1) flue stack. This consolidated flue stack is positioned at a height of 30m along the side of the data centre building, approximately 7m above the roofline. This increased height improves the dispersion of exhaust gases, allowing them to be released into the atmosphere at a height, where they can be more effectively dispersed by prevailing winds, thereby reducing the likelihood of pollutants accumulating near the ground or in the immediate vicinity of the data centre.

The Project will also be supported by its own substation with a capacity of 720MW that is proposed to be built and operated at the northwestern section of the site. The substation will function as the primary source of electricity for the data centres. Thus, the generators serve as a contingency plan and are designed to activate only in the event of a power interruption or outage from the primary power source. This ensures that even if there is a significant disruption in the main power supply, the data centres can still continue operating without interruption. Given the reliability and capacity of the substation, the likelihood of activating the generators is low, and thus the generators are anticipated to remain in standby mode and are expected to be used infrequently, if not, at all during a power outage.

A mains power failure is an infrequent event and likely short lived. During this event, the emergency back-up generators would be required to operate concurrently and has the greatest potential to adversely affect the surrounding environment, which has been considered in this assessment. The emergency back-up generators would not operate over an extended period (i.e., annual period) and therefore only the potential short-term impacts (i.e., 1-hour and 24-hour average) have been assessed.

The proposed data centre is a 'mission critical' facility which requires redundancy in its utility servicing, including back-up electrical generation. This backup power supply would enable continuous power to be provided and enable critical data services to continue to operate.

GENERATOR TESTING

Maintenance testing of emergency plant is anticipated to occur during the daytime period 9:00am to 4:00pm. By avoiding early morning and late evening hours, the potential for pollutants to accumulate near the ground is minimised (i.e. avoiding inversions and periods of poor dispersion), reducing the impact on nearby sensitive receptors and within the receiving environment.

The generator testing regime at the Project is as follows:

- **Annual testing** – 2 generators operating at a time on load for up to 1 hour each (cumulative 120 hours testing time); and,
- **Monthly testing** – up to 10 generators operating at a time at 25% load for up to 15 minutes (cumulative 72 hours testing time).

ALTERNATIVES CONSIDERED

Despite being heavy consumers of energy, data centres contribute substantially to energy savings in the economy. In addition, large-scale data centres can achieve higher efficiencies over smaller-scale ones.

Based on the large loads instituted in the data centre campus, it is not technically or commercially feasible [space wise or cost] to provide large scale Solar/BESS systems to provide backup power. The site requires sufficient standby power for 100% of site load for extended periods of time in the event of utility failure, where relying on a variable load from solar/BESS systems shall import a large risk on the critical infrastructure.

Hydrogen power for usage in large scale data centres is still in the nascent stages. There are small scale pilot projects reviewing feasibility of using hydrogen fuel cells for data centres, however are not advanced enough for large scale critical deployments.

Biodiesel has been considered during the design of the campus, although current and ongoing large-scale availability was not suitable for critical infrastructure.

The proponent has a large focus on building sustainably and operating sustainably. During development, CDC purchase and commission the highest efficiency equipment at the time of construction with a large focus on ensuring the actual PUE is as low as possible. During operation, CDC constantly upgrades the functional systems to ensure that the data centre complexes are running at the optimum efficiency.

4 Statutory Context

This chapter provides an assessment against the relevant Commonwealth, State and local legislation and applicable environmental planning instruments (EPI) which apply to the Proposal. These include the following:

Commonwealth Planning Context

- *Environment Protection and Biodiversity Conservation Act 1999*

State Planning Context

- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2021*
- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (Clean Air) Regulation 2022*
- *Biodiversity Conservation Act 2016*
- *National Parks and Wildlife Act 1974*
- *State Environmental Planning Policy (Precincts – Central River City) 2021*
- *State Environmental Planning Policy (Planning Systems) 2021*
- *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
- *State Environmental Planning Policy (Transport and Infrastructure) 2021*
- *State Environmental Planning Policy (Resilience and Hazards) 2021*
- *State Environmental Planning Policy (Sustainable Buildings) 2022*

Local Planning Context

- *Blacktown Local Environmental Plan 2015*
- *Blacktown City Council Growth Centre Precincts Development Control Plan 2010*

The above legislation and EPIs are addressed throughout this chapter of the EIS and in the statutory compliance table provided in Appendix 2.

4.1 Environment Protection and Biodiversity Conservation Act 1999

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999), any action (which includes a development, project or activity) that is considered likely to have a significant impact on Matters of National Environmental Significance (MNES) (including nationally threatened ecological communities and species and listed migratory species), must be referred to the Commonwealth Minister for the Environment. The purpose of the referral is to allow a decision to be made about whether an action requires approval on a Commonwealth level. If an action is considered likely to have significant impact on MNES, it is declared a “Controlled Action” for which formal Commonwealth approval is required.

The Proposal is not likely to impact a MNES. Therefore, the Proposal is not required to be referred to the Federal Department of the Environment to determine if it constitutes a controlled action and the bilateral agreement applies.

4.2 Environmental Planning and Assessment Act 1979

4.2.1 Objects of the Act

The proposal is consistent with the objects of the EP&A Act 1979 as addressed in Table 10.

Table 10. Objects of the EP&A Act 1979

Object	Description
(a)	<i>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,</i> <u>Response</u> The Proposal promotes the social and economic welfare of the community through the generation of direct employment, including 220 construction jobs and 265 FTE jobs once operational. In addition, the Proposal will promote social and economic welfare of the community indirectly through the provision of infrastructure critical to the proper functioning of the contemporary economy. With the rise of the digital economy, businesses and organisations are generating and processing vast amounts of data. This data needs to be stored, processed, and analysed in real-time, which requires significant computing power and storage capacity, which would be provided by the facility.
(b)	<i>to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,</i> <u>Response</u> The Proposal provides for a balanced outcome which appropriately manages economic, environmental, and social considerations and would result in an ecologically sustainable development outcome being achieved at the site.
(c)	<i>to promote the orderly and economic use and development of land,</i> <u>Response</u> The Proposal would result in the utilisation of land for its intended purposes reflective of the land use zoning provisions which apply to the land as expanded upon within Appendix 2 of the EIS.
(d)	<i>to promote the delivery and maintenance of affordable housing,</i> <u>Response</u> Not applicable. The site is zoned IN2 Light Industrial, which does not permit affordable housing.
(e)	<i>to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,</i> <u>Response</u> The proposed development is on a largely cleared site that is devoid of vegetation. The Proposal will have no impact on any threatened and other species of native animals and plants, ecological communities, and their habitats.
(f)	<i>to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),</i> <u>Response</u> The proposed development will have no impact on any heritage items and is unlikely to have any adverse impacts on Aboriginal cultural heritage. This can be further ensured through the imposition of appropriate conditions of consent.
(g)	<i>to promote good design and amenity of the built environment,</i> <u>Response</u> The site's overall layout and built form were developed in response to an urban design study of the site's context, an in-depth site analysis, and were informed by an understanding of the desired future character for the Marsden Park Industrial Precinct and its realisation as an employment precinct.
(h)	<i>to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,</i>

Table 10. Objects of the EP&A Act 1979

Object	Description
	<u>Response</u> The Proposal has been designed in accordance with relevant standards and requirements and will ensure the protection of the health and safety of occupants.
(i)	<i>to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,</i> <u>Response</u> The Proposal will be assessed and determined by State government, informed by consultation with Blacktown City Council and other government agencies.
(j)	<i>to provide increased opportunity for community participation in environmental planning and assessment.</i> <u>Response</u> Ongoing community engagement has been undertaken in relation to the Proposal as detailed in Section 5 of the EIS. Further, the community will be provided with additional opportunity to review and comment on the Proposal through the public exhibition process.

4.3 Environmental Planning & Assessment Regulation 2021

The EP&A Regulation 2021 is relevant in the assessment of this SSDA in that:

- It outlines the form of all development applications in s. 24;
- It provides the form of an Environmental Impact Statements in s. 190; and
- It classifies what development is designated development under Sch.3.

This EIS has been prepared in accordance with the EP&A Regulation 2021 as relevant, with all necessary requirements being provided as required under s. 24 and s. 190.

4.3.1 Designated Development

The development is a type of development which would be considered designated development under Schedule 3 of the EP&A Regulation 2021, but for s. 4.10 cl. (2) of the EP&A Act 1979; which stipulates that:

(2) Designated development does not include State significant development despite any such declaration.

As such, the proposed development is not designated development.

4.4 Protection of the Environment Operations Act 1997

Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act 1997) lists 'scheduled activities' for which an environment protection license (EPL) is required. Relevant triggers are considered below.

4.4.1 Chemical Storage

Section 9 of Sch. 1 of the POEO Act 1997 identifies *chemical storage* as a scheduled activity, being:

(1) This clause applies to the following activities—

general chemicals storage, meaning the storage or packaging in containers, bulk storage facilities or stockpiles of any chemical substance classified as a dangerous good in the Transport of Dangerous Goods Code, other than the following—

(a) petroleum or petroleum products,

(b) radioactive substances within the meaning of the Radiation Control Act 1990. ...

petroleum products storage, meaning the storage or packaging of petroleum or petroleum products in containers, bulk storage facilities or stockpiles.

Pursuant to cl. 2 s. 9 of Sch. 1 of the POEO Act 1997, certain activities are declared to be a scheduled activity if they meet the criteria set out in Column 2 of Table 11.

Table 11. Criteria for Chemical Storage under Sch. 1 of the POEO Act 1997	
Activity	Criteria
General chemicals storage	Capacity to store more than: • 20t (pressurised gases) • 200t (liquefied gases) or • 2,000t (chemicals in any other form)
Petroleum products storage	Capacity to store more than: • 200t (liquefied gases) or • 2,000t (chemicals in any other form)

General chemicals storage

Table 12 outlines the total on-site general chemical storage proposed across the site, as per the information provided within the Preliminary Hazards and Risks Memorandum prepared by Vector Alliance Pty Ltd, and provided as **Appendix 24** to this EIS.

Table 12. Total On-Site General Chemical Storage			
General Chemicals Storage (only Class 9 (Lithium-ion batteries))		Quantity	
		Kilograms (kg)	Tonnes (t)
6 x 4 storey buildings subject to SSDA	Battery Rooms	1,029,996kg	1,030t
	Data Halls	10,660kg	10.7t
	SSDA Subtotal	1,040,656kg	1,040.7t
5MW data centre (subject to separate approval)	Battery Rooms	16,830kg	16.8t
	Data Halls	10,660kg	10.7t
	5MW DA Subtotal	27,490kg	27.5t
Total Class 9 (Lithium-ion batteries) across entire site		1,068,146kg	1,068.1t
Source: Table 1 Preliminary Hazards and Risks Memorandum, Vector Alliance Pty Ltd			

As demonstrated in Table 12, the combined general chemical storage quantity proposed across the site falls below the 2,000 tonnes of chemical storage requirement, thus an environmental protection license **is not required** for general chemical storage.

Petroleum products storage

Table 13 outlines the total petroleum product storage proposed across the site, as per the information provided within the Preliminary Hazards and Risks Memorandum prepared by Vector Alliance Pty Ltd, and provided as **Appendix 24** to this EIS.

Table 13. Total On-Site Petroleum Product Storage		
Petroleum Products Storage (Class C1 (Diesel)) contained within external back-up diesel generator areas	Quantity	
	Kilolitre (kL)	Tonnes (t)
6 x 4 storey buildings subject to SSDA	8,706.8kL	7,231.5t
5 MW data centre subject to separate approval	299.2kL	248.5t
Total Class C1 Combustible Liquid (Diesel) Across Entire Site	9,006kL	7,480t
<i>Source: Table 1 Preliminary Hazards and Risks Memorandum, Vector Alliance Pty Ltd</i>		

As demonstrated in Table 13, the combined diesel storage quantity proposed to serve the six (6) data centres that are the subject of this SSDA equates to 7,231.5 tonnes. This exceeds the 2,000 tonnes of chemical and petroleum product storage requirement, thus an EPL **is required** for petroleum products storage.

4.4.2 Electricity Generating Works

Section 17 of Sch. 1 of the POEO Act 1997 identifies which types of electricity generating works are scheduled activities.

Metropolitan Electricity Works (Internal Combustion Engines)

Clause 1, s. 17 of Sch. 1 lists metropolitan electricity works (internal combustion engines) as a scheduled activity, subject to meeting the criteria set out in cl. 2. For the purposes of the clause **metropolitan electricity works (internal combustion engines)**, meaning the generation of electricity by means of electricity plant—

(a) that is based on, or uses, an internal combustion engine, and

(b) that is situated in the metropolitan area or in the local government area of Port Stephens, Maitland, Cessnock, Singleton, Wollondilly or Kiama.

Pursuant to cl. 2 of s. 17 of the POEO Act 1997, metropolitan electricity works (internal combustion engines) with a capacity to burn more than 3 megajoules of fuel per second are declared to be a scheduled activity.

Clause 1A of s. 17 of the POEO Act 1997 provides the following exemption for emergency stand-by plant operating for less than 200 hours per year:

(1A) However, this clause does not apply to the generation of electricity by means of electricity plant that is emergency stand-by plant operating for less than 200 hours per year.

The proposed development seeks consent for 120 double stacked generator pairs (240 generators total) that will serve as emergency stand-by plant in the unlikely event of a power interruption and complete mains failure.

Periodic testing of back-up generators is proposed to take place across the year, which as outlined in Section 3.2.11 of this EIS is proposed to be in the order of 192 hours per year (as per the Air Quality Impact Assessment prepared by Todoroski Air Sciences provided as **Appendix 11** of this EIS). Outside of periodic testing, it is unlikely that emergency generators would be required to operate for more than 200 hours per annum in a power outage.

As such, the general electricity works associated with the testing and potential running of generators **does not** trigger the need for an EPL pursuant to the POEO Act 1997.

4.5 Protection of the Environment Operations (Clean Air) Regulation 2022

The *Protection of the Environment Operations (Clean Air) Regulation 2022* (Clean Air Regulation) is the core regulatory instrument for air quality issues in NSW. In relation to industry it:

- Sets maximum limits on emissions from activities and plant for a number of substances;
- Deals with the transport and storage of volatile organic liquids;
- Restricts the use of high sulphur liquid fuel; and
- Imposes operational requirements for certain afterburners, flares, vapour recovery units and other treatment plant.

Part 5 Division 6 s.73 of the Clean Air Regulation exempts emergency standby plant for generating electricity from the air impurities standard for nitrogen dioxide (NO₂) and nitric oxide (NO) if the plant is used for a total of not more than 200 hours per year.

As outlined in Section 3.2.11 of this EIS, periodic testing of back-up generators is proposed to take place in the order of 192 hours per year. As such the proposal is **exempt** from the concentration limits outlined in Clean Air Regulation 2022.

4.6 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act 2016) protects native vegetation, species of threatened flora and fauna, endangered populations and endangered ecological communities and their habitats in NSW. Under s. 7.9 of the BC Act 2016, a Biodiversity Development Assessment Report (BDAR) is required to be submitted for any SSD, unless a waiver is granted exempting the SSD from this requirement.

A BDAR Waiver Request has been prepared by Abel Ecology (**Appendix 14**) in accordance with the requirements of the BC Act 2016. The waiver request was submitted to DPHI on 16 October 2024 and is expected to be issued imminently. This is discussed in further detail in section 6.21 of this EIS.

4.7 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NP&W Act 1974) relates to the establishment, preservation and management of national parks, historic sites and certain other areas and the protection of certain fauna, native plants and Aboriginal objects.

As discussed in Section 6.18 of this EIS, a number of Aboriginal objects have previously been identified within the site. The Aboriginal objects were identified during previous assessment of the site and the archaeological test excavation and registered on AHIMS as two sites (#45-5-4619 and #45-5-5882).

The works that will disturb the Aboriginal objects are proposed under a separate planning pathway for an Early Works DA (PAN-426243) which was approved by Blacktown City Council on 11 September 2024. An Aboriginal Heritage Impact Permit (AHIP) application will be submitted for these areas in order to disturb these artefacts.

The works proposed within the SSDA are not expected to disturb any artefacts. It is noted that s. 4.41 cl. (1)(d) of the EP&A Act 1979 stipulates that:

(1) The following authorisations are not required for State significant development that is authorised by a development consent granted after the commencement of this Division (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply)— ...

(d) an Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974, ...

As such, **an AHIP is not required** for the proposed works subject to this SSDA.

4.8 Environmental Planning Instruments

4.8.1 SEPP (Precincts – Central River City) 2021

Marsden Park Industrial Precinct Plan of *State Environmental Planning Policy (Precincts—Central River City) 2021* (PCRC SEPP 2021) is the primary environmental planning instrument applicable to the site.

ZONING AND PERMISSIBILITY

As demonstrated in Figure 34, the site is zoned IN2 – Light Industrial which has the following objectives:

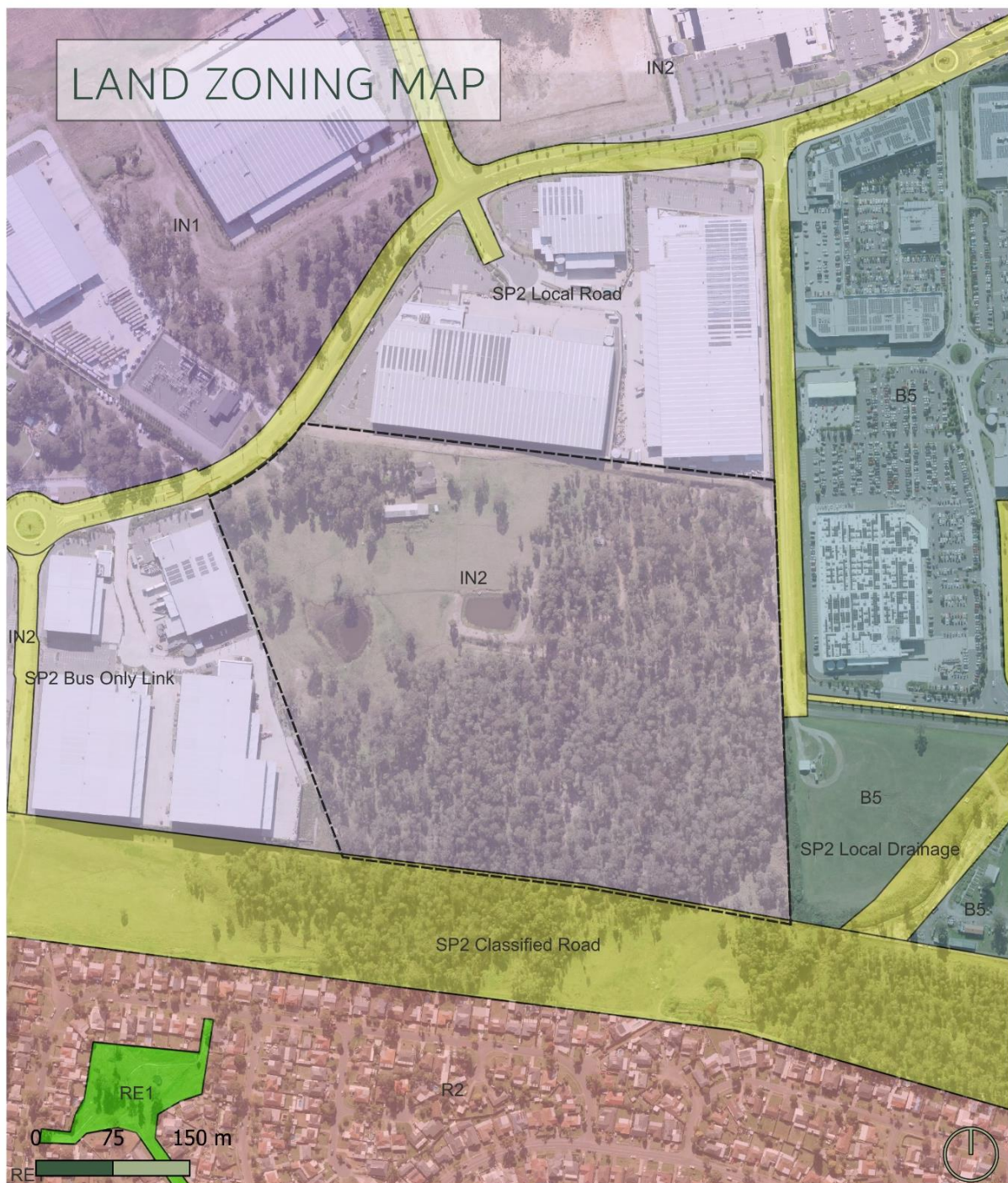
- *To provide a wide range of light industrial, warehouse and related land uses.*
- *To encourage employment opportunities and to support the viability of centres.*
- *To minimise any adverse effect of industry on other land uses.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.*

The proposal is consistent with these objectives as it will provide for an employment opportunity on suitable land that is appropriately separated from other land uses to minimise any adverse effects. The proposed development will help serve the state's demand for larger off-site data storage centres.

The proposed development is defined as a data centre; as per the Standard Instrument a data centre is defined as:

data centre means a building or place the principal purpose of which is to collect, distribute, process or store electronic data using information technology.

Data centres are a type of high technology industry, which are themselves a type of light industry. Light industry is permissible with consent in the IN2 Light Industrial zone. As such the proposed development is permissible with consent in the IN2 Light Industrial zone.



LEGEND

- IN2 - Light Industrial
- B5 - Business Development
- IN1 - General Industrial
- R2 - Low Density Residential
- SP2 - Infrastructure
- 105 & 113 Hollinsworth Road, Marsden Park

MARSDEN PARK DATA CENTRE
SSD-70889211



Figure 34: Zoning Map (PCRC SEPP 2022)
 Source: Patch Planning

PRINCIPAL DEVELOPMENT STANDARDS

The principal development standards applicable to the proposed development are addressed in Table 14 below.

Table 14. Summary of Principal Development Standards		
Clause	Development Standard	Response
4.3 Height of building	(1) The objectives of this section are as follows— (a) to establish the maximum height of buildings on land within the Marsden Park Industrial Precinct, (b) to provide for a range of building heights in appropriate locations that provide a high quality urban form, (c) to provide appropriate height controls for commercial, industrial and residential development, (d) to establish parameters for and promote a high quality built form, (e) to protect the amenity of adjoining development and land in terms of solar access to buildings and open space. (2) The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.	Complies. The site is not mapped as having a maximum height of building (HOB) control, as such the proposal must instead comply with the objectives of the control. The proposal will provide for a high quality urban form that will not impact on the amenity of adjoining development and land in terms of solar access to buildings and open space, as discussed in Section 6.1 of the EIS.
4.4 Floor space ratio	(1) The objective of this section is to control the bulk and scale of buildings within the Marsden Park Industrial Precinct by setting maximum floor space ratios for development within Zone R2 Low Density Residential, Zone R3 Medium Density Residential, Zone B5 Business Development, Zone B7 Business Park and Zone IN2 Light Industrial. (2) The maximum floor space ratio for a building on any land is not to exceed the floor space ratio shown for the land on the Floor Space Ratio Map.	Complies. The site is not mapped as having a maximum floor space ratio (FSR) control, as such the proposal must instead comply with the objectives of the control. The proposal will result in a development of appropriate bulk and scale consistent with the desired built form outcomes for the Marsden Park Industrial Precinct, as discussed in 6.1 of the EIS.
4.5B Floor space ratio for certain development	Despite section 4.4, the maximum floor space ratio for a building on land shown as "Area D" on the Floor Space Ratio Map is not to exceed 1:1 if the building is used for any of the following purposes— (a) educational establishments, (b) hardware and building supplies, (c) recreation facilities (major), (d) registered clubs, (e) service stations.	Not Applicable. The proposed development is not for any of the specified purposes identified in cl. 4.5B, as such no maximum FSR applies.

MISCELLANEOUS PROVISIONS

Miscellaneous provisions relevant to the proposed development are addressed in Table 15.

Table 15. Summary of Miscellaneous Provisions

Clause	Development Standard	Response
5.9 Preservation of trees or vegetation	(1) <i>The objective of this section is to preserve the amenity of the area through the preservation of trees and other vegetation.</i> (2) <i>This section applies to species or kinds of trees or other vegetation that are prescribed for the purposes of this section by a development control plan made by the Planning Secretary.</i> <i>Note— A development control plan may prescribe the trees or other vegetation to which this section applies by reference to species, size, location or other manner.</i> (3) <i>A person must not ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation to which any such development control plan applies without the authority conferred by—</i> <i>(a) development consent, or</i> <i>(b) a permit granted by the Council.</i>	Complies. Four (4) trees are required to be removed under the subject SSDA.

ADDITIONAL LOCAL PROVISIONS

Additional local provisions relevant to the proposed development are addressed in Table 16.

Table 16. Summary of Additional Local Provisions

Clause	Development Standard	Response
6.1 Public utility infrastructure	(1) <i>The consent authority must not grant development consent to development on land to which this Precinct Plan applies unless it is satisfied that any public utility infrastructure that is essential for the proposed development is available or that adequate arrangements have been made to make that infrastructure available when required.</i> (2) <i>In this section, public utility infrastructure includes infrastructure for any of the following—</i> <i>(a) the supply of water,</i> <i>(b) the supply of electricity,</i> <i>(c) the disposal and management of sewage.</i> (3) <i>This section does not apply to development for the purpose of providing, extending, augmenting, maintaining or repairing any public utility infrastructure referred to in this section.</i>	Complies. The subject site is currently serviced by water, telecommunications, electricity, and sewer. The services will be upgraded and connected as part of the detailed design, following issue of consent.
6.4 Development controls— native vegetation retention areas and riparian protection areas	(1) <i>The objective of this section is to prevent the clearing of certain native vegetation.</i> (2) <i>This section applies to land—</i> <i>(a) within a native vegetation retention area as shown on the Native Vegetation Protection Map, or</i> <i>(b) within a riparian protection area as shown on the Riparian Protection Area Map.</i>	Not Applicable. The land is not land mapped as being within a native vegetation retention area as shown on the Native Vegetation Protection Map, or within a riparian protection area as shown on the Riparian Protection Area Map.

Table 16. Summary of Additional Local Provisions		
Clause	Development Standard	Response
6.5 Development controls—existing native vegetation	(1) <i>The objective of this section is to manage existing native vegetation in accordance with the relevant biodiversity measures under Part 7 of Schedule 7 to the Threatened Species Conservation Act 1995.</i> (2) <i>This section applies to land within an existing native vegetation area as shown on the Native Vegetation Protection Map.</i>	Not Applicable. The land is not land mapped as being within an existing native vegetation area as shown on the Native Vegetation Protection Map.
6.6 Development of land within or adjacent to public transport corridor	(1) <i>Development consent must not be granted to development on land identified as “I” on the Land Zoning Map without the concurrence of Transport for NSW.</i>	Not Applicable. The land is not land identified as “I” on the Land Zoning Map, as such concurrence from TfNSW is not required.

4.8.2 SEPP (Planning Systems) 2021

State Environmental Planning Policy (Planning Systems) 2021 (PS SEPP 2021) identifies development which is SSD, State significant infrastructure (SSI), critical State significant infrastructure (CSSI), and regionally significant development (RSD).

Development types which are SSD are identified in Schedule 1 of the PS SEPP 2021, and include the following:

25 Data Storage

“(1) Development for the purpose of storage premises used for the storage of data and related information technology hardware that has a total power consumption of more than the relevant amount.

(2) In this section—

relevant amount means— ...

(b) for any other development—15 megawatts.”

The proposal is SSD as the total power consumption is 504MW (IT Load), which is more than the relevant amount of 15MW. Subsequently, the proposal is considered SSD.

4.8.3 SEPP (Transport and Infrastructure) 2021

DIVISION 3 DATA CENTRES

Notwithstanding the permissibility under the PCRC SEPP 2021 discussed in Section 4.8 of this EIS, the *State Environmental Planning Policy (Transport and Infrastructure)* (T&I SEPP 2021) also contains specific provisions under cl. 2.31 relating to the permissibility of data centres. The clause permits data centres in the IN2 Light Industrial zone, making the proposed development permissible with consent under the T&I SEPP 2021.

TRAFFIC GENERATING DEVELOPMENT

Clause 2.122 of the T&I SEPP 2021 requires development of a certain size or capacity to be referred to Transport for NSW (TfNSW) and for the consent authority to give consideration to any submission that are made, the accessibility of the site concerned, and any potential traffic safety, road congestion, or parking implications of the development.

The triggers for referral are contained within Schedule 3 of T&I SEPP 2021. Whilst data centres are not a standalone specified use, they are a type of 'industry.' The trigger for industry for sites adjoining any road is 20,000sqm in site area or (if the site area is less than the gross floor area) gross floor area. The projects site area is 152,126sqm which exceeds the threshold.

The trigger for car parks (whether or not ancillary to other development) adjoining any road is 200 or more car parking spaces. The proposal includes 265 car parks which exceeds the threshold.

As such, the proposal **is considered traffic generating development** and is required to be referred to TfNSW.

4.8.4 SEPP (Resilience and Hazards) 2021

CHAPTER 3 – HAZARDOUS AND OFFENSIVE DEVELOPMENT

State Environmental Planning Policy (Resilience and Hazards) 2021 (R&H SEPP 2021) provides criteria to confirm whether a development can be considered potentially hazardous or offensive, and outlines how to reduce these impacts.

A Preliminary Risk Screening Assessment has been undertaken by Vector Alliance Pty Ltd to determine the applicability of R&H SEPP 2021 and is provided as **Appendix 24** of the EIS, with a summary of the findings provided in Section 6.9.5 of this EIS.

The risk screening assessment confirms that there will be no dangerous goods on the site that are included in the threshold values contained within the R&H SEPP 2021 and the proposed development is therefore **not a potentially hazardous industry**. As such, no Preliminary Hazard Analysis is required to be conducted.

The Preliminary Risk Screening Assessment has been supplemented by a Hazards and Risk Requirements Memorandum prepared by Vector Alliance Pty Ltd (provided as **Appendix 24**) which reconfirms the previous findings that the proposed development is therefore **not a potentially hazardous industry**.

CHAPTER 4 – REMEDIATION OF LAND

Chapter 4 of R&H SEPP 2021 provides a state-wide approach to the remediation of contaminated land, in order to reduce the risk of harm to human health or the environment.

Clause 4.6 of the R&H SEPP 2021 requires that a consent authority not grant approval for the carrying out of development on land unless:

- a) *It has considered whether the land is contaminated;*
- b) *If the land is contaminated, it is satisfied that it is suitable for the proposed development; and*
- c) *If remediation is required to be made suitable for the proposed development, that the land will be remediated before the land is used for that purpose.*

Site wide remediation strategies are proposed as part of the approved Early Works DA, as detailed within the Remediation Action Plan prepared by Stantec (**Appendix 16**).

Taking into consideration the above, it is considered that clause 4.6 of R&H SEPP 2021 has been satisfactorily addressed and that DPHI can be satisfied that the land can be made suitable for the proposed development.

4.8.5 SEPP (Biodiversity and Conservation) 2021

CHAPTER 2 VEGETATION IN NON-RURAL AREAS

The primary aims and objectives of Chapter 2 relate to the protection of the biodiversity values of the trees and other vegetation on the site in non-rural areas. This chapter works together with the *Biodiversity Conservation Act 2016* and the *Local Land Services Amendment Act 2016* to create a framework for the regulation of clearing of native vegetation in NSW.

Chapter 2 regulates clearing that is not ancillary to development requiring consent. Whereas, clearing that is ancillary to development requiring consent will be assessed as part of the development assessment process. As such, this chapter is not applicable to the proposed development as the proposed removal of trees is ancillary to development requiring consent.

4.8.6 SEPP (Sustainable Buildings) 2022

State Environmental Planning Policy (Sustainable Buildings) 2022 (Sustainable Buildings SEPP) encourages the design and construction of more sustainable buildings across NSW.

CHAPTER 3 STANDARDS FOR NON-RESIDENTIAL DEVELOPMENT

Chapter 3 of the SB SEPP 2022 contains sustainability standards for non-residential buildings, and applies to the subject development as it is a non-residential development with a capital investment value of more than \$5 million.

An ESD Report has been prepared by Stantec in support of the SSDA and is provided as **Appendix 17** of the EIS. The ESD Report details further how compliance with Chapter 3 of the Sustainable Buildings SEPP is met.

General Sustainability Provision

All impacted non-residential development must report on the general sustainability measures outlined in chapter 3 s.3.2. This is to ensure that all development is considering sustainable performance through energy and water efficiency, waste reduction and energy storage and generation.

As outlined in the Planning Circular PS 23-001, *"It is not critical that all general provisions are incorporated into the development, however the applicant should show due consideration. In some cases, there may be sound reasons why some or all measures are not achieved."*

An assessment against chapter 3 s. 3.2 cl. (1) is provided in Table 17 below.

Table 17. Section 3.2(1) Assessment	
Objectives	Response
<i>(1) In deciding whether to grant development consent to non-residential development, the consent authority must consider whether the development is designed to enable the following—</i>	
<i>(a) the minimisation of waste from associated demolition and construction, including by the choice and reuse of building materials,</i>	The NSW <i>Waste and Sustainable Materials Strategy 2041</i> aims to continually improve the state's policies and targets for waste reduction and landfill diversion. To assist in achieving the strategy's targets, waste streams during demolition and construction have been considered and opportunities for minimising waste to landfill identified. A waste diversion target of 80.8% is proposed as discussed within the Waste Management Plan.
<i>(b) a reduction in peak demand for electricity, including through the use of energy efficient technology,</i>	100% of the development's energy demand is to be met using electricity. Doing so will ensure the development is future-proof as the electrical grid greens, embedding resilience. Using electricity over fossil-fuels for operations on site also increases overall efficiency of the development as wasted energy through the conversion of energy is minimized. This also aligns with the Government's goal of net zero emissions by 2050.

Table 17. Section 3.2(1) Assessment

Objectives	Response
	The detailed design of the data centre facility will target a Power Usage Effectiveness (PUE) of 1.3, which exceeds both Australian and global best practice. This PUE represents a 19% saving against the benchmark. The project is designed with ecologically sustainable design initiatives that shall minimise its consumption of resources, specifically in relation to (1)(b), energy. The following have been included to reduce energy use: • Passive Cooling and Heating Design; ◦ Continuous Roof and External Wall Insulation; ◦ Optimised Window to Wall Ratio; ◦ High-performance Glazing Systems; • Mechanical Services; ◦ Provision of High-efficiency Cooling Systems; ◦ Building Management Control System; ◦ Building-level Metering; ◦ Sub-metering; • Electrical Services; ◦ Energy-efficient IT Equipment; and ◦ LED Lighting.
<i>(c) a reduction in the reliance on artificial lighting and mechanical heating and cooling through passive design,</i>	As outlined above, the proposal reduces the reliance on artificial lighting and mechanical heating and cooling through passive design. Specifically, the following is proposed: • Continuous Roof and External Wall Insulation; • Optimised Window to Wall Ratio; and • High-performance Glazing Systems.
<i>(d) the generation and storage of renewable energy,</i>	Alternative energy including Lithium-ion battery storage technology with an approximate maximum continuous discharge power of 675.6MW has been included within the proposed development. The proposed development has been designed for energy efficiency and grid resilience.
<i>(e) the metering and monitoring of energy consumption,</i>	As outlined above, the proposal provides metering and monitoring of energy consumption. Specifically, the following is proposed: • Building Management Control System; • Building-level Metering; and • Sub-metering.
<i>(f) the minimisation of the consumption of potable water.</i>	The project is designed with ecologically sustainable design initiatives that shall minimise its consumption of resources, specifically in relation to (1)(f), water. A minimum of 50% recycled water will be incorporated into all concrete used in the project to mitigate water consumption during the construction phase. The detailed design of the data centre facility will target a Water Usage Effectiveness (WUE) of nearly 0 l/kWh, which exceeds both Australian and global best practice. This WUE is nearly an 100% water saving against the benchmark. This is achievable because the design of the mechanical system is 100% air cooled in order to minimise water usage. To achieve this target the facility will optimise water efficiency through several water conservation strategies. The following water-saving measures are being considered for the development: • Monitoring water withdrawal, consumption, and disposal across the building using multi-layered metering strategies;

Table 17. Section 3.2(1) Assessment

Objectives	Response
	• Deploying high-efficiency equipment that can achieve a balance between energy consumption and water consumption; • Developing an integrated water management plan; • Rainwater Capture and Reuse; and • Low-Irrigation Demand Plant Selection.

Based on the assessment above, the proposal is considered to meet the general sustainability measures outlined in s. 3.2(1).

Embodied Emissions Reporting

To ensure consistency in the measurement of embodied emissions, all impacted new non-residential developments are required to complete the National Australian Built Environment Rating System (NABERS) Embodied Emissions Material Form.

The NABERS Embodied Emissions Material Form has been provided as **Appendix 27** of the EIS, in accordance with s. 35BA of the EP&A Regulation 2021.

Other considerations for large commercial development

Section 3.3 of the SB SEPP 2022 provides other considerations for large commercial development. As the proposed development includes 15,161sqm of office space it is considered to be a prescribed office premises, and therefore a type of large commercial development.

Large commercial developments are required to comply with s 3.3 and Schedule 3 of the Sustainable Buildings SEPP. An assessment against the relevant clauses of 3.3 is provided in Table 18 below.

Table 18. 3.3 Assessment

Clause	Response
<i>(1) In deciding whether to grant development consent to large commercial development, the consent authority must consider whether the development minimises the use of on-site fossil fuels, as part of the goal of achieving net zero emissions in New South Wales by 2050.</i>	The Emissions Report (GHG Mitigation Plan and Climate Change Adaptation Plan Net Zero Statement (Appendix 18) summarises the proposed initiatives to reduce energy use, and notes that no fossil fuels are proposed for the development in regular operation. 100% of the development's energy demand is to be met using electricity. Doing so will ensure the development is future-proof as the electrical grid greens, embedding resilience. Using electricity over fossil-fuels for operations on site also increases overall efficiency of the development as wasted energy through the conversion of energy is minimized. This also aligns with the Government's goal of net zero emissions by 2050. The detailed design of the data centre facility will target a PUE of 1.3, which exceeds both Australian and global best practice. This PUE represents a 19% saving against the benchmark.
<i>(2) Development consent must not be granted to large commercial development unless the consent authority is satisfied the development is capable of achieving the standards for energy and water use specified in Schedule 3.</i>	As detailed within the ESD Report (Appendix 17) the office component of the proposed development is able to achieve a 5.5-star NABERS energy rating and 3-star NABERS water rating.

Table 18. 3.3 Assessment	
Clause	Response
<i>(3) For the purposes of subsection (2), development is capable of achieving a standard specified in Schedule 3 if there is a NABERS commitment agreement in place to achieve the standard.</i>	It is noted that a NABERS commitment has been sufficient for the lodgement of data centre developments previously, as it details the design commitments proposed at the lodgement stage of the project. As the assessment of the scheme progresses, design refinements may be made which would require an update to the NABERS commitments. Once the final approvable design is identified, it is the intention that a signed NABERS Commitment Agreement would be entered into at the appropriate time prior to approval.

An assessment against the applicable standards for energy and water use for large commercial development contained within Schedule 3 of the Sustainable Buildings SEPP is provided in Table 19 below.

Table 19. Standards for energy and water use for large commercial development	
Objectives	Response
1 Energy use	
<i>(1) The standard for energy use for development for the purposes of prescribed office premises is a 5.5 star NABERS energy rating.</i>	Able to comply. As detailed within the ESD Report (Appendix 17) the office component of the proposed development is able to achieve a 5.5-star NABERS energy rating.
<i>(4) To avoid doubt, different standards may apply to the same building if it is used for different purposes.</i>	Noted.
2 Water use	
<i>The standard for water use for large commercial development is a 3 star NABERS water rating.</i>	Able to comply. As detailed within the ESD Report (Appendix 17) the office component of the proposed development is able to achieve a 3-star NABERS water rating.

As demonstrated in the ESD Report prepared by Stantec in support of the SSDA provided as **Appendix 17** and the NABERS Embodied Emissions Material Form provided as **Appendix 27** of this EIS, the proposal is capable of achieving the standards for energy and water use specified in Schedule 3 of the SB SEPP 2022.

4.8.7 Blacktown Local Environmental Plan 2015

The *Blacktown Local Environmental Plan 2015* (BLEP 2015) does not have application to the subject site.

4.8.8 Blacktown City Council Growth Centre Precincts Development Control Plan 2010

While cl. 2.10 of PS SEPP 2021 expressly states that development control plans (DCP) do not apply to SSD, the *Blacktown City Council Growth Centre Precincts Development Control Plan 2010* (BDCP 2010) has nevertheless been considered in relation to siting and design of the proposal. The assessment undertaken against the BDCP 2010 is provided in **Appendix 39** of the EIS.

5 Community and Stakeholder Engagement

This chapter provides a summary of the engagement undertaken prior to the lodgement of the subject SSDA. Community and stakeholder engagement has been undertaken by the Project Team in the preparation of the SSDA. This included direct engagement and consultation with:

- Blacktown City Council
- Department of Climate Change, Energy, the Environment and Water, specifically the:
 - Biodiversity, Conservation and Science Group
 - Environment Protection Authority
- Transport for NSW
- Fire & Rescue NSW
- NSW Rural Fire Service
- Sydney Water
- Endeavour Energy
- Heritage NSW
- Registered Aboriginal Parties (RAPs), including Metropolitan Local Aboriginal Land Council
- Surrounding local landowners, businesses and stakeholders
- Local and regional community and environmental groups
- Any other public transport, utilities or community service providers.

This engagement was consistent with the community participation objectives in the *Undertaking Engagement Guide – Guidance for State Significant Projects* (DPIE, 2021) (Engagement Guide) and complied with the community and stakeholder engagement requirements in the SEARs.

In accordance with the Regulations, the EIS will be placed on formal public exhibition once DPIE has reviewed the EIS and deemed it 'adequate' for this purpose. Following this exhibition period, the applicant will respond to any matters raised by notified parties.

Further detail is provided in the following sections and within the accompanying Engagement Report prepared by Astrolabe Group (Astrolabe) in **Appendix 19** of the EIS.

5.1 Community Engagement Summary

Community engagement has been undertaken in line with the Engagement Guide to ensure that engagement activities undertaken are proportionate to the scale and impact of the project, and the likely interest the community may have in the project

The catchment for community engagement undertaken by Astrolabe encompassed an approximate 750m radius from the site. Approximately 950 properties surrounding the site were notified on 29 May 2024 with information about the proposed development. A summary of the community engagement activities undertaken to date is provided in Table 20. The distribution material provided is contained within Appendix A of the Engagement Report **Appendix 19** of the EIS.

To date only nine (9) responses to the online survey have been received (between 29 May – 1 July 2024) from members of the community. No feedback was received from local organisations or through the 1800 information line. To date there have been no requests for a virtual briefing session.

This suggests limited interest in, and no objection to, the proposal. Notwithstanding, the Applicant (and their representatives) remains open to discussing the proposal with interested community members prior to, and during the public exhibition and assessment process.

Table 20. Summary of the Community Engagement Undertaken to Date		
Engagement tool	Description & Purpose	Stakeholders reached
Resident, business and stakeholder flyer distribution	Flyer distribution to every letterbox within the catchment, outlining the proposed development, providing the website link and how to access the online survey.	Approximately 950 flyers delivered on 29 May 2024.
Community landing page	An information source and central point for stakeholders to find project information. The survey link was embedded on the website, inviting stakeholders to participate. The project website is found at: https://marsdenparkdatacentre.com.au/	Went live 28 May 2024. 188 site visits.
Online survey	An online survey to collect stakeholder feedback on the proposed development and allow stakeholders to ask questions about the proposal.	9 total responses between 29 May – 1 July 2024.
Letters to key stakeholders	Letters to all residents within the community catchment outlining the proposed development and invitation to provide feedback through the survey or information line. Letters to adjacent businesses and local community groups outlining the proposed development and an invitation to meet for an individual briefing session.	950 letters sent to local residents on 29 May 2024. 50 letters sent to local business on 29 May 2024. 3 letters emailed to community groups on 4 June 2024.
Information line	1800 phone number to provide stakeholders with the opportunity to give feedback on the proposal.	0 calls received.
Virtual briefing session	Businesses adjacent to the site could request a briefing session that provides detailed information on the proposal and the opportunity to provide feedback.	0 requests for a virtual briefing session.

5.1.1 Key themes of community feedback

Table 21 summarises feedback from the online survey. No feedback was received from local organisations or through the 1800 information line.

Feedback was shared with the broader technical teams for their consideration when undertaking analysis and developing designs and plans, or mitigations.

Table 21. Key community concerns and response to feedback	
Theme	Key concerns and response to feedback
Noise	<u>Key issues</u> One respondent questioned the impact of noise from cooling units and trucks to nearby residents. Other concerns about noise were during the construction phase and noise at night.
	<u>Response</u>

Table 21. Key community concerns and response to feedback

Theme	Key concerns and response to feedback
	An acoustic consultant has been engaged to assess the impact of noise on the surrounding area during construction and operation. The assessment will ensure compliance with EPA's Noise Policy. Updates to design Noise issues have been addressed in the Acoustics Report, providing the following mitigations developed through an iterated process: • Proposed acoustic barriers on the plant deck • Proposed acoustic barriers • Chiller stacks installed on top of each chiller to reduce noise emissions from chiller top surface Enclosures installed around each chiller compressor to reduce noise emissions from chiller side surfaces.
Over-development and its environmental impact on the area	Key issues A few residents were concerned with the proximity of the proposal to homes and the changing visual impact of the area. Two respondents preferred that existing trees on site remained to protect wildlife and biodiversity. There was also concern on the impact the development will have on existing urban heat challenges. A question about how the wildlife and features of the land will be preserved was asked. Response All trees are proposed to be retained on the southern boundary of the site which will provide a buffer for residents in Hassall Grove. Some trees will be removed to clear the site for development, however additional tree planting is proposed around the border of the site. This includes large canopy screening trees and additional tree planting to contribute to overall greenery. A review of the visual catchment has determined the proposal will have a low to moderate visual impact as it will be partially screened by vegetation, and the built form is consistent with the light industrial zoning of the area. Design solutions will be implemented to mitigate the impact on urban heat, including a light-coloured roof with high solar reflective index. Updates to design Issues related to visual impact have been addressed in the Landscape Masterplan, providing the following mitigations: • Retention of existing established vegetation along the eastern boundary alongside additional supplementary planting to increase visual screening Planting of large canopy screening trees around the site boundary, as well as additional internal planting to increase canopy coverage.
Traffic impact	Key issues One respondent had concerns that the Traffic Management Plan will be inadequate in providing safe vehicle movements for the local community. There was concern that the proposal would add to the existing heavy traffic near the site. A couple of respondents had concerns that the development will negatively affect residents of the Stoney Creek community through heavy traffic that disturbs the peacefulness of the village. Response

Table 21. Key community concerns and response to feedback	
Theme	Key concerns and response to feedback
	A traffic impact assessment estimates that 15% of vehicle trips to and from the site comprise of heavy vehicles. The assessment found that poor performance of existing intersections is due to the high volume of existing traffic and surrounding developments, and the impact of the proposal will not contribute significantly to this. <u>Updates to design/approach</u> The Traffic Management Plan notes that several mitigation measures will be in place to address potential traffic impacts and improve safety around the site, including: Accredited traffic controllers temporarily managing construction vehicle movement in and out of the site, which is appropriate considering the low volume of traffic along Hollinsworth Road Provision of alternative pedestrian routes where required during footpath construction works.
General construction & operation	<u>Key issues</u> One respondent had a question about the estimated length of construction. Another respondent queried the centre's operation hours and timing of when employees would be on site.
	<u>Response</u> - Construction will take place in a staged format over approximately 5 years - The data centre will operate 24/7 - Generally, office staff will only be on site during business hours, although there may be requirements for security personnel to be present at other hours of the day. <u>Update to design/approach</u> Community and stakeholders will have access to engagement website for updates on proposal and development. Communicating information via letterbox distribution is proposed prior to major milestones such as construction commencing.

5.2 Government Agency Consultation Summary

State and local government agencies were contacted throughout April – August 2024 as the SSDA package was being prepared. Details of the engagement, feedback, and advice from agencies, is provided in Table 22.

Table 22. Government Agency Consultation Outcomes	
Agency	Consultation Details
Department of Planning, Housing and Infrastructure (DPHI)	Refer to Section 5.3.
Blacktown City Council	Refer to Section 5.4.
Environment Protection Authority (EPA)	Refer to Section 5.5.
Biodiversity, Conservation and Science Group (BCS)	Refer to Section 5.6.
Transport for New South Wales (TfNSW)	Refer to Section 5.7.
Fire & Rescue NSW	Refer to Section 5.8.
NSW Rural Fire Service	Refer to Section 5.9.

Table 22. Government Agency Consultation Outcomes	
Agency	Consultation Details
Sydney Water	Refer to Section 5.10.
Endeavour Energy	Refer to Section 5.11.
Heritage NSW	Refer to Section 5.12.

5.3 Department of Planning, Housing and Infrastructure Feedback

Ongoing consultation has been undertaken with DPHI's Industrial Assessment team in relation to the proposal, with the project being discussed at meetings held with DPHI representatives on dates including 19 June 2024 and 22 August 2024. Key focuses of discussion regarded engagement activities to be undertaken and discussing ways of resolving potential acoustic issues.

5.4 Blacktown City Council Feedback

Ongoing consultation has been undertaken with Blacktown City Council in relation to the proposal and broader campus works. , with the project being discussed at meetings held with Council's representatives on dates including 22 December 2023 and 24 June 2024. These meetings were not held solely to discuss the subject SSDA, rather they also involved discussions about the Early Works DA and 5MW Data Centre DA.

In meeting minutes from **22 December 2023**, the summary advice for redevelopment of the sites was provided as:

- Trying to reduce the impact of the scale of the development by incorporating a sensitive Cut & Fill approach to reduce levels to be consummate to the existing landscape as much as possible;
- Addressing drainage and contamination as major issues; and
- Reinforcing the corporate message of the development.

Each of these topics are considered to have been well addressed not only within this application and EIS, but within the broader strategy for the site encompassing the Early Works DA and 5MW Data Centre DA.

The most recent meeting was held on **24 June 2024** at which a general project update was provided by the proponent, noting the intention to formally lodge the SSD following a review and update of the documentation.

5.5 Environment Protection Authority

Consultation has occurred with Environment Protection Authority (EPA) in the months prior to the lodgement of this SSD, as follows:

- **4 July 2024:** Teams meeting between Mecone and CDC to discuss matters relating to air quality, noise, environment protection licencing requirements, hazards and risks
- **August – September 2024:** Phone calls between Patch Planning and EPA regarding new requirements for SSDA under the "large emitters guidelines", and generally outlining the proposal's likely need for an EPL.
- **18 September 2024:** Teams Meeting with the Project Team, EPA and DPHI to discuss the below:

- Correctly defining the 15 minute night time criteria conversion. The EPA confirmed the starting point for the conversion to 15 minute criteria is +3dB(A). The project team subsequently concluded to adopt 38dB(A) at night as the most stringent relevant project noise trigger level.
- Correctly defining the emergency scenario criteria. The EPA advised that given an EPL is triggered by the proposal, the *Noise Policy for Industry* (NPFI) levels apply and exceedances would need to be justified.
- It was noted that an EPL would only be required for petroleum products storage, but not for general chemicals storage nor electricity generating works. EPA confirmed the EPL will be dealt with/issued after any consent for SSDA.
- Reference back to the SEARs with respect to EPA's requirements for SSDA.
- EPA noted that other data centres needed to be considered for the purposes of a cumulative air quality assessment.
- **24 October 2024:** Teams Meeting with the Project Team, EPA and DPHI to discuss the below:
 - Confirmation that holders of an Environment Protection Licence (EPL) are responsible for environmental impacts including greenhouse gases (GHG) generated within the premises. EPA advised that during the assessment stage they will consider the projected GHG emissions from or associated with the activities on a premises that requires an EPL under the POEO Act.
 - Categorising ICT electricity consumption as either Scope 2 or Scope 3 emissions. EPA confirmed for the purposes of assessing GHG emissions from this proposal, they are Scope 2 GHG emissions.
 - EPA provided additional advice on the GHG assessment and requested it include:
 - *A detailed explanation of how the data centre will operate and the interaction between CDC and customers*
 - *A discussion of how the controlling corporation was determined as it relates to the National Greenhouse and Energy Report Act (NGERs)*
 - *Predicted Scope 1, 2 and 3 emissions for the entire project boundary subject to this SSD application*
 - *Estimate of ICT electricity usage including but not limited to your lessee/s within the premises. (Note: The EPA may still consider this as scope 2 emission even if you decide to report this as scope 3 GHG emissions to be consistent with your other reporting requirements. The important thing is that these numbers are provided as part of your GHG assessment)*
 - *An assessment against the triggers in the draft NSW EPA Guide for large emitters*
 - *Proposed measures to avoid, minimise and manage greenhouse gas emissions.*

5.6 Biodiversity, Conservation and Science Group

Consultation has occurred with Biodiversity, Conservation and Science Group (BCS) has occurred in the months prior to the lodgement of this SSD.

An email was sent to BCS on **25 June 2024** to inform of intent to lodge a SSDA for the site and included a high-level summary of the proposal as well as requesting a meeting to discuss the matters raised within the SEARs. Correspondence was received on **27 June 2024** confirming meeting not required.

Details regarding the consultation with BCS undertaken to date are detailed further in 6.21 of the EIS. It is noted that these discussions also remain ongoing.

5.7 Transport for New South Wales

Consultation has occurred with Transport for New South Wales (TfNSW) in the months prior to the lodgement of this SSD, as follows:

- **05 June 2024:** Teams Meeting with TfNSW

Attendees: Landowner/Proponent, Stantec, Mecone, Representatives from TfNSW.

The meeting covered matters relating to the location and design of proposed sewer across Castlereagh Freeway corridor.

5.8 Fire & Rescue NSW

Consultation has occurred with Fire & Rescue NSW (FRNSW) in the months prior to the lodgement of this SSDA. An email was sent to FRNSW to inform of the intent to lodge a SSDA for the site including a high-level summary of the proposal and an offer to meet.

Correspondence received from FRNSW on **21 June 2024** confirmed no meeting was required and FRNSW will review and formally comment on the application when it is on public exhibition.

5.9 NSW Rural Fire Service

Consultation occurred with NSW Rural Fire Service (RFS) in the months prior to the lodgement of this SSDA, in order to confirm and clarify the requirements for the site in relation to the procedural application of *Planning for Bush Fire Protection*. Since the consultation the project team has incorporated RFS' comments. It is noted that the RFS will also have an opportunity to formally comment on the application when it is on public exhibition.

5.10 Sydney Water

The site will connect into the DN 200 Sydney Water main reticulating with Hollinsworth Road. The development team have engaged an accredited Water Servicing Coordinator (WSC) to liaise with Sydney Water. The application has been lodged with Sydney Water under case number 213728. It is anticipated that the existing Sydney Water asset will be adequate to service the proposed development at full capacity.

Confirmation that there is sufficient capacity in the existing potable water network to service the proposed development will be provided through Sydney Water's Notice of Requirements (NoR).

5.11 Endeavour Energy

Endeavour Energy are the Supply Authority for the area. Initially and prior to the establishment of the proposed onsite 132/11kV Zone Substation, the site shall be supplied from South Marsden Park Zone Substation at 11kV [2 off feeders arranged in a N+1 formation and rated for 10MVA].

A Preliminary Enquiry for the 132kV supplies to the site has been lodged with the Supply Authorities and is currently in the process of being reviewed.

5.12 Heritage NSW

Consultation has occurred with Heritage NSW in the months prior to the lodgement of this SSD, as follows:

- **29 May 2024:** Teams Meeting with Heritage NSW

Attendees: Landowner/Proponent, Travers, Mecone, Senior Assessments Officers from Heritage NSW

The meeting discussed key items that need to be updated in the ACHAR and additional work required following Heritage NSW preliminary review of the ACHAR. Confirmed Heritage NSW will undertake a full review as part of their assessment of the Early Works DA (now approved).

The meeting also discussed test excavation findings on the site, and agreed on next steps and way forward to update ACHAR.

Since the meeting the Early Works DA has been approved. No additional Aboriginal heritage impacts are expected as a result of the SSDA. It is noted that Heritage NSW will have an opportunity to formally comment on the application when it is on public exhibition.

5.13 Engagement To Be Carried Out

Following lodgement of the application, we expect DPPI will seek comments from relevant agencies and the local community throughout the exhibition phase. Detailed consideration of any issues raised at that point will be undertaken by the broader project team.

CDC will continue to keep stakeholders and the community informed of the project approval process through the exhibition and determination phases by:

- The **community website** will remain be accessible to the community and stakeholders until the end of 2025, which includes links to the NSW Planning major project website for status updates and more information.
- An **online form** (via the community website) and **1800 information phone line** will be available until the end of 2025 to allow for community and businesses to submit questions or feedback.
- A **community letterbox drop** will be completed prior to construction to notify local residents of expected schedule and timeframes.

6 Assessment of Impacts

6.1 Built Form and Urban Design

The design intent and principles which have guided the built form of the proposal are described in detail within EJE Architecture's Architectural Design Report (ADR) in **Appendix 6** of the EIS.

The site master plan and built form design have been prepared in response to an urban design study of the site's context, an in-depth site analysis and informed by an understanding of the desired future character for the Marsden Park Industrial Precinct and its realisation as an employment precinct.

The following urban design and architectural considerations informed the design:

- **Site arrangement:** The proposed campus layout of seven buildings is arranged in a Cartesian grid to support rational external services, pedestrian, and vehicular circulation across the site. A central east-west main Avenue anchors the layout, with technical elements like loading docks located on a perimeter ring road, creating opportunities for a pedestrian-friendly central space. The ring road also accommodates firefighting vehicles.
- **Building setbacks:** Generous building setbacks allow for substantial soft landscaping. The main building is set back over 25m from the southern boundary, over 20m from the north, and between 40m and 110m from the east, reducing bulk and scale impacts.
- **Landscape setbacks:** Setbacks around the site range from 14.5m to 86m and are vegetated with trees and soft landscaping to help screen the buildings from external viewpoints. Approximately 28% of the total site area is dedicated to soft landscape and managed vegetation.
- **Central Spine:** The internal separations between buildings provide space for landscaped pedestrian pathways and breakout areas. These spaces form part of the central east-west spine avenue, enhancing the campus atmosphere. All building entries are located within this zone, providing pedestrian connections between buildings and to car parks and outdoor spaces.
- **Functional arrangement:** Of the six data storage buildings, all share the same layout, driven by the functional requirements of the data halls and technical service spaces. Each building is rectangular and spans four levels.
- **Defined functional zones:** Offices are located at the front of each building, while loading bays and services are at the rear. This front-and-back arrangement helps break down building mass and offers opportunities for façade articulation on the office side.
- **Floor to floor heights:** Established at 6.1m, the floor heights are optimised for ceiling clearances, services, and structural needs for data halls.
- **Mechanical plant:** Mechanical equipment is located on rooftop decks, screened for acoustic and visual purposes.
- **Façade design:** The front-of-house (FOH) features a glazed curtain wall with horizontal and vertical blades for sun shading, while the back-of-house (BOH) uses solid painted materials with striated finishes to break up the building's mass.
- **Materials and colours:** Front-of-house uses grey tinted glass and metal screening with accents of 'wattle yellow' to highlight entrances. Back-of-house has muted grey tones for blending with the environment.

- **Sustainability:** The project is designed for long-term use, with a focus on energy efficiency, building maintenance, and staff comfort.
- **Security:** The site includes active security and surveillance, allowing access only to staff and authorized visitors.

In summary, the Proposal has been designed to provide for a suitable architectural outcome which is appropriate within the industrial context of the area, whilst also meeting the bespoke design requirements of the data centre typology.

It is considered that the proposed development will deliver a high-quality industrial development that promotes and supports wider economic growth and employment within Marsden Park and should be regarded as positive and beneficial in supporting urban renewal through ensuring the effective re-use of an underutilised site.



Figure 35: Site landscape and vegetation opportunities
Source: EJE Architecture



Figure 36: Site built form setback opportunities
Source: EJE Architecture



Figure 37: Major central spine Avenue
Source: EJE Architecture



Figure 38: Technical services and movement pathways
Source: EJE Architecture



Figure 39: Site diagram highlighting primary service vehicle routes
Source: EJE Architecture



Figure 40: Site diagram highlighting primary passenger vehicle routes
Source: EJE Architecture



Figure 41: Site diagram highlighting primary pedestrian circulation routes
Source: EJE Architecture

6.2 Design Quality

The proposed development has been designed to accord with the objectives for good design within the Government Architect NSW *Better Placed – an integrated design policy for New South Wales* (see EJE Architecture's Architectural Design Report (ADR) in **Appendix 6** of the EIS for further detail).

The objectives shown in Figure 42 define the key considerations in the design of the built environment. The consistency of the Proposal with the Better Placed objectives and design principles is addressed in Table 23 below.

						
OBJECTIVE 1.	OBJECTIVE 2.	OBJECTIVE 3.	OBJECTIVE 4.	OBJECTIVE 5.	OBJECTIVE 6.	OBJECTIVE 7.
<u>Better fit</u> contextual, local and of its place	<u>Better performance</u> sustainable, adaptable and durable	<u>Better for community</u> inclusive, connected and diverse	<u>Better for people</u> safe, comfortable and liveable	<u>Better working</u> functional, efficient and fit for purpose	<u>Better value</u> creating and adding value	<u>Better look and feel</u> engaging, inviting and attractive

Figure 42: Better Placed Design Principles
Source: NSW Government Architect

Table 23. Better Placed Objectives and Design Principles

Better Placed Objectives	Design Principles	Response
Objective 1: Better fit – contextual, local and of its place	<i>Good design in the built environment is informed by and derived from its location, context and social setting. It is place-based and relevant to and resonant with local character, heritage and communal aspirations. It also contributes to evolving and future character and setting.</i>	The proposed development area is a large site part of an emerging industrial area. With a site area of approximately 200,000sqm, over 60,000sqm of the land is retained as landscape area comprising of remnant and supplemented vegetation. The majority of this area is located around the perimeter of the site, providing a landscaped curtilage to the development. The retained and supplemented trees will screen the buildings, breaking down their bulk especially when viewed from residential areas some distance to the south. The proposed buildings will make a positive contribution to the desired future character of the precinct. Whilst a private and secure complex, the campus will provide a high level of pedestrian amenity and will elevate the industrial development with a 'business park' character along its central road, glimpses of the finely grained façade treatment to the office components being visible from various external vantage points.
Objective 2: Better performance – sustainable, adaptable and durable	<i>Environmental sustainability and responsiveness is essential to meet the highest performance standards for living and working. Sustainability is no longer an optional extra, but a fundamental aspect of functional, whole of life design.</i>	The value of large scale data storage facility is inherent in its ability to provide secure and constant data storage at scale for the long term with low maintenance and minimal operational costs. High quality durable materials and detailing will be employed in the proposed development to ensure performance and reliability. Office areas will be provided with high levels of amenity including daylighting and natural ventilation. High performing glazing together with appropriate sun shading will optimise working conditions.
Objective 3: Better for community – inclusive, connected and diverse	<i>The design of the built environment must seek to address growing economic and social disparity and inequity, by creating inclusive, welcoming and equitable environments. Incorporating diverse uses, housing types and economic frameworks will support engaging places and resilient communities.</i>	The facility is a private and secure environment that by necessity does not provide general public access. However the development brings greater and more diverse employment opportunities, either directly or indirectly, to the area, and supports and reinforces a positive and diverse built environment character for the local area.

Table 23. Better Placed Objectives and Design Principles

Better Placed Objectives	Design Principles	Response
Objective 4: Better for people – safe, comfortable and liveable	<i>The built environment must be designed for people with a focus on safety, comfort and the basic requirement of using public space. The many aspects of human comfort which affect the usability of a place must be addressed to support good places for people.</i>	Security is a key driver of the built outcome of this development, with only staff and authorised visitors being provided with access to the site. This aspect of the physical site arrangement, coupled with the active on-site security and surveillance, will create a safe and secure working environment for people interacting with the development. The office workspace areas are focused around a pedestrian friendly and human scaled landscaped avenue which will help foster a collegiate community of workings across the various buildings.
Objective 5: Better working – functional, efficient and fit for purpose	<i>Having a considered, tailored response to the program or requirements of a building or place, allows for efficiency and usability with the potential to adapt to change. Buildings and spaces which work well for their proposed use will remain valuable and well-utilised.</i>	The development is a state-of-the-art data storage centre facility. The design of this proposal forms part of an ongoing iterative design process by a number of experienced design professionals across multiple projects over many years and has resulted in a highly tuned response to the functional program. The use of non-loadbearing internal walls throughout the building allows for future flexibility. Office workspace areas are large open areas with expansive glazing which easily accommodate future fitouts and adaptability.
Objective 6: Better value – creating and adding value	<i>Good design generates ongoing value for people and communities and minimises costs over time. Creating shared value of place in the built environment raises standards and quality of life for users, as well as adding return on investment for industry.</i>	This project is to be delivered for CDC's long term use as a single developer-owner-operator. As a result, high performance across all criteria including energy usage, building maintenance and staff comfort are paramount. The Marsden Park Data Centre campus will build on previous project efficiencies and provide an improved layout with more considered construction materials and methodologies to meet CDC's stated long term goals. The scale of the ongoing operational and capital investment in the development by CDC is expected to create improved values to the surrounding industrial/commercial land, on the basis of their proximity with a high quality development positioned in a transformative 21st century industry.

Table 23. Better Placed Objectives and Design Principles		
Better Placed Objectives	Design Principles	Response
Objective 7: Better look and feel – engaging, inviting and attractive	<i>The built environment should be welcoming and aesthetically pleasing, encouraging communities to use and enjoy local places. The feel of a place, and how we use and relate to our environments is dependent upon the aesthetic quality of our places, spaces and buildings. The visual environment should contribute to its surroundings and promote positive engagement.</i>	The proposal provides a modern large-scale facility with a diversity of material palette inclusive of large areas of soft landscaping and clean modern building materiality. The site will include extensive deep soil landscaping around the site perimeter and through the central avenue. Pedestrian spaces will be well integrated with the landscape creating a human scale to the development. The façade treatment will enhance the human scale through a considered treatment of the office building façade with sun shading blades create a visually rich building envelope, the deep articulation creating shadow play that changes throughout the day.

As demonstrated in Table 23, the proposal demonstrates design excellence as a result of having been designed to accord with the objectives for good design as outlined in *Better Placed*.

6.3 Landscaping

The site consists of established tall canopy vegetation of which the majority is to be cleared as part of the Early Works DA. Whilst the operation of the data centre requires the provision of visual access and clear sight lines, it is recognised that the proposal also needs to incorporate a unified landscape treatment to provide appropriate asset protection zones (APZ), contribute to biodiversity and to enhance visual and site amenity.

Landscape areas proposed at the site will soften and visually screen the proposed buildings, hardstand areas, plant and mechanical services from nearby industrial, commercial and residential areas. At completion the proposed development will double canopy coverage; across the site (as per Table 24) and deliver 42,989sqm of deep soil landscaping (23.8% of site).

Table 24. Proposed Canopy Coverage		
Area	sqm	% of site
Existing Canopy	8,921	5%
New Canopy	9,503	5%
Total Canopy Coverage	18,424	10%

'Castlereagh Ironbark Forest' predominantly along the eastern boundary of the site, and within the 6m of the ecological zone along the southern boundary of the site, will be retained, managed and revegetated in order to achieve:

- An improvement of biodiversity values within the site following construction of the proposed development;
- The re-establishment of native vegetation broadly representative of the original plant community at the site;

- Figure 43 shows the Landscape Masterplan for the site, as detailed within the accompanying Landscape Masterplan Report prepared by Terras Landscape Architects (see **Appendix 7** of the EIS).



6.4 Visual Impacts

To assess the visual impacts of the proposal, a Visual Impact Assessment (VIA) has been prepared by Terras Landscape Architects (Terras) and is provided as **Appendix 34** of the EIS. In accordance with the requirements of the SEARs, the assessment evaluates the landscape character of the site, the current visual amenity from selected viewpoints in the surrounds, and the significance of change to the views based on the degree of change resulting from the Proposal and visual sensitivity.

6.4.1 Assessment Locations

Terras' review of the visual catchment of the site identified that views were limited to within approximately 750m of the site. This is predominantly due to the existing built environment, topographic forms, and existing vegetation. As detailed in Figure 44, the scope of the VIA has included an offset of approximately 1500m from the subject site, however the concentration of the assessment occurred within approximately 1000m of the site.

Twelve (12) discrete viewpoint locations are identified for photomontage and visual impact assessment which are presented in Figure 44.

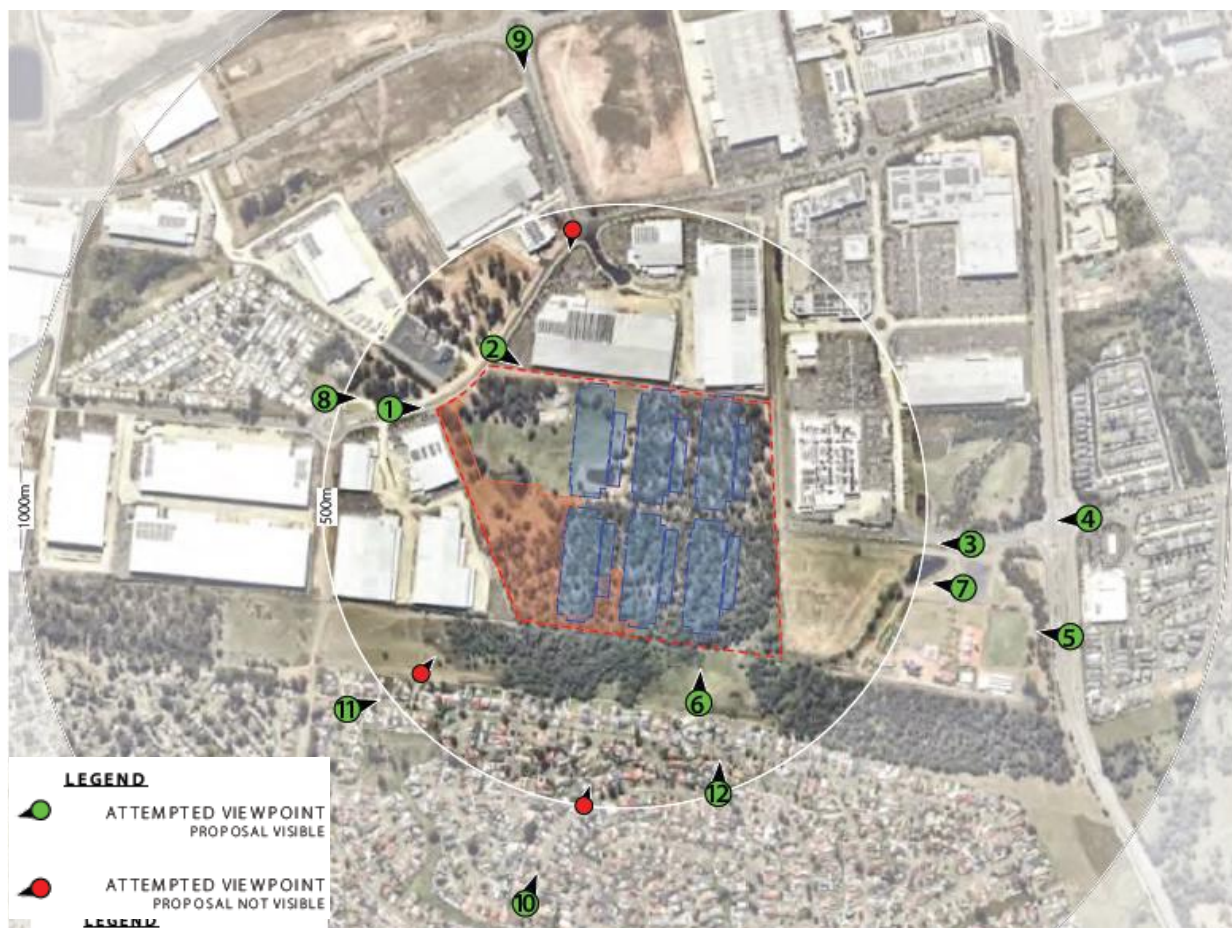


Figure 44: Viewpoint Locations

Source: Terras Landscape Architects

6.4.2 View Impact Assessment

Table 25 provides a summary of the results of the VIA.

Table 25. Viewpoint Impact Assessment Summary

Viewpoint	Access	Effect	Sensitivity	Impact
Viewpoint 1	Moderate	Low	Low	Low
Viewpoint 2	Moderate	Low	Low	Low
Viewpoint 3	High	Moderate	Low	Low
Viewpoint 4	High	Moderate	Moderate	Moderate
Viewpoint 5	High	Moderate	Moderate	Moderate
Viewpoint 6	High	Moderate	Moderate	Moderate
Viewpoint 7	High	Moderate	Moderate	Moderate
Viewpoint 8	Moderate	Moderate	Moderate	Moderate
Viewpoint 9	High	Low	Low	Low
Viewpoint 10	Moderate	Moderate	Moderate	Moderate
Viewpoint 11	High	Moderate	Moderate	Moderate
Viewpoint 12	High	Moderate	Moderate	Moderate

As outlined in Table 25, the proposal will have a **low to moderate cumulative visual impact** as it protrudes over the line of existing vegetation, it will also be partially screened by existing and proposed vegetation. It is noted that the proposal sits within light industrial zoning (IN2) and is consistent with the existing and expected built forms. The VIA concludes the following:

- *“Viewpoint 1 has been assessed to have a LOW visual impact due to its location within an existing industrial character which results in a low visual sensitivity and low visual effect. While the proposal is set to change the existing view of dense vegetation between the industrial forms the views afforded from this location would not be seen out of context of the surrounding industrial built form. The proposal is consistent with existing built forms and would provide some degree of screening through proposed landscaping.*
- *Viewpoint 2 has a similar assessment as Viewpoint 1 and is partially screened through proposed landscaping and existing industrial built forms therefore the visual impact has been assessed as LOW.*
- *Viewpoint 3 views are afforded to users driving to the local shopping centers located to the north east of the site, there will be views of the proposal over the line of existing vegetation. There will also be filtered views of the proposal from this view through existing vegetation, this would be supplemented by addition native planting. However the proposal would not be viewed in isolation from the existing industrial park, therefore the visual impact has been assessed as LOW.*
- *Viewpoint 4 returned a MODERATE visual impact rating due to its location on a major travel corridor with short viewing times, and as the proposal is situated above the tree canopy and provides a contrast from the existing view of dense vegetative backdrop. It is likely that most views from this location are afforded to vehicles traveling along a major travel corridor. Furthermore, there is a range of foreground screening of existing vegetation and built forms.*

- Viewpoint 5 has a high viewer number but short viewer time as this viewpoint is located along Richmond Road travelling parallel with the proposal site. The proposal will be partially visible over the established tree canopy along with filtered views through existing and proposed vegetation. Views from this location are afforded to users traveling along a major road corridor at 80km/h therefore the visual impact has been assessed as MODERATE.
- Viewpoint 6 has been assessed to have a MODERATE visual impact as the proposal is located in such close proximity to the north of a residential boundary line. Although portions of the proposal will be screened by existing vegetation outside of the site boundary which is to be retained, this does not span over the entire length of the site boundary. Due to the removal and thinning of portions of vegetation within the site the proposal is likely to be visible. It is noted that the established vegetation providing screening sits on land between the residential boundary and the proposal site which is zoned for future highway development.
- Viewpoint 7 represents views from the Baitul Huda Mosque, while the viewer numbers are low, there is an extended viewing time of the proposal. The proposal remains consistent with the surrounding industrial and large scale commercial developments such as Costco which can be seen within the same viewshed. However, the background is set to change from dense established vegetation to vegetation with an industrial building(s) that protrude above the tree canopy. The visual impact from this location has been assessed as MODERATE.
- Viewpoint 8 has been assessed to have a MODERATE visual impact. The proposal is consistent with existing built forms and would provide some degree of screening through proposed landscaping. This viewpoint considers the views expected of users leaving the Ingenia Lifestyle Community. There would unlikely be significant views of the proposal from within the residencies and would not be seen out of context of the existing surrounded industrial built form.
- Viewpoint 9 has a high viewer number but low viewer sensitivity as the views afforded from this location are afforded to viewers within an existing industrial zone. The proposal will not be seen out of context from the surrounding industrial forms, therefore, the visual impact has been assessed as LOW.
- Viewpoints 10, 12 have an extended viewing time as the proposal will be visible through select visual corridors and some residential dwellings. The proposal will be seen over the existing tree canopy through select locations within the residential cluster to the south of the proposal site. These viewpoints have been assessed as a MODERATE visual impact.
- Viewpoint 11 is located within the residential cluster to the south of the proposal site, the proposal will likely be screened through existing vegetation outside of the site boundary but there may be pockets where the vegetation and built form allows for views of the proposed buildings. The visual impact has been assessed as MODERATE."

6.4.3 Recommended Mitigation Measures

While the proposal will have a **low to moderate cumulative visual impact**; it is considered that these impacts can be appropriately managed through the adoption of appropriate mitigation measures, including:

- **Landscaping:** Develop a strong landscape plans that employs effective screening of lower levels and implements use of tall, native, evergreen species where APZ requirements allow;
- **Material:** Varied treatment and use of recessive colours to the facade to reduce its perceived mass and encourage integration into the existing landscape; and

- **Lighting:** ensure that outdoor lighting does not give rise to obtrusive effects in accordance with AS/NZS 4282:2023).

6.5 Operational Noise and Vibration

An Operational Noise and Vibration Impact Assessment (ONVIA) has been prepared by Stantec and is provided in **Appendix 29** of the EIS. A Construction Noise and Vibration Impact Assessment (CNVIA) has been prepared by Northrop Consulting Engineers Pty Ltd (Northrop) and is provided in **Appendix 28** of the EIS. The CNVIA is discussed in Section 6.6 of this EIS.

The CNVIA and ONVIA address the requirements of the SEARs. A summary of the key findings of the ONVIA is provided below.

6.5.1 Assessment Locations

As part of the preparation of the ONVIA, the nearest potentially affected noise receivers have been identified by Stantec in Figure 45 and Table 26.

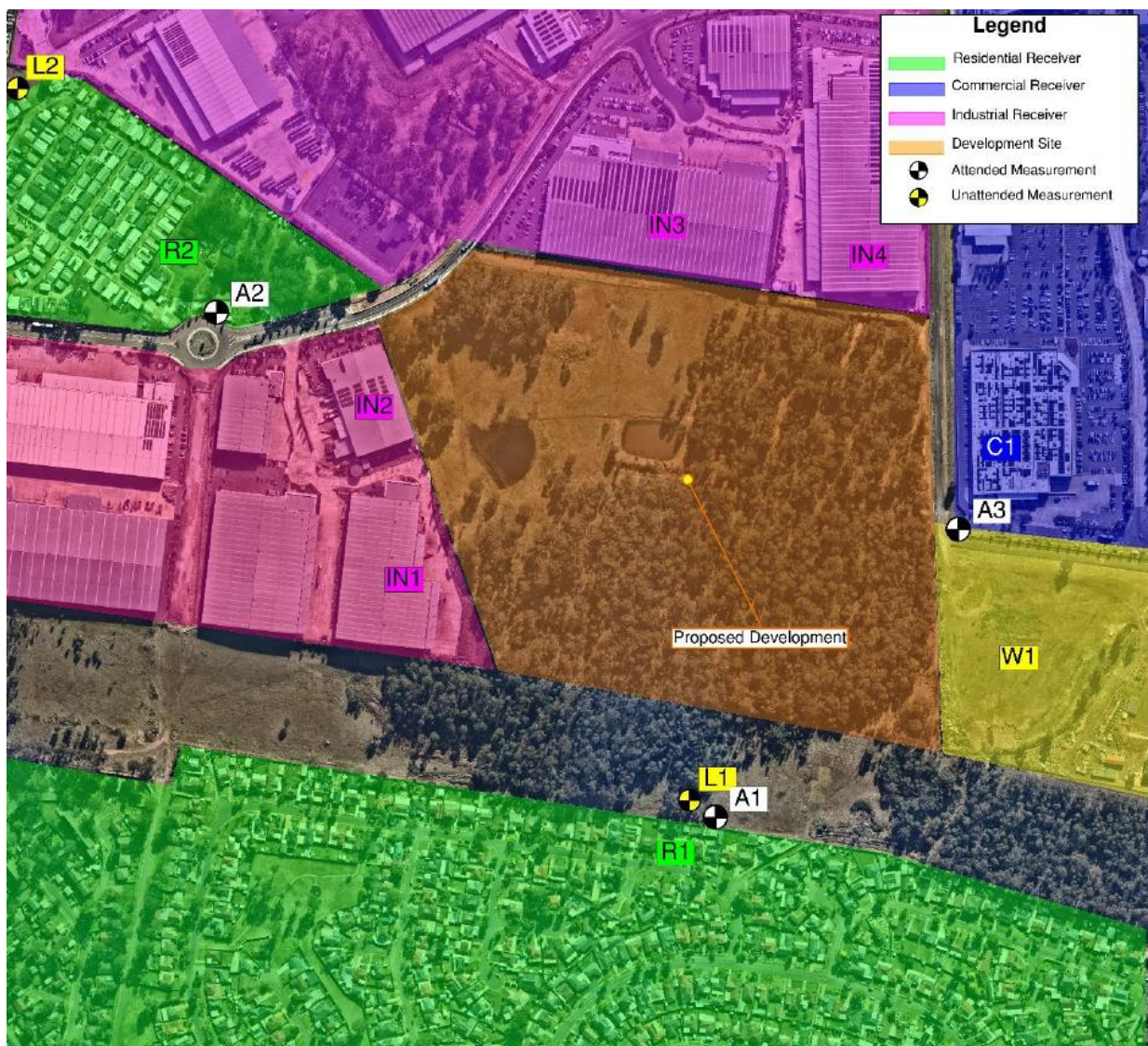


Figure 45: Location of Identified Sensitive Receivers
Source: Stantec

As demonstrated in Figure 45, the site is bounded by Industrial Land to the North and West, and Commercial/Business Development Land located to the East. To the South there are residential properties, which are likely to be considered the most affected noise sensitive receivers for the project. There are additional residential receivers as part of the retirement village located beyond Hollinsworth Road to the North West.

The nearest noise sensitive receivers which have potential of being impacted by noise associated with the Project are the surrounding Industrial Properties (IN1 – IN4), Commercial Properties (C1) and residential properties located at (R1 & R2) which have been summarised in Table 30.

Table 26. Summary of noise sensitive receivers		
Receiver ID	Receiver Type	Receiver Description
R1	Multiple Residential (most affected) Developments – Single Dwelling	Single and double story single dwelling residential houses along Stockholm Ave.
R2	Multiple Residential Developments - Retirement Village	Single story dwelling residential houses within retirement village
C1	Commercial Receiver	Costco Wholesale Marsden Park
IN1	Industrial Receiver	JB Hi Fi Marsden Park
IN2	Industrial Receiver	Valley Fresh
IN3	Industrial Receiver	Medline Internal Two Australia
IN4	Industrial Receiver	ActronAir
W1 (a)	Place of Worship	Baitul Huda Mosque
W1 (b)	Hotels, motels, caretakers' quarters, holiday accommodation, permanent resident caravan parks	Baitul-Huda Mosque
Source: Table 2-1 ONVIA Stantec		

6.5.2 Existing Acoustic Environment

Existing background noise levels are required for the establishment of the intrusive noise criteria, which applies only to residential locations. All other receivers have fixed criteria applied.

UNATTENDED NOISE SURVEY RESULTS

Two (2) noise loggers were placed at position L1 and L2 as shown in Figure 45 to measure the background and ambient noise. L1 and L2 are expected to be representative of the most affected surrounding residential receivers. Both loggers were installed for a period of seven (7) days from the 23 - 30 July 2024.

The results of the unattended background noise survey are presented in Table 27.

Table 27. Long term noise monitoring results						
Location	Equivalent Continuous Noise Level – Leq, period dB(A)			Background Noise Level RBL – dB(A)		
	Day	Evening	Night	Night	Evening	Night
L01	51	45	43	41	38	34
L02	52	48	46	42	43	39
Source: Table 3-1 ONVIA Stantec						

The logger installed at L1 as installed on the back of the residential properties within the grassed open area to understand the local noise environment and will be used to establish the project specific criteria for these noise sensitive receivers. The logger was installed in the free field to minimise the influence of any potential reflections from any buildings or structures.

The Logger installed at L2 has been installed on the backside of the retirement village in the empty land. The position of the Logger at L2 was chosen as a practical location to be representative of the existing background environment (i.e. free from traffic and other intrusive noise sources.) Whilst on site, it was noted that construction works were present along Hollinsworth Road, which would've impacted the validity of our monitoring if the monitor was installed along this road. By relocating the monitor to the backside of the retirement village, we believe that the data obtained at this location will be more suitable for establishing the project specific criteria for this sensitive receiver.

No acoustic monitoring was conducted to the mosque as the criteria is defined by the Amenity Criteria of the EPA NPI and is not defined based on noise monitoring.

ATTENDED NOISE SURVEY RESULTS

Attended noise measurements of 15-minute duration were conducted by Stantec on site to characterise the traffic noise intruding into the development and to validate the results of the unattended noise monitoring. The locations of the attended noise measurements close to the proposed development site are shown in Figure 45.

Table 28 below shows the summary of the attended noise measurements. Details regarding the attended monitoring methodology are included in the ONVIA.

Table 28. Attended noise measurements				
Measurement		Leq,15min dBA	L90,15min dBA	Comments
Location	Time			
A1 (Southern Receiver – R1)	31/07/2024 10:10am	50	46	Local Noise environment is characterised by Wildlife noises (birds and dogs occasionally barking). Trees rustling. Distant Traffic hum from Richmond Road can be heard.
A2 (Northern Receiver – R2)	31/07/2024 10:58am	65	50	Local Noise environment is characterised by industrial hum from industrial developments in the surrounding area. Intermittent vehicle pass-bys on Hollinsworth with high percentage of heavy vehicles
A3 (Costco – C1)	31/07/2024 11:28am	54	50	Local Noise environment is characterised by wildlife noise (Birds). High Traffic is audible along Richmond Road. Occasional distant activities are audible within Costco Loading Dock (pallet movements, loading and unloading, etc.)
Source: Table 3-2 ONVIA Stantec				

ADDITIONAL ACOUSTIC MONITORING

Additional acoustic monitoring was undertaken as part of the noise assessment for the Construction Noise and Vibration Impact Assessment (CNVIA) prepared by Northrop dated 14th August 2024 (as detailed within Section 6.6 of this EIS).

When comparing the results of the Northrop monitoring to the data obtained through Stantec's monitoring within the ONVIA, it is evident that there is no significant change across the residential area, despite approximately 600m between the two (2) unattended monitor locations. The results obtained from Northrop's logger in the CNVIA are slightly higher, likely due to the proximity to Richmond Road. However it is believed that based on the data presented, the monitoring conducted by Stantec in the ONVIA is a conservative representation of the residential area as a whole. Greater detail regarding this topic is provided within the full ONVIA.

6.5.3 Operational Noise Criteria

The EPA sets out criteria in its *Noise Policy for Industry* (NPfI) to control the noise emission from industrial noise source or continuous steady state noise.

The calculation is based on the results of the ambient and background noise unattended monitoring, addressing two components:

- Controlling intrusive noise into nearby residences (Intrusiveness Criteria)
- Maintaining noise level amenity for particular land uses (Amenity Criteria)

Once both criteria are established the most stringent for each considered assessment period (day, evening, night) is adopted as the Project Noise Trigger Level (PNTL).

The following criteria is applicable for the external noise emissions from the development, as detailed below in Table 29. These project noise trigger levels are in accordance with the requirements of the NSW NPfI and shall be assessed to the reasonably most affected point on or within the residential boundary.

Table 29. Project noise trigger levels		
Period	Descriptor	PNTL dB(A)
Residential receivers – R1		
Day (7:00am to 6:00pm)	LA _{eq,15min}	46
Evening (6:00pm to 10:00pm)	LA _{eq,15min}	43
Night (10:00pm to 7:00am)	LA _{eq,15min}	38
Residential Receivers – R2		
Day (7:00am to 6:00pm)	LA _{eq,15min}	47
Evening (6:00pm to 10:00pm)	LA _{eq,15min}	43
Night (10:00pm to 7:00am)	LA _{eq,15min}	38
Caretakers / holiday accommodation		
Day (7:00am to 6:00pm)	LA _{eq,15min}	58
Evening (6:00pm to 10:00pm)	LA _{eq,15min}	48
Night (10:00pm to 7:00am)	LA _{eq,15min}	43
Commercial receivers		
When in use	LA _{eq,15min}	63
Place of Worship		
When in Use (External)	LA _{eq,15min}	48
Industrial Receiver		
When in Use	LA _{eq,15min}	68
Source: Table 4-5 ONVIA Stantec		

6.5.4 Operational Noise Assessment

3D acoustic modelling of noise emissions from the site have been undertaken using SoundPlan Version 9.0 to predict the noise impact for the site as a whole to the nearby noise sensitive receivers.

Noise sources from operations will include mechanical services noise from air-conditioning equipment, and emergency generators, which have been used to predict the noise impact at sensitive receivers.

SCENARIO 1 – NORMAL OPERATIONS

As per the ONVIA, Scenario 1 or standard operations is defined as mechanical plant operating as per below, with no generators running and the assumptions in 5.4 of the ONVIA. The operating conditions considered in this assessment for Scenario 1 are as follows:

- MP1.S1
 - 18 Chillers
 - 6 Chillers operational during the day time period with the rest used a redundancy
 - 3 Chillers operational during the night time period with the rest used a redundancy
- MP1.S2
 - 30 Chillers in two blocks of 15
 - 12 chillers operational during the day time period with the rest used as redundancy
 - 9 Chillers operational during the night time period with the rest used a redundancy
 - 6 Pac units
 - 40 Generators
- MP2 – MP6 (5 buildings)
 - 45 Chillers in three blocks of 15 per building
 - 17 chillers operational during the day time period per building with the rest used a redundancy
 - 12 chillers operational during the night time period per building with the rest used a redundancy
 - 6 Pac units per building
 - 40 Generators per building

In order to assess the worst-case scenario, it is assumed that the air conditioning units associated with the proposed development are running at any time throughout a 24hr period (103 during the day time period and 72 during the night time period with the rest being used as a redundancy). With all, night time is the most stringent period for the noise generated by the operation of the mechanical plant, therefore this criterion was used as the noise target at the boundary of the nearest sensitive receivers for the project.

It should be noted that night mode adjustment has been considered for the reduced chiller load during the night period. Additionally, generators have been assessed separately as an emergency scenario, as they are not expected to be part of the typical operational conditions.

SCENARIO 2 – NORMAL OPERATIONS & GENERATOR TESTING

As per the ONVIA, Scenario 2 or standard operations & generator testing is defined as mechanical plant and equipment operating as per Scenario 1, and the generators operating under a testing and maintenance regime (i.e. 10 generators between 9am and 4pm).

SCENARIO 3 – EMERGENCY OPERATIONS

Scenario 3 (emergency operations) is defined as mechanical plant and equipment operating as per Scenario 1, and the generators operating during an emergency or power outage (i.e. half generators operating as a conservative estimate).

In the unlikely event of a power interruption or emergency, 36 of the 40 generators (per building) are designed to be operational with the remaining four (4) generators designated to serve as redundant engines. Assuming that only 36 generators per building will be running during an emergency situation, this results in a total of 216 generators across all six (6) buildings on the site.

Mains power interruption events are relatively infrequent with an expected likelihood of occurrence once (1) every two (2) years. According to the *Endeavour Energy Distribution Annual Planning Report* (Endeavour Energy, 2023) the average duration of a power outage is approximately 60.1 minutes, or about 1 hour. The likelihood of this occurring is 0.006% representing (one (1) hourly event every two (2) years). This is below the 200 hour threshold for an EPL under the POEO Act 1997.

Each Scenario has been presented divided into stages to show the noise impacts overtime as the development progresses. Each stage will have 2 data centre buildings being constructed and have been divided as shown in Figure 46.

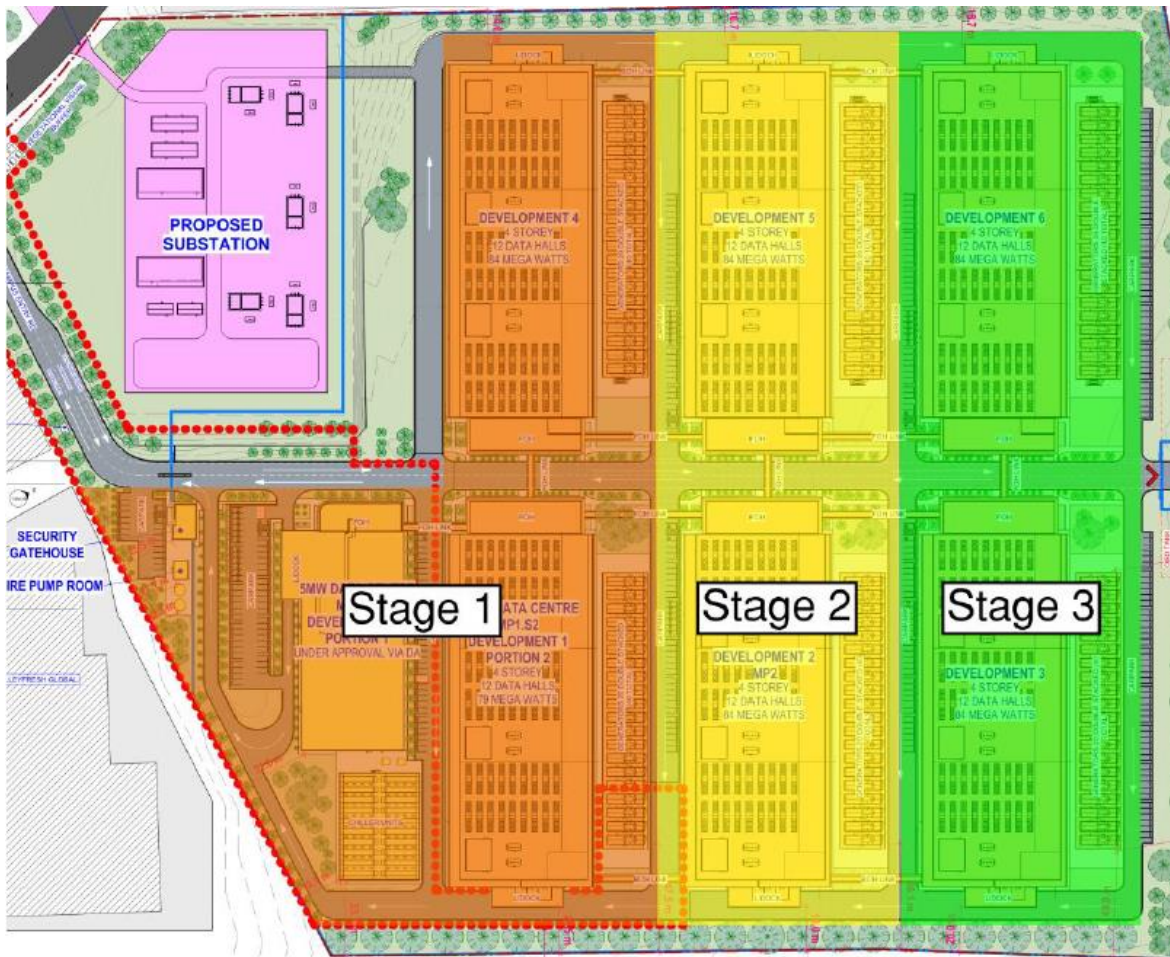


Figure 46: Noise Modelling Scenario Stages
Source: Stantec

The results of the noise modelling at each of the surrounding noise-sensitive receivers is provided in Table 30, Table 31 and Table 32 and was conducted using the modelling parameters listed above.

Table 30. Predicted Noise Levels at Nearest Sensitive Receivers – Scenario 1 (Mechanical Plant) Normal Operations

Location	Period	Criteria dB(A)	Noise Levels dB(A)											
			STAGE 1				STAGE 2				STAGE 3			
			Stability Category				Stability Category				Stability Category			
			A	D	E	F	A	D	E	F	A	D	E	F
R1 - 105 Stockholm Ave	Day	46	41	41	41	-	42	42	42	-	42	43	43	-
	Evening	43	33	34	34	-	34	35	35	-	35	35	35	-
	Night	38	33	34	34	34	34	35	35	35	35	35	35	35
R1 - 117 Stockholm Ave (First Floor)	Day	46	38	39	39	-	41	41	41	-	43	43	43	-
	Evening	43	31	32	32	-	34	35	35	-	36	37	37	-
	Night	38	31	32	32	32	34	35	35	35	36	37	37	37
R1 - 117 Stockholm Ave (Second Floor)	Day	46	39	39	39	-	41	41	41	-	43	43	43	-
	Evening	43	31	32	32	-	34	35	35	-	37	37	37	-
	Night	38	31	32	32	32	34	35	35	35	37	37	37	37
R1 - 125 Stockholm Ave	Day	46	38	38	38	-	40	41	41	-	44	44	44	-
	Evening	43	31	31	31	-	34	34	34	-	37	38	38	-
	Night	38	31	31	31	31	34	34	34	34	37	38	38	38
R2 - Retirement Village	Day	47	39	40	40	-	41	42	42	-	41	42	42	-
	Evening	43	33	33	33	-	34	35	35	-	35	36	36	-
	Night	38	33	33	33	33	34	35	35	35	35	36	36	36
IN1 - JB Hi Fi	When in Use	68	48	48	48	42	48	49	49	42	48	49	49	42
IN2 - Valley Fresh	When in Use	68	43	44	44	37	44	45	45	38	44	45	45	38
IN3 - Medline	When in Use	68	39	39	39	33	52	52	52	46	52	52	52	46
IN4 - Actron Air	When in Use	68	47	48	48	41	43	44	44	37	53	53	53	48
C1 - Costco	When in Use	63	47	48	48	42	52	53	53	47	51	52	52	46

Table 30. Predicted Noise Levels at Nearest Sensitive Receivers – Scenario 1 (Mechanical Plant) Normal Operations														
Location	Period	Criteria dB(A)	Noise Levels dB(A)											
			STAGE 1				STAGE 2				STAGE 3			
			Stability Category				Stability Category				Stability Category			
			A	D	E	F	A	D	E	F	A	D	E	F
W1a- Batiful Huda Mosque	When in Use	48	39	40	40	34	44	44	44	38	39	40	40	34
W1b Caretakers / holiday accommodation	Day	58	39	40	40	-	44	44	44	-	39	40	40	-
	Evening	48	33	34	34	-	37	38	38	-	33	34	34	-
	Night	43	33	34	34	34	37	38	38	38	33	34	34	34
Source: Table 5-3 ONVIA Stantec														

Table 31. Predicted Noise Levels at Nearest Sensitive Receivers – Scenario 2 (Testing and Maintenance)

Location	Period	Criteria dB(A)	Noise Levels dB(A)											
			STAGE 1				STAGE 2				STAGE 3			
			Stability Category				Stability Category				Stability Category			
			A	D	E	F ¹	A	D	E	F ¹	A	D	E	F ¹
R1 - 105 Stockholm Ave	Day	46	43	43	43	-	43	44	44	-	44	44	44	-
R1 - 117 Stockholm Ave (First Floor)	Day	46	45	45	45	-	45	46	46	-	46	46	46	-
R1 - 117 Stockholm Ave (Second Floor)	Day	46	46	46	46		46	46	46	-	47 ²	47 ²	47 ²	-
R1 - 125 Stockholm Ave	Day	46	45	46	46	-	46	46	46	-	46	46	46	-
R2 - Retirement Village	Day	47	39	40	40	-	41	42	42	-	41	41	41	-
IN1 - JB Hi Fi	When in Use	68	48	48	48	-	48	49	49	-	48	49	49	-
IN2 - Valley Fresh	When in Use	68	43	44	44	-	44	45	45	-	44	45	45	-
IN3 - Medline	When in Use	68	60	60	60	-	61	61	61	-	61	61	61	-
IN4 - Actron Air	When in Use	68	53	53	53	-	44	45	45	-	53	54	54	-
C1 - Costco	When in Use	63	51	52	52	-	52	53	53	-	51	52	52	-
W1a - Batiful Huda Mosque	When in Use	48	43	44	44	-	44	44	44	-	39	40	40	-
W1b - Caretakers / holiday accommodation	Day	58	43	44	44	-	44	44	44	-	39	40	40	-

¹ As discussed in Section 6.5.4 generators are not proposed to be run at night-time for testing purposes.

² 1-2dB(A) is not deemed a perceptible change in noise level. Furthermore, this scenario is descriptive of the worst-case testing scenario and is expected to be short-term impact and therefore not expected to cause any adverse impact to the receiver.

Source: Table 5-4 ONVIA Stantec

Table 32. Predicted Noise Levels at Nearest Sensitive Receivers – Scenario 3 (Emergency & Power Outage)														
Location	Period	Criteria dB(A)	Noise Levels dB(A)											
			STAGE 1				STAGE 2				STAGE 3			
			Stability Category				Stability Category				Stability Category			
			A	D	E	F	A	D	E	F	A	D	E	F
R1 - 105 Stockholm Ave	Day	46	41	42	42	-	42	43	43	-	43	44	44	-
	Evening	43	36	37	37	-	37	38	38	-	39	39	39	-
	Night	38	36	37	37	37	37	38	38	38	39	39	39	39
R1 - 117 Stockholm Ave (First Floor)	Day	46	49	49	49	-	50	50	50	-	51	52	52	-
	Evening	43	49	49	49	-	50	50	50	-	51	51	51	-
	Night	38	49	49	49	49	50	50	50	50	51	51	51	51
R1 - 117 Stockholm Ave (Second Floor)	Day	46	52	52	52	-	53	54	54	-	54	55	55	-
	Evening	43	52	52	52	-	53	54	54	-	54	55	55	-
	Night	38	52	52	52	52	53	54	54	54	54	55	55	55
R1 - 125 Stockholm Ave	Day	46	50	50	50	-	51	52	52	-	53	53	53	-
	Evening	43	50	50	50	-	51	52	52	-	52	52	52	-
	Night	38	50	50	50	50	51	52	52	52	52	52	52	52
R2 - Retirement Village	Day	47	39	40	40	-	41	42	42	-	42	43	43	-
	Evening	43	34	35	35	-	36	37	37	-	37	38	38	-
	Night	38	34	35	35	35	36	37	37	37	37	38	38	38
IN1 - JB Hi Fi	When in Use	68	48	49	49	42	48	49	49	43	49	49	49	43
IN2 - Valley Fresh	When in Use	68	44	44	44	39	45	45	45	41	45	46	46	41
IN3 - Medline	When in Use	68	63	63	63	62	64	64	64	64	64	65	65	64
IN4 - Actron Air	When in Use	68	57	58	58	57	61	61	61	61	62	63	63	62
C1 - Costco	When in Use	63	56	57	57	56	59	60	60	59	64	64	64	64

Table 32. Predicted Noise Levels at Nearest Sensitive Receivers – Scenario 3 (Emergency & Power Outage)														
Location	Period	Criteria dB(A)	Noise Levels dB(A)											
			STAGE 1				STAGE 2				STAGE 3			
			Stability Category				Stability Category				Stability Category			
			A	D	E	F	A	D	E	F	A	D	E	F
W1 - Batiful Huda Mosque	When in Use	48	47	48	48	46	50	50	50	49	51	51	51	51
W1b Caretakers / holiday accommodation	Day	58	47	48	48	-	50	50	50	-	51	51	51	-
	Evening	48	47	48	48	-	49	49	49	-	51	51	51	-
	Night	43	47	48	48	48	49	49	49	49	51	51	51	-
Note 1. The modelling assumes half of all the generators to be running simultaneously. This is a overly conservative assessment given the generators operate on a redundancy system. Note 2. No prolonged exposure is expected with the above scenario. Operation of emergency scenario is below the 200 hours threshold outlined in the POEO Act. Exceedances above the standard PNTL have been shown for information in the unlikely event of the 1 hr/ 2yr power outage.														
Source: Table 5-5 ONVIA Stantec														

Table 30 (Scenario 1) and Table 31 (Scenario 2) indicate the noise impact to all surrounding receivers are expected to comply with the established noise criteria for all time periods and stability categories.

As demonstrated in Table 32, the noise impact during the emergency scenario (Scenario 3) is expected to exceed the established criteria in some instances. This is representative of the worst-case emergency scenario and is expected to be short-term impact during a power outage (estimated to be up to a 1 hour event every 2 years).

It should be noted that this assessment is highly conservative and is based on the maximum load operating conditions which is not expected to be representative of the development for several years. It is expected that the local noise environment will also undergo change over these years, and by which point the contribution from the development will be notably less.

Further to the above, the acoustic assessment has been conducted to the boundary or the most affected point on a property as per the requirements of the NSW EPA NPfI. When considering the noise intrusion into a habitable area of a residential property, it is expected to be significantly reduced due to the attenuation provided by the building's façade. This means that while boundary levels might be higher, the actual impact on indoor noise levels is considerably lower and likely to be inaudible.

If the operational profile changes, further acoustic analysis will need to be undertaken to ensure compliance with the relevant noise criteria is achieved.

6.5.5 Operational Traffic Noise Generation

A traffic generation noise assessment has been undertaken in order to determine the potential noise impact of traffic generated by the proposed development.

When considering land use development and the impact on sensitive land uses, the *NSW Road Noise Policy* (RNP) states that an increase up to 2.0dB in relation to existing noise levels is anticipated to be insignificant.

The existing conditions on site demonstrate that the noise in association with local traffic is characterised by a high percentage of industrial (heavy vehicles) and the surrounding road networks are subject to high levels of traffic (i.e. Richmond Road).

As detailed within the TIA and in Section 6.9 of this EIS, the traffic generation from the proposed development is estimated to be 133 total vehicle trips for both AM and PM peak periods. The total estimated traffic flow on the surrounding road network (Richmond Road and Hollinsworth Road) is significantly larger, with a high quantity of heavy vehicles. Due to the likelihood of the peak hours showing higher traffic volumes, the effect of the trips generated by the development can be considered insignificant.

Based on the traffic generation noise assessment, the additional generated traffic is not expected to generate any discernible or adverse noise impacts to the nearest noise sensitive receivers. The traffic noise impact on the post-development generated traffic will be negligible. Therefore, the proposed development is expected comply with the requirements of the NSW RNP.

6.5.6 Recommended Operational Noise Mitigation Measures

Several different design options have been considered at the site throughout the master planning and design development phases of the project. The final acoustic mitigation measures were determined through a series of iterative adjustments, balancing practical noise reduction with the functional needs of equipment (i.e. maximising airflow and minimising pressure drop).

By systematically refining treatment strategies Stantec and the design team were able to define treatments which reduced the noise levels to a suitable levels without affecting the performance of the equipment.

As indicated in Figure 47, noise mitigating barriers are required around the proposed chiller plants.

Figure 47 identifies the locations of each barrier type; whether it extends below the chiller deck, and how far it extends above the height of the chillers as necessary. The barriers are required to have an absorptive lining to the inside face of the barrier (i.e. facing the chillers) with an acoustic performance of NRC 1.00.

In order to ensure the chillers are able to operate sufficiently without comprising the performance, full-height barriers (i.e. extending from the roof level to above the height of the chillers) were not practical in all areas due to the airflow requirements of the chillers. As such the following strategy was adopted to provide attenuation through a convoluted path, whilst having an open area to allow for airflow through the underside of the plant deck.

Figure 48 provides a diagrammatic section of the proposed chiller plant acoustic barrier strategy. However, it should be noted that that barriers to the north and south of the plant are proposed to be full-height (i.e. extending to the roof level below the plant deck). All barriers on the plant deck are proposed to extend a minimum of 2m above the height of the chillers with varying requirements for the below deck extent as per Figure 47.

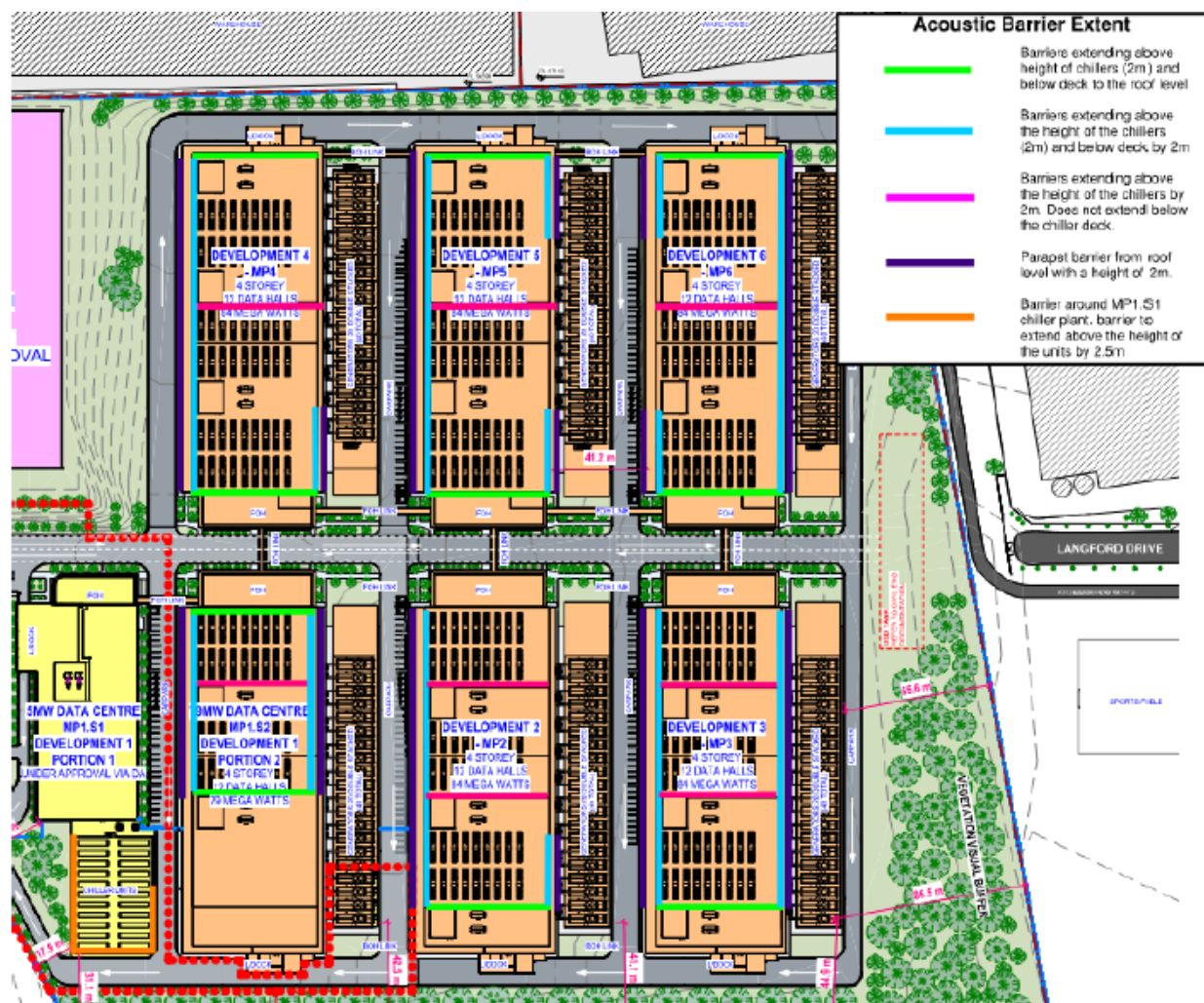


Figure 47: Extent of acoustic barriers to chiller plant
Source: Stantec

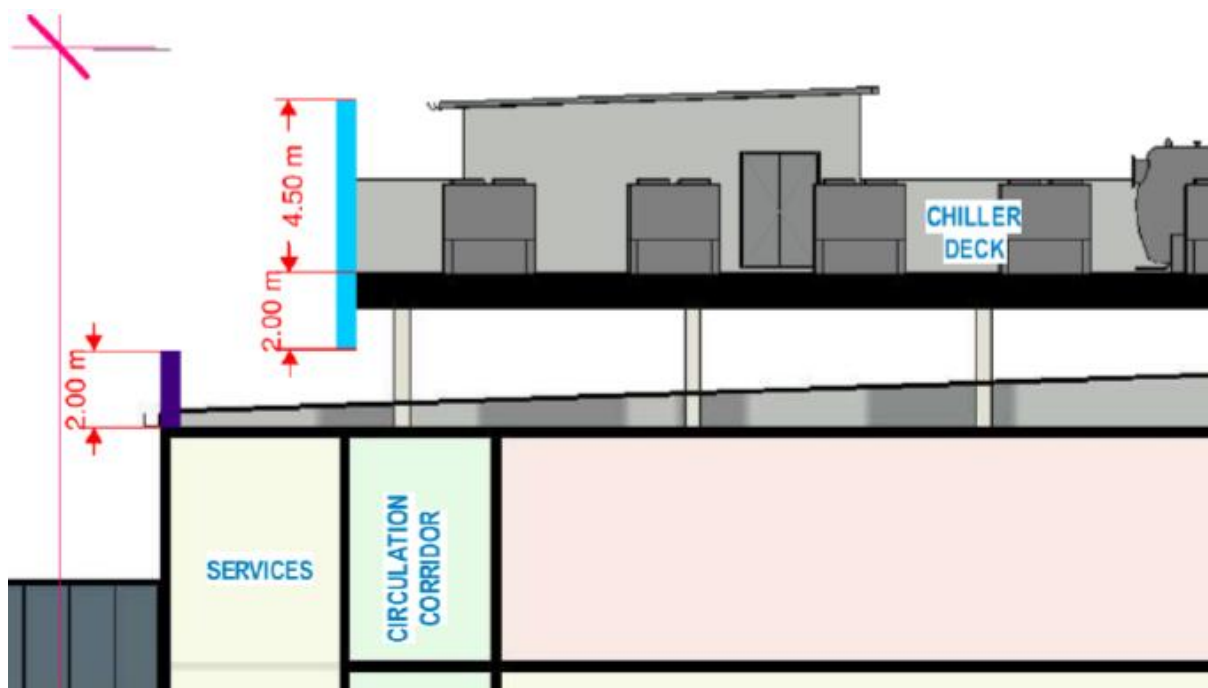


Figure 48: Chiller plant acoustic barrier strategy
Source: Stantec

Additionally, Stantec have implemented the use of a chiller stack type product into the model. Based on available products on the market (such as NOISEBLOCK Chiller Stacks) a 10dB(A) reduction has been applied to top surface of the chillers as a conservative estimate while manufacturers data is procured. This attenuation has been applied to the noise model in order to achieve the predicted results presented. Alternate means of achieving the required reduction are acceptable upon acoustic review through design; provided the overall noise levels at the receiver comply.

Furthermore, an enclosure should be installed around the compressor of each chiller. Based on similar options provided by other manufacturers a 2dB(A) sound power reduction is expected to be achieved from this enclosure. This has been applied to the side surfaces of the chillers in this assessment.

6.6 Construction Noise and Vibration

A Construction Noise and Vibration Impact Assessment (CNVIA) has been prepared by Northrop Consulting Engineers Pty Ltd (Northrop) and is provided in **Appendix 28** of the EIS. The CNVIA addresses the requirements of the SEARs. A summary of the key findings of the report prepared is provided below.

6.6.1 Assessment Locations

As demonstrated in Figure 49, the site has residential receivers to the south and north west. Industrial buildings are located directly west and north of the Project. Additionally, a commercial building and a place of worship is located to the east of the Project.

The nearest representative receivers which have potential of being impacted by noise associated with the Project are summarised in Table 38. The residential receivers to the east are significantly far from the development and are heavily impacted by traffic noise from Richmond Road. It is anticipated that noise compliance at the closer receivers would also result in compliance at the further eastern residential receivers and therefore have not been considered further.

A noise catchment area (NCA) is used to group receivers within a similar noise environment. Two residential catchment areas were identified closest to the Project were identified as outlined in Table 34.



Figure 49: Location of Identified Sensitive Receivers
Source: Northrop, CNVIA

Table 33. Identified Affected Receivers				
NCA	Receiver ID	Address	Land use	Description
NCA01	R01	99 Stockholm Avenue, Hassall Grove	Residential	Single storey residential building
	R02	105 Stockholm Avenue, Hassall Grove	Residential	Single storey residential building
	R03	117 Stockholm Avenue, Hassall Grove	Residential	Double storey residential building
	R04	6 Helga Place, Hassall Grove	Residential	Double storey residential building
	R05	21 Colebee Crescent, Hassall Grove	Residential	Double storey residential building
-	R06	45 Hollinsworth Road, Marsden Park	Place of worship	Baitul Huda Mosque
-	R07	10 Langford Drive, Marsden Park	Commercial	Costco Wholesale Marsden Park
NCA02	R08	10 Canary Street, Marsden Park	Residential	Ingenia Lifestyle – Stoney Creek Single storey retirement dwelling

Table 33. Identified Affected Receivers				
NCA	Receiver ID	Address	Land use	Description
-	R09	Lot 23 of DP262886	Industrial	Industrial estate
-	R10	Lot 1 of DP1214328	Industrial	Industrial estate
Source: Table 3 CNVIA Northrop				

Table 34. Noise Catchment Areas	
NCA	Description
NCA01	Residential dwellings located south of the Project. Background noise dominated by distant traffic noise from Richmond Road, with ambient bird noise. During the evening and night, insect/ frog noise can be heard within the NCA.
NCA02	Residential dwellings within the Ingenia Lifestyle retirement community located northwest of the Project. Ambient noise consisting of industrial noise from nearby warehouses and road traffic noise from Hollinsworth Road. During the evening and night, the ambient noise is dominated by bird and tree rustling noise.
Source: Table 2 CNVIA Northrop	

6.6.2 Construction Noise

The CNVIA assesses construction works in accordance with the *NSW Interim Construction Noise Guideline* (ICNG).

The construction works are proposed to occur anywhere within the site boundary. As detailed within Section 3.2.3 of this EIS, the works are proposed to be undertaken in stages with the following durations:

- Stage 1 – MP1.S2 & MP4: 1.5 years
- Stage 2 – MP5 then MP2: 1.5 years
- Stage 3 – MP6 then MP3: 2 years

For modelling purposes, three separate construction scenarios were assessed for each stage and are detailed in Table 35.

Table 35. Construction modelling scenarios	
Scenario ID	Construction activity
SC01 – Scenario 01	Early works
SC02 – Scenario 02	Excavation and piling
SC03 – Scenario 03	Structural works
Source: Table 7 CNVIA Northrop	

The proposed hours of construction that have been used for modelling purposes are consistent with those detailed within Section 3.2.10 of this EIS.

Noise emissions from construction activities have been assessed to Noise Management Levels (NMLs) as defined in Table 36. Equipment with special audible characteristics is not expected to operate for the majority of the construction works. Therefore, the predicted noise levels are presented as a worst case scenario (includes noise generated by equipment with special audible characteristics) and a typical scenario (does not include noise generated by equipment with special audible characteristics).

It is noted that the predicted construction noise levels are generally conservative and do not represent a constant noise emission that would be experienced by the community on a daily basis throughout the project construction period. For a conservative assessment, it is assumed that all the plant and equipment are operating concurrently. However, in reality not all plant and equipment will be operating concurrently, therefore the actual construction noise levels will be lower than the predicted maximum noise levels presented below.

Table 36. Predicted Construction Noise Levels - Residential and Non-residential Receivers									
Receiver ID / Receiver Type	Meteorological	Standard Work Hours NML ¹	OOWH ² NML	Predicted Noise Levels					
				SC01		SC02		SC03	
				Typical	Worst Case	Typical	Worst Case	Typical	Worst Case
R01 Residential	Calm Winds	51	46	57	60	63	64	60	62
	Prevailing Winds	51	46	53	56	59	60	56	58
R02 Residential	Calm Winds	51	46	59	62	65	66	62	64
	Prevailing Winds	51	46	54	57	60	61	57	59
R03 Residential	Calm Winds	51	46	59	62	65	66	62	64
	Prevailing Winds	51	46	52	55	58	59	55	57
R04 Residential	Calm Winds	51	46	61	64	67	68	64	66
	Prevailing Winds	51	46	52	55	58	59	55	57
R05 Residential	Calm Winds	51	46	58	61	64	65	61	63
	Prevailing Winds	51	46	47	50	53	54	50	52
R06 Worship	Calm Winds	55 ³	55 ³	58	61	64	65	61	63
	Prevailing Winds	55 ³	55 ³	47	50	53	54	50	52
R07 Commercial	Calm Winds	70 ³	70 ³	65	68	71	72	68	70
	Prevailing Winds	70 ³	70 ³	62	65	68	69	65	67
R08 Residential	Calm Winds	52	47	41	44	47	48	44	46
	Prevailing Winds	52	47	41	44	47	48	44	46
R09 Industrial	Calm Winds	75 ³	75 ³	65	68	71	72	68	70
	Prevailing Winds	75 ³	75 ³	65	68	71	72	68	70
R10 Industrial	Calm Winds	75 ³	75 ³	53	56	59	60	56	58
	Prevailing Winds	75 ³	75 ³	53	56	59	60	56	58
¹ Standard Hours. Recommended hours of construction, 7am to 5pm Monday to Friday, 8am to 1pm Saturday									
² Outside of work hours (OOWH)									
³ When in use									
Note: Cells highlighted in		orange	indicate an exceedance of standard hours NMLs						
Source: Table 14 CNVIA Northrop									

Table 36 shows that in construction scenarios SC01, SC02 and SC03, the noise levels are predicted to exceed the NML. However, none of the residential receivers were predicted to exceed the highly noise affected criteria of 75 dBA.

Additionally, the above noise levels are considered conservative as it is unlikely that all plant and equipment will be operating concurrently. Therefore, the actual construction noise levels would be lower than the levels presented previously.

Where exceedances occur, the ICNG provides recommendations to minimise construction noise impacts and are detailed in Section 6.6.4 of this EIS.

6.6.3 Construction Vibration Assessment

The effect of vibration in buildings can be divided into two main categories:

1. **Effects on building structures** – vibration that can result into cosmetic building damage.
2. **Disturbance to building occupants** – vibration in which the occupants or users of the building are inconvenienced or possibly disturbed.

The management objective for the CNVIA is to limit vibration from construction activities so as to avoid building damage and human discomfort associated with the construction works.

The closest buildings in the vicinity of development are industrial, with the nearest residential receivers being further set back from the Project.

Vibration management strategies shall be implemented on site for the vibration intensive equipment. Typical construction plant equipment most likely to cause significant vibration include: piling rigs; jackhammers; and vibratory rollers.

The CNVIA recommends minimum working distances from vibration-intensive equipment, as shown in Table 37. The vibration intensive works must comply with the minimum working distances, where feasible. When works need to occur within these recommended minimum buffer distances, vibration monitoring is proposed. The CNVIA recommends that site specific minimum buffer distances are determined through attended vibration monitoring.

Table 37. Recommended minimum buffer distances for construction plant (cosmetic damage)

		Minimum working distance	
Plant item	Rating/ Description	Cosmetic	Human response
Piling rig - bored	≤ 800mm	2 metres (nominal)	N/A
Vibratory roller	< 200 kN (typically 4-6 t)	12 metres	40 metres
Jackhammer	Hand held	1 metre (nominal)	Avoid contact with structure

Source: Table 18 CNVIA Northrop

All reasonable and feasible mitigation measures should be applied for the construction of the Proposal. The following section discusses in-principal management measures that could be employed.

6.6.4 Construction Road Traffic Noise

The road traffic noise impacts have been assessed at the most sensitive receivers. It is expected that when compliance is achieved at the most sensitive receivers, compliance will also be achieved at the less sensitive receivers. In this instance, the most sensitive receivers are the residential receivers located within the Ingenia Lifestyle retirement village (NCA02), located northwest of the Project. This is due to the traffic generation only affecting Hollinsworth Road and its subsequent connected roads. The road traffic noise criteria for the nearby sensitive receivers are summarised in Table 38.

Table 38. Road traffic noise criteria for residential receivers affected by additional traffic from land use developments

Receiver	Road traffic noise criteria	
	Day time ¹	Night time ¹
Residential (NCA02)	55 Leq,1hr dBA	50 Leq,1hr dBA
¹ Day time defined as 7am to 10pm and night time is 10pm to 7am.		
Source: Table 20 CNVIA Northrop		

When assessing noise impact using the existing road network, an initial screening test is applied to evaluate whether noise levels are expected to increase by more than 2 dBA due to the additional traffic generated by the Proposal. Where noise levels are predicted to increase by more than 2 dBA then mitigation measures should be considered for the affected receivers.

The CNVIA has used the existing traffic volumes and predicted additional construction trip generation rates as detailed within the Transport Impact Assessment (TIA) prepared by Stantec, provided as **Appendix 33** of this EIS, and in addition has adopted a light vehicle generation rate of 113 light vehicles would be generated (133 total vehicles with 15% heavy vehicles).

Access to and from the site will be via Hollinsworth Road which is a local road. Using the existing and the future generated traffic volumes, the road traffic noise was predicted at the residential receivers located along Hollinsworth Road. The results of the predicated road traffic noise (AM and PM peak) are detailed in Table 39.

Table 39. Predicted road traffic noise (AM and PM Peak)

Peak Time	Approximate distance from road to receiver	Time period ¹	Criteria Leq,1hr dBA	Predicted Leq,1hr dBA ^{2,3}	Compliance
AM	250m	Day	55	48	Yes
PM	250m	Day	55	44	Yes
1. Time periods as defined in the RNP					
2. Predicted noise level includes façade reflection (i.e. at façade noise level)					
3. Existing + generated construction traffic					
Source: Table 22 CNVIA Northrop					

As detailed within Table 39, the predicted construction road traffic noise at the nearest sensitive receiver is not expected to exceed the criteria specified in the RNP. Thus, no recommendations are required for noise due to traffic generation from the proposed development.

6.6.5 Recommended Construction Noise Mitigation Measures

Given the predicted noise levels during the construction phase, a number of noise control measures and noise management practices have been recommended within the CNVIA (for the proposal).

Specific construction noise and vibration mitigation measures should be determined as part of a Construction Noise and Vibration Management Plan (CNVMP) which will include the implementation of practices to reduce construction noise impacts, including standard engineering mitigation measures as specified within Table 40.

Table 40. AS 2436:2010 – Possible construction noise mitigation measures	
Noise mitigation measure	Typical noise reduction
Distance attenuation	6 dB per doubling of distance
Screening and barriers	Typically, 5 to 10 dBA maximum 15 dBA
Enclosure	Typically, 15 to 25 dBA maximum 50 dBA
Silencing	Typically, 5 to 10 dBA maximum 20 dBA
<i>Source: Table 19 CVIA Northrop</i>	

Feasible and reasonable work practices should be implemented to reduce the noise and vibration impact to the nearest affected receivers. Indicative recommendations that can be considered during construction are summarised below:

- Community engagement / liaison: Notify the community of planned noisy activities. The community should be notified at least two weeks prior to works beginning and should include the duration and reason for the activity. There should be a communication system such as letter dropping, availability of a site contact and a complaint handling system in place;
- Locating plant and equipment as far away from sensitive receivers;
- Where feasible, find “less noisy” alternative construction processes;
- Select quieter equipment or fit equipment with silencers, where feasible;
- Regularly inspecting and maintaining equipment;
- Schedule noisy activities during less sensitive times of the day. The time of day will depend on the specific receivers and should be determined through community consultation;
- Organising the site layout to promote one-way traffic to reduce vehicle reversing movements;
- No idling of delivery trucks;
- Switch off any equipment not in use for extended periods of time;
- Educating staff and contractors about noise and quiet work practices. This could include signage and site inductions;
- Construction noise and/or vibration monitoring may be required to respond to noise and/or vibration complaints. A qualified acoustic consultant should determine the monitoring program and methodology; and
- Site specific minimum buffer distances should be determined through attended vibration monitoring as part of the CNVMP. The site specific minimum buffer distances should be implemented for vibration intensive plant. With regards to vibration impacts during construction, these will be managed by the Contractor and will depend on the type, size, number and location of equipment used.

6.7 Hazards and Risks – Dangerous Goods

A Preliminary Risk Screening Assessment (Risk Screening) has been undertaken by Vector Alliance Pty Ltd and is provided as **Appendix 24** of the EIS.

For an abundance of caution, the risk screening covers the entire area of the SSDA works and separate 5 MW data centre as described in Figure 1. This includes both the works in the 504 MW data centre campus (the subject of this application) as well as the 5MW DA. The entirety of the site has been assessed to determine the cumulative impact of the entire campus.

Table 41 outlines the dangerous goods stored or proposed to be stored and confirms that the Proposal will not exceed the threshold. It should be noted that Class 9 dangerous goods and C1 combustible liquids are excluded from the SEPP screening to identify 'potentially hazardous facilities.'

Table 41. Quantities of Dangerous Goods Stored Across Campus		
Substance	DG Class	Quantity
504 MW Data Centre Campus		
Lithium-ion batteries	9	1,040,656kg
Diesel	N/A – not a DG but it is a C1 combustible liquid	7,231.5t
5 MW Data Centre		
Lithium-ion batteries	9	27,490kg
Diesel	N/A – not a DG but it is a C1 combustible liquid	248.5t
Total Campus		
Lithium-ion batteries	9	1,068,146kg
Diesel	N/A – not a DG but it is a C1 combustible liquid	7,480t
Source: Table 1 Preliminary Hazards and Risks Memorandum, Vector Alliance Pty Ltd		

In accordance with the additional assessment requirements outlined in the SEARs, the report demonstrates that the development will comply with the relevant aspects of the following standards, specifically regarding relevant storage requirements relating to off-site hazards and risk:

- AS 1940 – Storage and handling of flammable and combustible liquids (AS 1940) – **fully compliant.*** As per the Risk Screening at **Appendix 24**, the key AS 1940 compliance items are as follows:

 - o Diesel tank construction and ventilation.
 - o Tank fill points.
 - o Location and spacing of diesel fuel storage tanks.
 - o Separation to buildings, boundary, and other protected places.
 - o Structural and fire resistance requirements of the generator supporting structure.
 - o Fire protection requirements.
 - o General safety requirements.

Full details of compliance with AS 1940 are provided in the Risk Screening at **Appendix 24**.
- AS/NZS 4681 – Storage and handling of Class 9 (miscellaneous) dangerous goods and articles (AS/NZS 4681) – **fully compliant.*** As per the Risk Screening at **Appendix 24**, the key AS/NZS 4681 compliance items are as follows:

 - o Maximum quantities of lithium-ion batteries and their special conditions associated with their storage condition to be permitted as minor storage.
 - o Separation distances.
 - o Special requirements for lithium-ion batteries preventing modification or tampering with the batteries.
 - o General safety requirements.

- *AS IEC 62619 – Secondary cells and batteries containing alkaline or non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications* (AS IEC 62619) – **fully compliant**. As per the Risk Screening at **Appendix 24**, the proposed lithium-ion batteries will be required to comply with AS IEC 62619 and be provided with compliance certificates. A copy of the compliance certificate associated with the batteries currently proposed to be utilised at the is provided as Appendix A of the Hazards Memo.
- *FM Global Property Loss Prevention Data Sheet 5-32 – Data Centres and Related Facilities* (FMDS 5-32) – **generally proposed to comply**. As per the Risk Screening at **Appendix 24**, the key FMDS 5-32 compliance items proposed to be relied on for the proposed Data Centre building's fire safety strategy are as follows:
 - Automatic fire sprinkler system installed throughout is proposed to be compliant with FMDS 5-32.
 - Automatic fire detection system installed throughout is proposed to be compliant with FMDS 5-32.
 - Installation of lithium-ion batteries is proposed to be compliant with FMDS 5-32. This includes batteries location, spacing, orientation and maximum permissible capacity per data rack.

Another component of the SEPP 33 screening covers the transportation of hazardous goods within the facility, citing movement thresholds for dangerous good classes. The SEPP screening for transportation considers only the lithium-ion batteries above certain identified movement thresholds. During standard operations the batteries are not expected to move, with expected movements being limited to the commissioning stage. During commissioning and operation, the peak movements not expected to exceed the thresholds for maximum annual or weekly vehicle movements.

The SEPP screening results show that neither the storage nor transportation thresholds are exceeded for the dangerous goods considered for the development, thus the facility is **not considered “potentially hazardous”** in reference to the R&H SEPP 2021 and does not require a Preliminary Hazard Analysis to be conducted.

6.7.1 Recommended Mitigation Measures

The following recommendations are made regarding the management of dangerous goods on the site:

- Ensure an outer warning placard is prominently displayed at workplace entrances where emergency services may enter in accordance with Regulation 349. In addition, the placard must be clearly legible, separate from other signs and otherwise compliant with Schedule 13.
- Placards must be prominently displayed on or near the diesel storage tanks in accordance with Regulation 350. In addition, the placard must be clearly legible, separate from other signs and otherwise compliant with Schedule 13.
- A manifest of all Schedule 11 chemicals must be prepared in accordance with Regulation 347 and Schedule 12 of the WHS Regulation.
- The SafeWork NSW must be notified of diesel storage exceeding manifest quantities in accordance with Regulation 348 of the WHS Regulation.
- An emergency plan must be prepared for the Site and provided to the NSW Fire and Rescue as per the requirements of Regulation 361 and Division 4 of Part 3.2 of the WHS Regulation.

6.8 Air Quality

Todoroski Air Sciences (Todoroski) have prepared an Air Quality Impact Assessment (AQIA) to examine and identify the impacts of construction and operations on local air quality (**Appendix 11** of the EIS).

The AQIA has been performed in general accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (NSW EPA, 2022) (EPA Approved Methods) and the requirements of the SEARs. The assessment considers surrounding land sensitivity, topography, meteorology, air quality, and potential for cumulative impacts to determine the impact of both construction activities and operations.

The background air quality levels applied to the assessment within the AQIA are summarised in Table 42.

Table 42. Summary of background air quality levels	
Pollutant	Background level ($\mu\text{g}/\text{m}^3$ = micrograms per cubic metre)
24-hour average PM10	48.0 $\mu\text{g}/\text{m}^3$
24-hour average PM2.5	21.5 $\mu\text{g}/\text{m}^3$
Maximum 1-hour average NO2	OLM – hourly varying background level
Source: Table 6-4 Air Quality Impact Assessment, Todoroski	

Table 43 summarises the air quality goals that are relevant to this assessment as outlined in the EPA Approved Methods. The incremental criterion relates to impact from the Project alone. The air quality criterion specified in Table 43 relate to the total pollution burden in the air and not just the pollution from the Project. Consideration of background dust levels is required when using these criteria to assess total potential impacts.

Table 43. NSW EPA air quality impact assessment criteria		
Pollutant	Averaging Period	Criterion
Particulate matter $\leq 10\mu\text{m}$ (PM ₁₀)	24 hour	50 $\mu\text{g}/\text{m}^3$
Particulate matter $\leq 2.5\mu\text{m}$ (PM _{2.5})	24 hour	25 $\mu\text{g}/\text{m}^3$
Nitrogen dioxide (NO ₂)	1 hour	164 $\mu\text{g}/\text{m}^3$
Source: Table 5-1 Air Quality Impact Assessment, Todoroski		

The *National Environment Protection Council Act 1994* (NEPC Act 1994) and subsequent amendments define the National Environment Protection Measures (NEPMs) as instruments for setting environmental objectives in Australia. The Ambient Air Quality NEPM specifies national ambient air quality standards for air pollutants and is similar to the NSW EPA air quality impact assessment criteria specified in Table 43.

6.8.1 Project Setting

Figure 50 presents the location of the Project with reference to the assessment locations considered in the AQIA. Table 44 identifies each of the assessment locations.

The assessment locations include residential and a childcare centre, which may have sensitive individuals present for periods of time over which the NSW EPA impact assessment criteria apply.

Places where people work such as the industrial receptors, would only have healthy adults present who are unlikely to reside for more than 24-hours (based on typical working hours), thus the NSW EPA impact assessment criteria are not considered applicable. Similarly, with churches and commercial receptors, people would visit infrequently and only be present for a short period of time and hence the criteria would also not specifically apply.

The industrial receptors are governed by the workplace air quality standards which are many times higher than the NSW EPA impact assessment and are directly applicable to the places where people may work. The workplace criteria are set at suitable levels to manage the health of adult workers present at the industrial receptors and compliance with such criteria would not tangibly be affected by the Project.

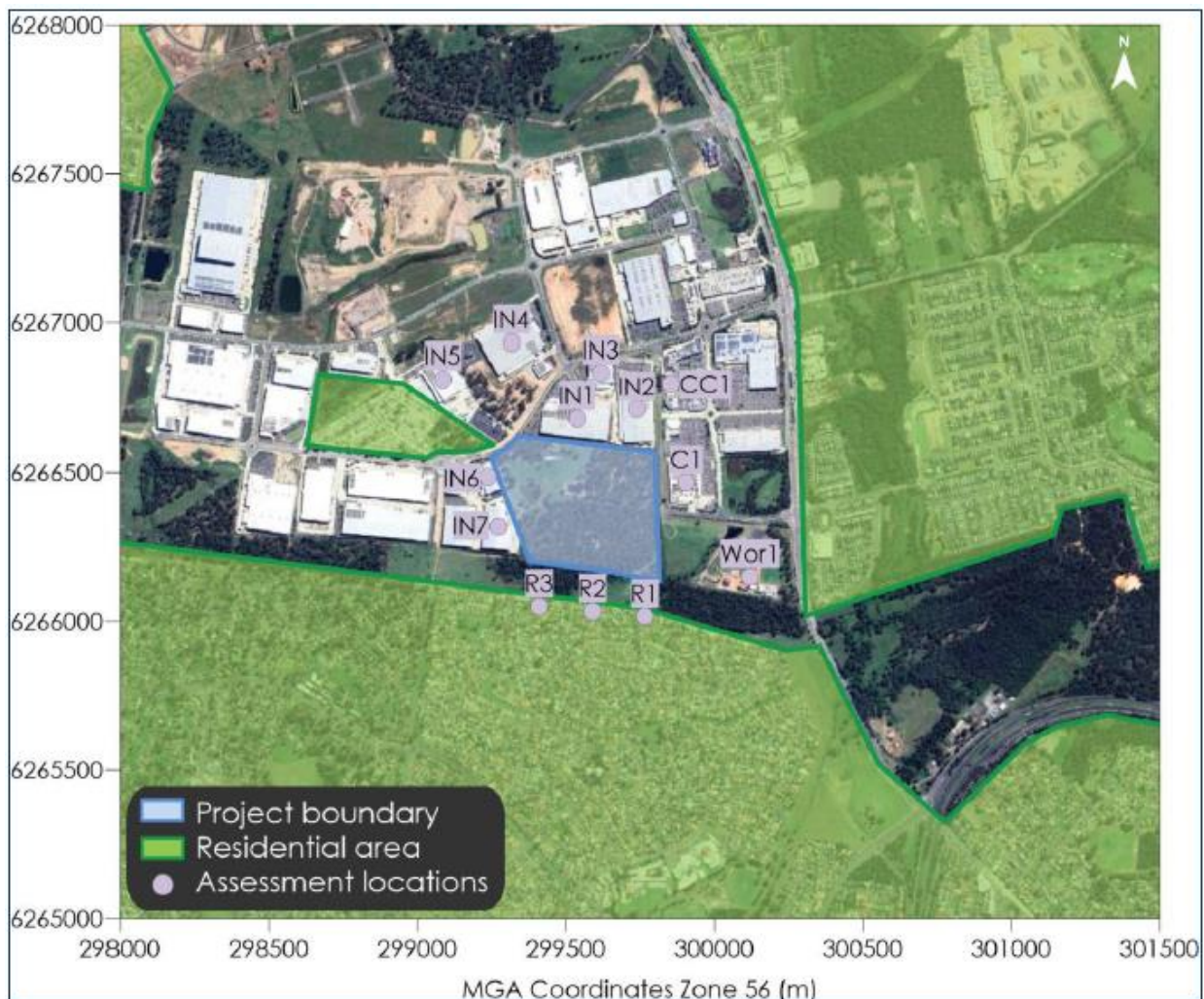


Figure 50: Project Setting

Source: Air Quality Impact Assessment – Todoroski

Table 44. AQIA Assessment locations

Assessment ID	Easting (m)	Northing (m)	Description
IN1	299537	6266684	Industrial
IN2	299739	6266714	Industrial
IN3	299618	6266833	Industrial
IN4	299317	6266935	Industrial
IN5	299085	6266814	Industrial
IN6	299238	6266486	Industrial
IN7	299272	6266318	Industrial
C1	299906	6266468	Commercial
CC1	299853	6266800	Childcare centre
Wor1	300120	6266151	Place of worship
R1	299766	6266017	Residential
R2	299589	6266035	Residential
R3	299410	6266051	Residential
IN = industrial, C = commercial, CC = childcare, Wor = place of worship & R = residential.			
Source: Table 2-1 Air Quality Impact Assessment, Todoroski			

6.8.2 Operational Phase Impacts

The emergency back-up generator exhaust stacks have been consolidated so that four (4) generators share a single (1) flue stack, resulting in 10 generator point sources per building (40 generators per building, 4 generators per point source). The parameters for the modelled point sources are outlined in Table 45 with their locations shown in Figure 51.

Table 45. Modelled stack parameters for the Project

Stack	Stack height (m)	Stack diameter (m)	Exit temperature (K)	Exit velocity (m/s)	Stage 1 (# gens)	Stage 2 (# gens)	Stage 3 (# gens)	Stage 4 (# gens)
Diesel generator	30	1.2	673	36.1	4	72 (8 redundant)	144 (16 redundant)	216 (24 redundant)
Source: Table 8-2 Air Quality Impact Assessment, Todoroski								

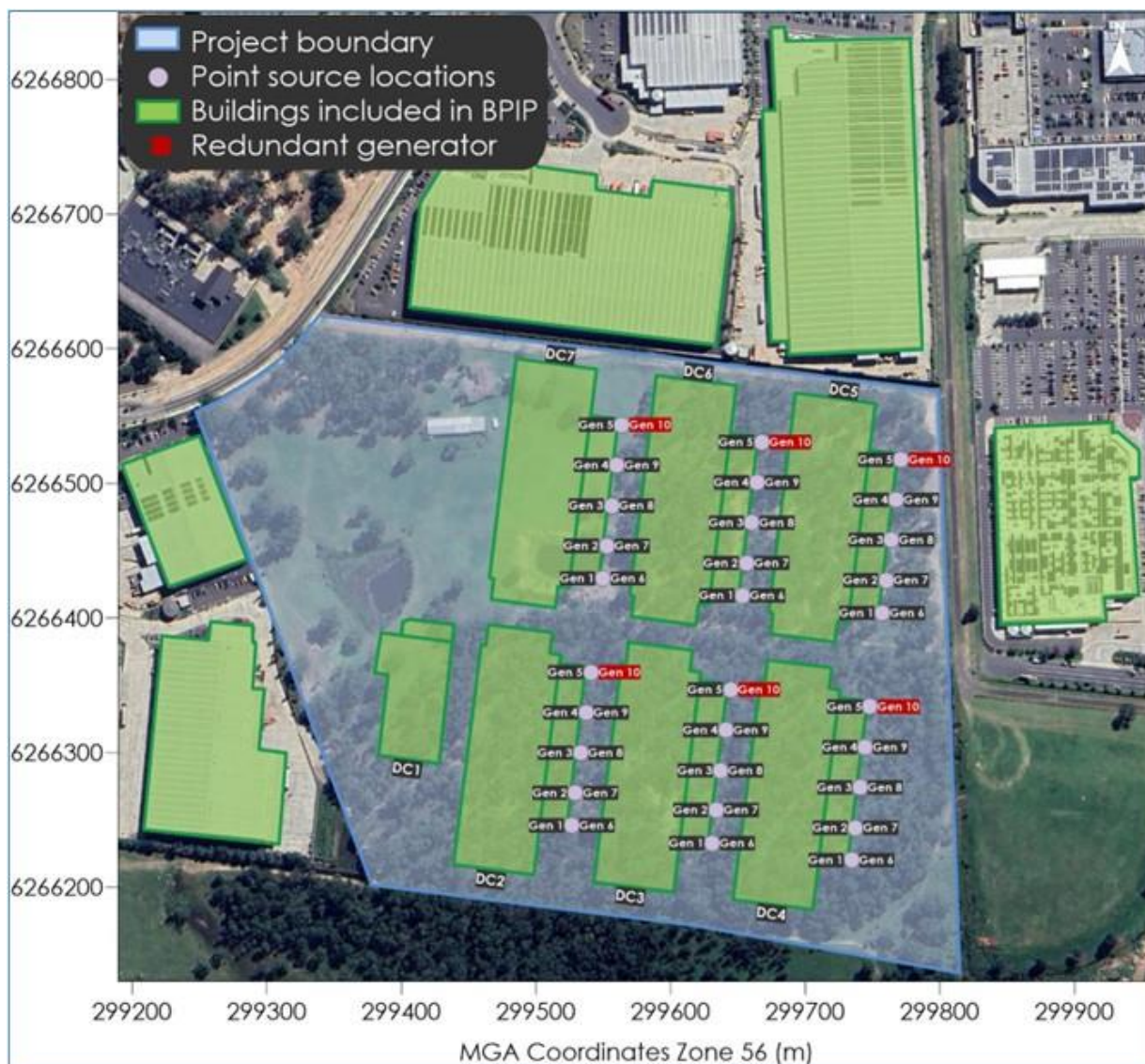


Figure 51: Modelled sources

Source: Air Quality Impact Assessment – Todoroski

The emissions data for the emergency back-up generators at the Project are based on emission datasheets for the proposed engines. The prime rating power (PRP) for each of the engines at varying loads have been used to estimate the emissions of oxides of nitrogen (NO_x) and particulate matter (as PM_{10}). Table 46 presents the emissions data for the Project.

Table 46. Emergency back-up generator emission data for the Project

Parameter	100% PRP	75% PRP	50% PRP	25% PRP
Power (kW)	3,307	2,480	1,653	827
PM_{10} (g/kWh)	0.03	0.046	0.147	0.266
NO_x (g/kWh)	8.7	7.8	6.4	6.9
PM_{10} (g/s)	0.028	0.032	0.067	0.061
NO_x (g/s)	8.0	5.4	2.9	1.6

Source: Table 8-3 Air Quality Impact Assessment, Todoroski

MODELLING SCENARIOS

Operational phase air quality impacts have been assessed using an approved computational dispersion modelling methodology, performed in accordance with the current guidance published by NSW EPA.

Air dispersion modelling was used to predict the potential for off-site air impacts due to the operation of emergency back-up generators. These emergency back-up generators would only operate in the event of a mains power interruption which would occur infrequently and are expected to only operate for a brief period of time.

The most potentially impacting stage of the development is Stage 4, which is assessed in detail below as a worst-case scenario. Modelling predictions for the other stages of the Project (Stages 1-3) are presented in Appendix C of the AQIA provided at **Appendix 11**.

The assessment has considered two scenarios:

- **Scenario 1 – Justified Worst Case Scenario** The justified worst-case emissions of 216 emergency back-up generators operating at the 50% prime rating power (PRP) load in the event of catastrophic power supply failure; and
- **Scenario 2 – Realistic Operations (Routine Maintenance Testing)** A realistic scenario associated with the planned and controlled testing of the generators on a monthly and annual testing schedule.

SCENARIO 1 – JUSTIFIED WORST CASE SCENARIO

Scenario 1 is a worst-case scenario representing operations during a mains power failure event, namely the emergency operation of 216 emergency back-up generators at 50% PRP coinciding with worst-case meteorological conditions.

In the unlikely event of a power interruption or emergency, 36 of the 40 generators (per building) are designed to be operational with the remaining four (4) generators designated to serve as redundant engines. Assuming that only 36 generators per building will be running during an emergency situation, this results in a total of 216 generators across all six (6) buildings on the site.

As shown in Figure 51, Generator 10 is located furthest away from the residential areas and has been selected as the redundant generator stack set to be excluded from the modelling.

Mains power interruption events are relatively infrequent with an expected likelihood of occurrence once (1) every two (2) years. According to the *Endeavour Energy Distribution Annual Planning Report* (Endeavour Energy, 2023) the average duration of a power outage is approximately 60.1 minutes, or about 1 hour. The likelihood of this occurring is 0.006% representing (one (1) hourly event every two (2) years).

Dispersion modelling results

The spatial distribution of the dispersion modelling predictions for Scenario 1 are presented in Figure 52, Figure 53 and Figure 54 respectively.

The modelling predictions represent a worst-case scenario resulting from a power failure occurring over the entire modelling period. However, it is important to note that the modelling predictions assume the generators at the Project are operating for a continuous 24-hour period full a complete year (365 days) which is highly unlikely to occur.

Annual average NO₂, PM₁₀ and PM_{2.5} concentrations have not been assessed within the AQIA as the generators would not operate on an annual basis and as such the NSW EPA impact assessment criteria are not considered to be applicable.

Table 47 presents the predicted incremental and cumulative pollutant dispersion modelling results at each of the assessed receptor locations due to the operation of the Project.

Table 47. Dispersion modelling results for assessment locations ($\mu\text{g}/\text{m}^3$) – Operational scenario

Receptor ID	PM2.5	PM ₁₀	PM2.5	PM ₁₀	NO ₂ (worst case scenario)	NO ₂ (probabilistic scenario)
	Incremental		Cumulative			
	24-hr ave.	24-hr ave.	24-hr ave.	24-hr ave.	1 hr ave.	
	Air quality impact criteria					
	-	-	25	50	164	
IN1	54.1	58.8	75.6	106.8	1162.0	146.4
IN2	43.9	47.8	65.4	95.8	998.5	133.7
IN3	33.1	36.0	54.6	84.0	718.9	110.3
IN4	23.3	25.3	44.8	73.3	458.6	70.1
IN5	16.2	17.6	37.7	65.6	434.4	61.9
IN6	28.3	30.7	49.8	78.7	697.7	77.8
IN7	27.9	30.3	49.4	78.3	923.8	86.4
C1	29.0	31.5	50.5	79.5	1443.3	89.6
CC1	29.0	31.5	50.5	79.5	740.2	97.8
Wor1	12.8	13.9	34.3	61.9	758.3	59.2
R1	17.5	19.1	39.0	67.1	933.2	79.1
R2	23.4	25.4	44.9	73.4	1148.8	88.6
R3	23.9	26.0	45.4	74.0	1047.7	83.4

Source: Table 9-1 Air Quality Impact Assessment, Todoroski

PM₁₀ and PM_{2.5}

The modelling predictions for particulate matter (Figure 52 and Figure 53) indicate maximum 24-hour average levels of approximately $30\mu\text{g}/\text{m}^3$ would encroach on the residential area to the south of the Project site. Applying this to the estimated background levels for the Project (Table 42) the predicted cumulative levels of PM_{2.5} and PM₁₀ would be above the respective NSW EPA impact assessment criteria of $25\mu\text{g}/\text{m}^3$ and $50\mu\text{g}/\text{m}^3$ respectively.

As previously discussed, the likelihood of this scenario occurring is expected to be very rare. Further, it should be noted that exceedances of the impact assessment criteria for 24-hour average concentrations of PM_{2.5} and PM₁₀ coincide with the worst-case meteorological conditions throughout the typical year. This means for these exceedances to be realised, this scenario would need to occur in conjunction with unfavourable meteorological conditions which again is unlikely.

It is also unlikely that a single emergency event would occur continuously for a whole 24-hour period. On this basis, predicted exceedances of the PM_{2.5} and PM₁₀ 24-hour average impact assessment criteria from the operation of the generators are an absolute worst case

and are expected to be at low risk of occurrence during an emergency scenario.

Nitrogen Dioxide (NO₂)

The cumulative NO₂ modelling predictions (Figure 54) indicate that the predicted levels at the residential areas to the south and east would be above the NSW EPA impact assessment criterion of 164µg/m³.

This scenario assumes continuous operation of the generators throughout the entire modelling year, which is highly improbable. The actual likelihood of experiencing such a worst-case scenario is very low. The likelihood of a mains power interruption event occurring is 0.006% representing (one (1) hourly event every two (2) years) for an average time of 60.1 minutes.

Isopleths for this scenario are presented in Figure 55, and shows concentrations based on power outages occurring for one hour within a two-year period. Applying this analysis, the modelling predictions demonstrate that impact levels would be below the relevant NSW EPA impact assessment criteria at all potentially affected sensitive receptors.



Figure 52: Scenario 1 Predicted incremental 24hr average PM_{2.5} concentrations (µg/m³)
Source: Air Quality Impact Assessment – Todoroski



Figure 53: Scenario 1 Predicted incremental 24hr average PM₁₀ concentrations (µg/m³)
Source: Air Quality Impact Assessment – Todoroski

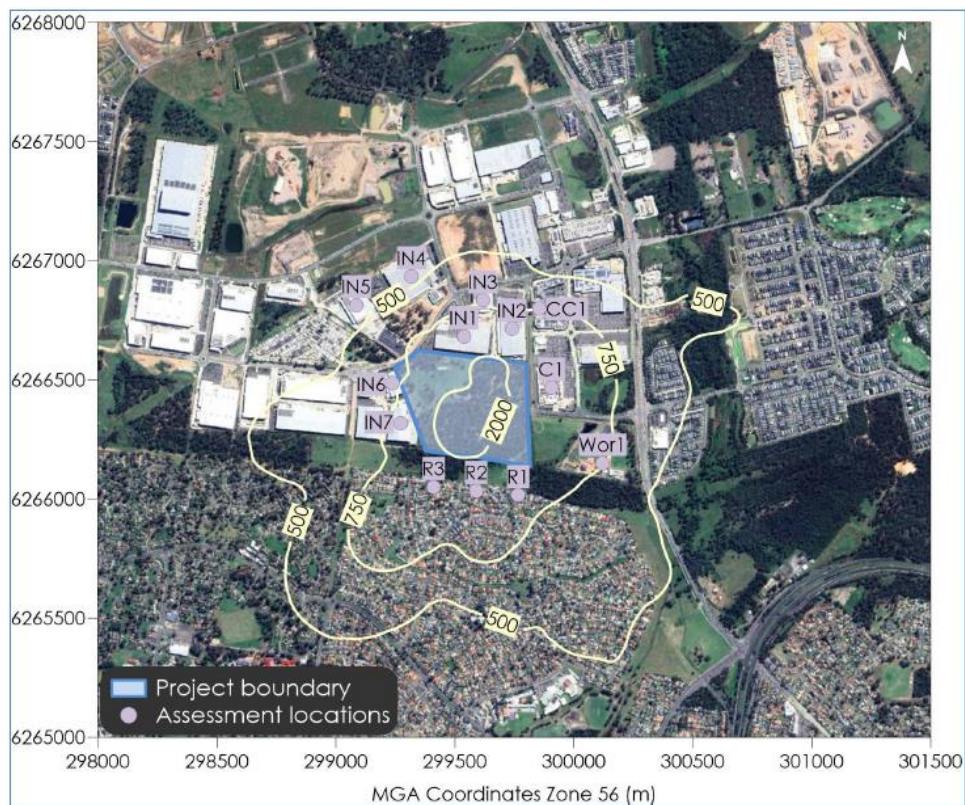


Figure 54: Scenario 1 Predicted cumulative 1hr average NO₂ concentrations (µg/m³)
Source: Air Quality Impact Assessment – Todoroski

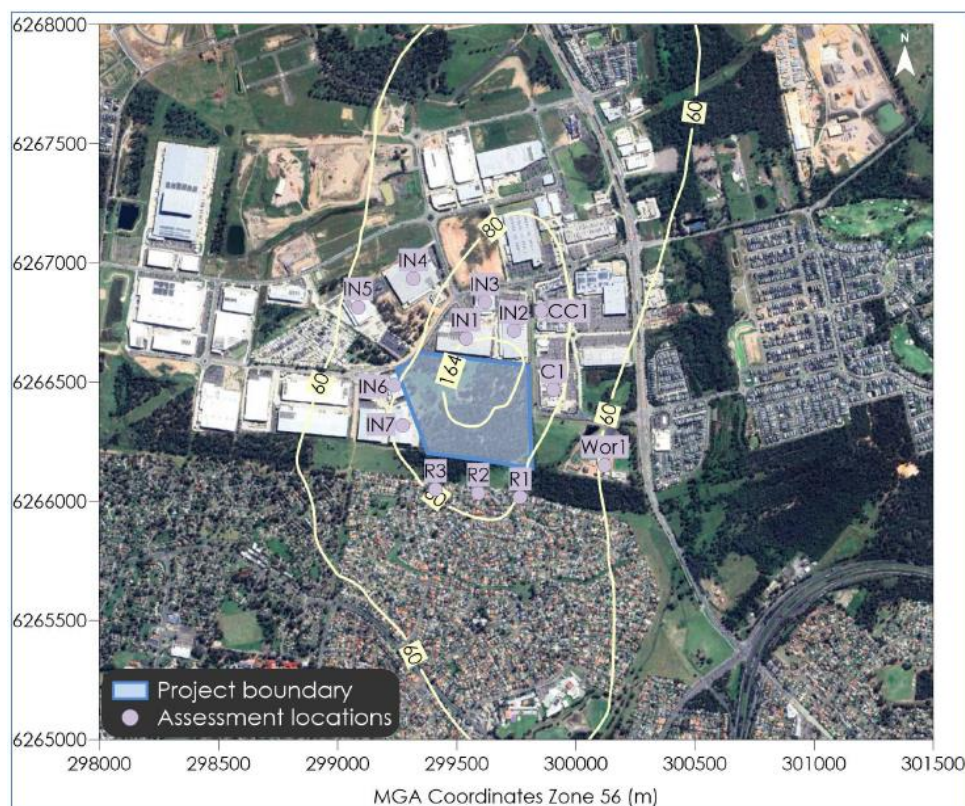


Figure 55: Probabilistic scenario predicted cumulative 1hr average NO₂ concentrations due to emissions from the Project (µg/m³)
Source: Air Quality Impact Assessment – Todoroski

SCENARIO 2 – REALISTIC OPERATIONS (ROUTINE MAINTENANCE TESTING)

Scenario 2 is based on the realistic operations of all generators for routine maintenance which is as follows:

- **Annual testing** – 2 generators operating at a time on load for up to 1 hour each (cumulative 120 hours testing time); and
- **Monthly testing** – up to 10 generators operating at a time at 25% load for up to 15 minutes (cumulative 72 hours testing time).

Generators are expected to operate for 192 hours a year and would be limited to the hours of 9:00am to 4:00pm. By avoiding early morning and late evening hours, the potential for pollutants to accumulate near the ground is minimised (i.e. avoiding inversions and periods of poor dispersion), reducing the impact on nearby sensitive receptors and within the receiving environment.

Dispersion modelling results

Table 48 and Table 49 present the predicted incremental and cumulative pollutant dispersion modelling results at each of the assessed receptor locations for the annual and monthly generator testing routines, respectively.

Table 48. Dispersion modelling results for assessment locations (µg/m ³) – annual testing scenario					
Receptor ID	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	NO ₂
	Incremental		Cumulative		
	24-hr ave.	24-hr ave.	24-hr ave.	24-hr ave.	1 hr ave.
	Air quality impact criteria				
	-	-	25	50	164
IN1	<0.1	0.1	21.6	48.1	108.7
IN2	<0.1	<0.1	21.6	48.1	112.7
IN3	<0.1	<0.1	21.6	48.1	108.7
IN4	<0.1	<0.1	21.5	48.0	108.7
IN5	<0.1	<0.1	21.5	48.0	108.7
IN6	<0.1	<0.1	21.6	48.1	117.1
IN7	<0.1	<0.1	21.6	48.1	133.6
C1	<0.1	<0.1	21.6	48.1	118.1
CC1	<0.1	<0.1	21.6	48.1	109.1
Wor1	<0.1	<0.1	21.5	48.0	108.7
R1	<0.1	<0.1	21.5	48.1	115.9
R2	<0.1	<0.1	21.6	48.1	117.3
R3	<0.1	<0.1	21.5	48.0	115.6
Source: Table 9-2 Air Quality Impact Assessment, Todoroski					

Table 48. Dispersion modelling results for assessment locations ($\mu\text{g}/\text{m}^3$) – annual testing scenario

Receptor ID	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	NO ₂
	Incremental		Cumulative		
	24-hr ave.	24-hr ave.	24-hr ave.	24-hr ave.	1 hr ave.
	Air quality impact criteria				
	-	-	25	50	164

Table 49. Dispersion modelling results for assessment locations ($\mu\text{g}/\text{m}^3$) – monthly testing scenario

Receptor ID	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	NO ₂
	Incremental		Cumulative		
	24-hr ave.	24-hr ave.	24-hr ave.	24-hr ave.	1 hr ave.
	Air quality impact criteria				
	-	-	25	50	164
IN1	1.1	1.2	22.6	49.2	117.3
IN2	0.8	0.8	22.3	48.8	114.9
IN3	0.6	0.7	22.1	48.7	109.0
IN4	0.4	0.5	21.9	48.5	108.7
IN5	0.3	0.4	21.8	48.4	108.6
IN6	0.8	0.9	22.3	48.9	116.3
IN7	0.8	0.9	22.3	48.9	124.5
C1	0.7	0.7	22.2	48.7	113.4
CC1	0.5	0.6	22.0	48.6	109.6
Wor1	0.3	0.4	21.8	48.4	108.7
R1	0.5	0.5	22.0	48.5	113.7
R2	0.5	0.6	22.0	48.6	116.4
R3	0.4	0.5	21.9	48.5	115.2

Source: Table 9-3 Air Quality Impact Assessment, Todoroski

PM₁₀ and PM_{2.5}

The modelling predictions for particulate matter (PM_{2.5} and PM₁₀) indicate maximum 24-hour average levels of between approximately 0.05 $\mu\text{g}/\text{m}^3$ to 0.2 $\mu\text{g}/\text{m}^3$ would encroach on the residential area to the south of the Project site for the annual (Figure 56 and Figure 58) and monthly scenarios (Figure 57 and Figure 59).

When considering the background levels in Table 42 added to the predicted values from the Project, the total particulate matter levels would be **below** the NSW EPA impact assessment criteria of 25 $\mu\text{g}/\text{m}^3$ for PM_{2.5} and 50 $\mu\text{g}/\text{m}^3$ for PM₁₀.

Nitrogen Dioxide (NO₂)

The modelling predictions for cumulative NO₂ concentrations indicate that the predicted levels would be **below** the NSW EPA impact assessment criterion of 164µg/m³ for the annual and monthly scenarios (Figure 60 and Figure 61). It should be noted that these scenarios assume continuous operation of the generators for testing between 9:00am to 4:00pm throughout the entire modelling year, which is unlikely to occur, and therefore, in reality, potential impacts from the generator testing regime will be lower.



Figure 56: Scenario 2 Predicted incremental 24-hour average PM_{2.5} concentrations due to emissions from annual testing (µg/m³)

Source: Air Quality Impact Assessment – Todoroski

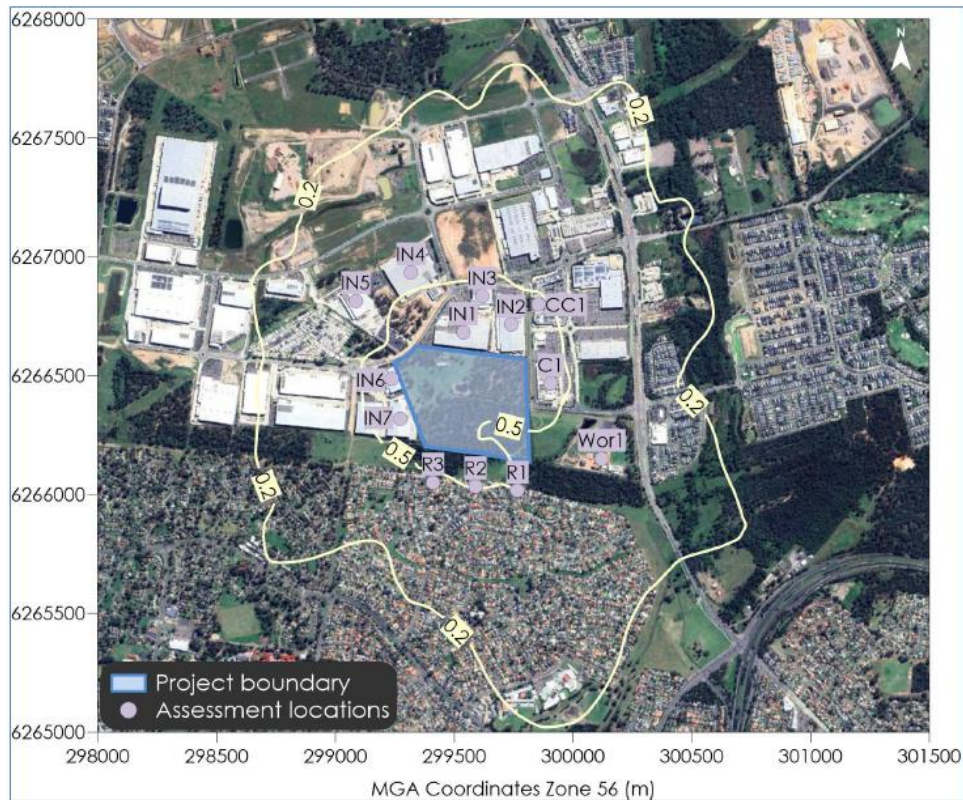


Figure 57: Scenario 2 Predicted incremental 24-hour average PM_{2.5} concentrations due to emissions from monthly testing (µg/m³)

Source: Air Quality Impact Assessment – Todoroski



Figure 58: Scenario 2 Predicted incremental 24-hour average PM₁₀ concentrations due to emissions from annual testing (µg/m³)

Source: Air Quality Impact Assessment – Todoroski

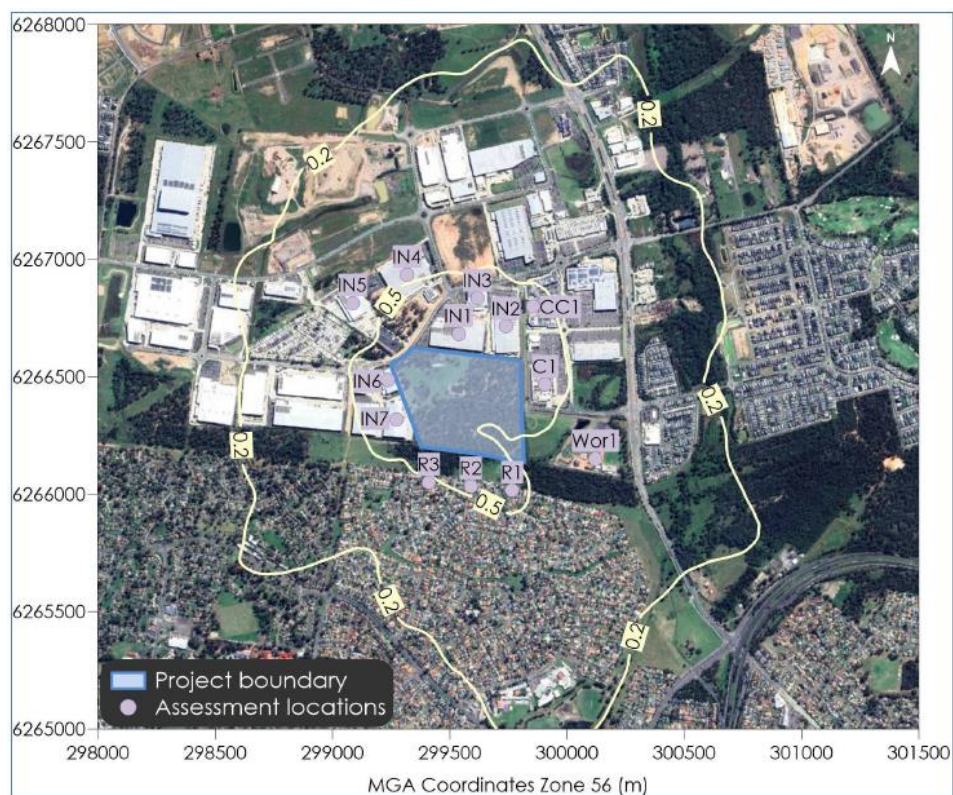


Figure 59: Scenario 2 Predicted incremental 24-hour average PM₁₀ concentrations due to emissions from monthly testing (µg/m³)

Source: Air Quality Impact Assessment – Todoroski



Figure 60: Scenario 2 Predicted cumulative 1-hour average NO₂ concentrations due to emissions from annual testing ($\mu\text{g}/\text{m}^3$)

Source: Air Quality Impact Assessment – Todoroski

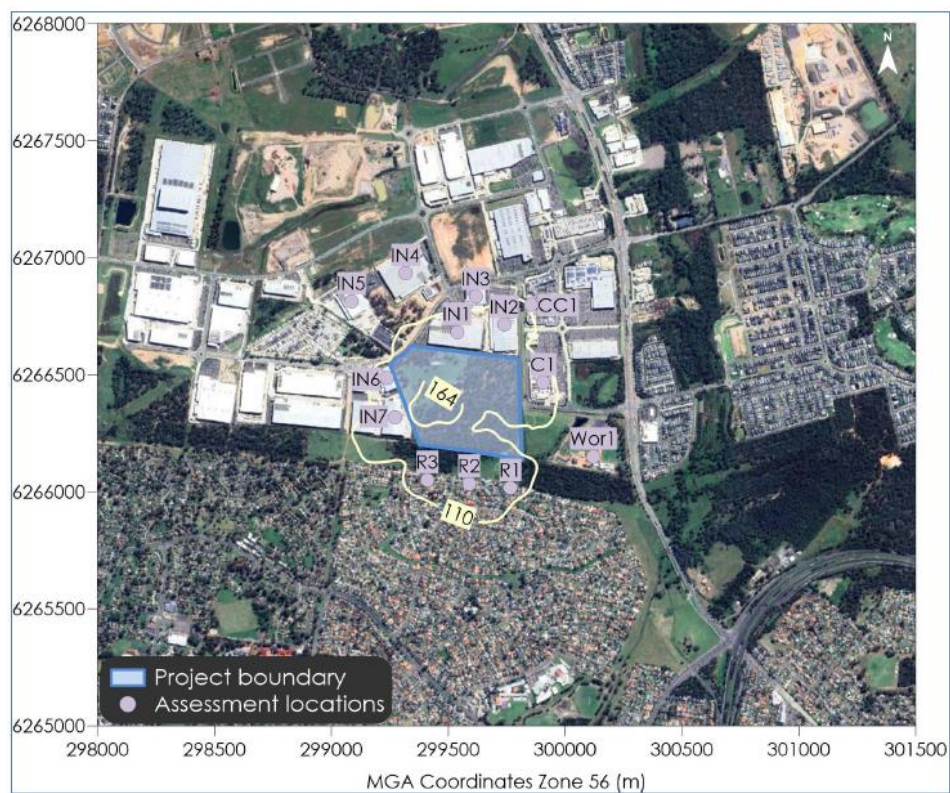


Figure 61: Scenario 2 Predicted cumulative 1-hour average NO₂ concentrations due to emissions from monthly testing ($\mu\text{g}/\text{m}^3$)

Source: Air Quality Impact Assessment – Todoroski

SUMMARY

Under a worst-case scenario (Scenario 1) the predicted ground level concentrations at the nearby residential area to the south would be **above** the relevant NSW EPA impact assessment criteria for the assessed pollutants (NO₂, PM₁₀ and PM_{2.5}). However, the modelling assumes that generators operate continuously over the duration of the modelling period (i.e. in every hour of the year) which is not a likely outcome. The actual likelihood of such an event occurring is just once every two years and the likelihood that the worst-case air dispersion conditions would coincide with such an event is even lower.

As a result, a probability analysis for the likelihood of an exceedance occurring in conjunction with the expected duration of an outage has been presented within the AQIA. The modelling predictions for this probabilistic scenario indicate levels would be below the applicable NSW EPA impact assessment criteria at all potentially affected sensitive receptors.

Under a realistic operating scenario (Scenario 2) that reflects maintenance requirements on both annual and monthly schedules, the predicted ground-level concentrations of pollutants (NO₂, PM₁₀ and PM_{2.5}) in the adjacent residential area to the south are within the acceptable impact assessment criteria set by the NSW EPA for the pollutants under evaluation.

All feasible and effective best practice mitigation measures for the Project have been rigorously assessed to minimise emission impacts to the greatest extent practicable. This included consolidating the four (4) exhaust stacks into a single (1) flue stack to improve emissions and reduce environmental impacts on nearby sensitive receptors and the surrounding area. This configuration allows for increased diameter and greater stack height, extending above the datacentre roofline to reduce building wake effects and improve ground-level concentrations offsite. Nevertheless, additional management measures are recommended to further mitigate impacts as far as reasonably and feasibly practicable as detailed in Section 6.8.4 below.

6.8.3 Construction Phase Impacts

In the AQIA, Todorksi note that construction activities associated with the project have the potential to generate some dust emissions primarily generated from the handling of material, vehicle movements, exhaust emissions from diesel powered equipment and windblown dust generated from exposed areas. The potential impact due to these activities is difficult to accurately quantify on any given day due to the temporary and sporadic nature of these activities and the short term and variable location of any one activity during the construction phase.

The potential dust emissions generated during the construction phase are expected to be minimal and controllable using standard methods, and as such have been assessed using a qualitative approach in accordance with the Air Quality Management (IAQM) document *Guidance on the assessment of dust from demolition and construction* (IAQM, 2024) (IAQM guidance methodology).

The AQIA provides a risk-based assessment of the potential dust effects due to specific construction activities is determined by the scale and nature of the works, the proximity to receptors to identify the likelihood of an impact arising and the magnitude of specific mitigation required to ensure impacts are managed effectively. The risk of dust impact for the construction activity is summarised in Table 50.

However, given the size of the site, the distance to sensitive receivers, and the activities to be performed, residual impacts associated with dust from the Proposal would be anticipated to be negligible should the mitigation measures be implemented appropriately. The relevant mitigation measures are detailed in Section 6.8.4 below.

Table 50. Summary of dust risk to define site-specific mitigation		
Potential impact	Construction Risk	Trackout Risk
Dust soiling	Low Risk	Low Risk
Human health	Low Risk	Low Risk
Ecological	Low Risk	Low Risk
<i>Source: Table 7-3 Air Quality Impact Assessment, Todoroski</i>		

6.8.4 Recommended Mitigation Measures

The following represents the mitigation measures recommended by Todoroski in the AQIA to mitigate against, monitor and manage any potential adverse air quality impacts described in Section 6.8.1 and Section 6.8.3.

Recommended Operational Air Quality Mitigation Measures

All feasible and effective best practice mitigation measures for the Project have been thoroughly evaluated to minimise emission impacts to the greatest extent practicable.

This included a comprehensive review of the stack design, including factors such as height, diameter, and configuration. The original design was extensively changed several times after modelling to reduce the environmental impact of the standard design. The changes resulted in more than halving of the potential impacts of the project. Changes included the clustering of four exhaust stacks into effectively a single flue stack to improve the dispersion efficiency of the stacks and to mitigate the environmental impact in the surrounding area. This modifications also effectively mitigate potential building wake effects and overall greatly reduce potential ground-level concentrations offsite.

The following management measures are recommended to further reduce impacts as far as reasonably and feasibly practicable:

- Restrict testing and maintenance activities during peak-hour travel times and on poor (or worse) Air Quality Index (AQI) days;
- Require documentation of how many hours spent for emergency operation;
- Use high-quality, low-sulfur diesel fuel to reduce emissions;
- Manage generator loads to minimise peak emissions. Implement load management strategies to balance the demand on the generators and reduce overall emissions;
- Install and maintain diesel exhaust aftertreatment controls in reducing gas emissions;
- Implement a regular maintenance and inspection schedule to ensure that all emission control systems are functioning correctly;
- Establish protocols for cleaning and servicing the stack to maintain their effectiveness; and
- Develop contingency plans for potential issues, such as exhaust stack malfunctions or excessive emissions. Ensure these plans include immediate actions to minimise environmental and health impacts.

Recommended Construction Air Quality Mitigation Measures

Table 51 outlines the air quality mitigation and management measures recommended for the site which should be included in the Construction Environmental Management Plan (CEMP) as a specific Construction Dust Management Plan (DMP).

Table 51. Summary of potential mitigation measures during construction phase

Activity	Mitigation measure
Communications	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
	Display the head or regional office contact information.
Dust management	Develop and implement a Construction Dust Management Plan (DMP).
Site Management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
	Make the complaints log available to the local authority when asked.
	Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.
Monitoring	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked.
	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked
	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
	Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the relevant authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences.
Site layout	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
	Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
	Avoid site runoff of water or mud.
	Keep site fencing, barriers and scaffolding clean using wet methods.
	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on-site. If they are being re-used on-site cover as described below.
	Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicle/ machinery and sustainable travel	Ensure all vehicles switch off engines when stationary - no idling vehicles.
	Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.
	Impose and signpost a maximum-speed-limit of 25km/h on surfaced and 15km/h on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).

Table 51. Summary of potential mitigation measures during construction phase	
Activity	Mitigation measure
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
	Use enclosed chutes and conveyors and covered skips.
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste management	Do not burn waste materials.
Construction	Avoid scabbling (roughening of concrete surfaces) if possible.
	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
Trackout	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
	Avoid dry sweeping of large areas.
	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
	Record all inspections of haul routes and any subsequent action in a site log book.
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable.

6.9 Traffic and Transport

A Transport Impact Assessment (TIA) has been prepared by Stantec which support this EIS as **Appendix 33**. The TIA includes a Green Travel Plan (GTP) and Construction Traffic Management Plan (CTMP).

6.9.1 Existing Environment

The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections have been analysed by Stantec using a computer-based modelling package that calculates intersection performance (SIDRA Intersection Version: 9.1.1.200 (SIDRA)). SIDRA determines the average delay that vehicles encounter expressed in seconds per vehicle and measures a "level of service" (LoS).

The TIA identified three (3) key intersections near the proposed development for assessment, namely:

1. **Hollinsworth Road/ Richmond Road/ Townson Road signalised intersection:** This intersection is a signal-controlled intersection located to the northeast of the site. The intersection is the primary entrance to the Marsden Park Industrial Precinct as indicated by the significant volume of traffic that passes through the intersection.
2. **Hollinsworth Road/ Chifley Glade/ Bells Glade (roundabout):** This roundabout is located to the northeast of the site. The north and south legs of the intersection provide access to several shopping centres and other retail developments on either side of Hollinsworth Road.
3. **Hollinsworth Road (roundabout):** This intersection is located to the southwest of the site. The south leg of the roundabout is currently closed such that only through and U-turn movements are present at the roundabout. This roundabout has been included in the analysis since traffic from the proposed development is anticipated to take a U-turn at this roundabout when exiting due to the turn restrictions at the access.

The above intersections were considered based on their proximity to the proposed development and the potential routes that the site-generated traffic will utilise.

For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, outlined in Table 52.

Table 53 presents a summary of the existing operation of the surveyed intersections, with full results presented in the TIA provided as **Appendix 33** of this EIS.

Table 52. SIDRA Level of Service Criteria (LOS)

LOS	Average Delay (secs/vehicle)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control modes
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Source: Table 2.2 Traffic Impact Assessment, Stantec

Table 53. Summary of Intersection Existing Operating Conditions

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (secs/vehicle)	95th Percentile Queue (m)	LOS
Hollinsworth Road/ Richmond Road/ Townson Road (signalized intersection)	Thursday AM	0.859	42.5	375.7	D
Hollinsworth Road/ Chifley Glade/ Bells Glade (roundabout)		0.365	7.7	17.3	A
Hollinsworth Road (roundabout)		0.089	4.9	3.9	A

Table 53. Summary of Intersection Existing Operating Conditions

Intersection	Peak	Degree of Saturation (DOS)	Average Delay (secs/vehicle)	95th Percentile Queue (m)	LOS
Hollinsworth Road/ Richmond Road/ Townson Road (signalized intersection)	Thursday PM	0.950	58.8	501.4	E
Hollinsworth Road/ Chifley Glade/ Bells Glade (roundabout)		0.480	8.0	28.3	A
Hollinsworth Road (roundabout)		0.033	6.3	1.1	A

Source: Table 2.3 Traffic Impact Assessment, Stantec

Based on the results outlined in Table 53, analysis of the existing conditions SIDRA model shows:

- The signalised intersection of Hollinsworth Road/Richmond Road/Townson Road is performing near capacity during the AM peak and at capacity during the PM peak. This is mainly caused by the high volume of traffic utilising Richmond Road. This suggests that excessive delays are anticipated at the intersection.
- The two roundabouts on Hollinsworth Road are currently performing at an excellent LOS with negligible delays and short queue lengths.

The above results were used as a benchmark to investigate the impact of the proposed development on the surrounding road network.

6.9.2 Operational Phase Traffic Impacts

A TIA has been prepared by Stantec provided as **Appendix 33** of this EIS. The findings of this report are discussed below.

OPERATIONAL TRAFFIC GENERATION

The TIA (**Appendix 33**) provides estimates for trip rates and trip generation for the proposal based on a 'first principles' assessment approach based on the number of staff/occupants.

Currently, there are no trip generation rates available for a data centre in the TfNSW's *Guide to Traffic Generating Development* (2002). In the absence of any specific trip generation rates for the proposal, reference is made to the previous traffic assessment reports prepared for similar data centres, namely Sirius Road Data Centre and Kemps Creek Data Centre in Sydney. These studies estimated the likely trip generation from their respective data centres using a first principles rule based on the number of staff/occupants.

The proposal would have a total of 279,650sqm GFA which includes 266,020sqm GFA for technical use and 13,630sqm GFA for office use. The main trip-generating component of the proposed development would be the office area with very little traffic to be generated by the remainder.

Stantec have assumed that 50% of the staff would arrive at the site during the AM peak hour and leave the site during the PM peak, in line with the accepted methodology used at other data centre sites. The remaining staff are assumed to arrive and depart the site outside the peak hours. In line with the ABS Census 2016 Method of Travel to Work data (see Section 6.9.3), it is also assumed that about 93% of the staff will travel to work in a car (as driver or passenger).

Based on the above and a maximum indicative staff allowance of 265, the anticipated trip generation from the proposed data centre is provided below in Table 54.

Table 54. Trip Generation Estimation from Proposed Data Centre at Marsden Park			
Period	Trip Generation Estimation		
	In	Out	Total
AM Peak hour (8:00 – 9:00)	133 vehicles	0	133 vehicles
PM Peak hour (17:00 – 18:00)	0	133 vehicles	133 vehicles
Daily movements	266 vehicles	266 vehicles	532 vehicles

Table 54 identifies that the site is anticipated to generate 133 trips during the AM and PM peak periods. The impact of this trip generation on the performance of surrounding intersections is discussed in the following section.

INTERSECTION ANALYSIS

SIDRA analysis was undertaken of the Hollinsworth Road/Richmond Road (signalised intersection) , Hollinsworth Road/ Chifley Glade/ Bells Glade (roundabout) and Hollinsworth Road (roundabout) to determine the existing and proposed traffic conditions. These are summarised in Table 55 and discussed thereafter.

It has been assumed that 15% of the trips comprise heavy vehicles to reflect the existing traffic composition on Hollinsworth Road.

Table 55. SIDRA All Vehicle Results – Level of Service						
Scenario / Period	Richmond Rd / Hollinsworth Rd / Townson Rd Intersection		Hollinsworth Rd/ Chifley Glade/ Bells Glade Roundabout		Hollinsworth Rd Roundabout	
	AM	PM	AM	PM	AM	PM
1 - 2024 Base Scenario	LOS D	LOS E	LOS A	LOS A	LOS A	LOS A
2 - 2026 with Development	LOS E	LOS F	LOS A	LOS B	LOS A	LOS A
3 - 2036 with Development	LOS F	LOS F	LOS A	LOS B	LOS A	LOS A
<i>Source: Table 5.2 Traffic Impact Assessment, Stantec</i>						

Richmond Road / Hollinsworth Road / Townson Road Intersection

The intersection is anticipated to perform poorly in the opening year and future year scenarios. It should be noted that the deterioration is caused by the combined effect of trips generated by the proposed data centre, the proposed cold storage at 125 Hollinsworth Road, and the annual growth of traffic.

In addition, the existing performance of the intersection during peak periods is already at or near capacity such that a slight increase in the traffic volume causes a significant increase in the delays and queues experienced at the intersection. Moreover, Richmond Road is a state road that carries approximately 89,000 vehicles per day, and it experiences heavy congestion and delays. Such a high traffic volume will also affect the performance of the intersection in the future.

TfNSW has recently undertaken early design works for the Richmond Road upgrade between M7 Motorway and Townson Road, including the intersection at Richmond Road/Townson Road/Hollinsworth Road intersection. A number of improvement measures are considered, including increasing the capacity of Richmond Road (from four lanes to six lanes) and a new flyover to connect with the M7 Motorway. It is understood that this is an ongoing project, and a more detailed design is currently being undertaken by TfNSW. This

would require a detailed analysis of the wider area population and employment growth and traffic assessment. As such, any potential intersection upgrades to accommodate the site would likely not be suitable for accommodating future regional traffic.

Hollinsworth Road / Chifley Glade / Bells Glade Intersection

The results show that the performance of the roundabout during the AM peak period is not anticipated to change significantly even in the 2036 future year. However, a noticeable increase in the 95th percentile queue length was noted in the PM peak under Scenario 3. The TIA shows that the west leg is experiencing long queues as a result of the extended queues at the Hollinsworth Road/Richmond Road intersection.

Therefore, the potential intersection upgrades to mitigate the traffic congestion at the Richmond Road signalised intersection is anticipated to also address the performance of the Chifley Glade Roundabout under the 2036 'with development' scenario.

Hollinsworth Road Roundabout

The results show that no issues are anticipated at the Hollinsworth Roundabout, with minimal delays and queues. This translates to a LOS of A or B for all three analysis scenarios.

6.9.3 Parking Requirements

CAR PARKING

As outlined within Section 3.3 of the TIA provided at **Appendix 33**, the suitability of car parking at the site has been assessed with due consideration given to both the requirements of the *Blacktown City Council Growth Centre Precincts Development Control Plan 2010 Amended March 2022* (BDCP 2010) and a 'first principles' assessment being undertaken.

Table 56 identifies that the proposed development will likely generate a statutory parking requirement of 1,734 car parking spaces.

Table 56. Car Parking Rates in DCP 2010 for the IN2 (Light Industrial) Zone			
Land use	GFA (sqm)	Rate	Parking Requirement
Buildings	266,020sqm	1 space per 75sqm GFA up to 7,500sqm	100
		1 space per 200sqm GFA over 7,500sqm	1,293
Office	13,630sqm	1 space per 40sqm GFA	341
Total			1,734

The BDCP 2010 car parking requirements are considered excessive given the data hall, which forms the greatest portion of the site GFA, would simply function as an area for the storage of IT equipment. The resultant car parking requirement would substantially exceed indicative staff numbers provided by the proponent of approximately 165 staff and 100 visitors/contractors.

Thus, a 'first principles' assessment approach has also been used to determine the required parking for the development site.

'First Principles' Assessment

To determine the entire site's car parking requirements, ABS Census 2016 Method of Travel to Work data was used to provide guidance on the baseline number of staff / customers expected to utilise private vehicles, thus generating parking demand. The 2021 Census was conducted during the COVID-19 pandemic and is not considered representative of current baseline activity.

The mode split for car (as driver) and car (as passenger) to Marsden Park is 84.20% and 8.5% respectively.

Table 56 identifies that the proposed development will likely generate a statutory parking requirement of 1,734 car parking spaces. The estimated car parking demand for the development has been calculated as follows:

- Of the estimated 165 staff within the site, approximately 84% will require a parking spot (percentage of car, as driver). This totals to 139 spaces;
- Of the 100 visitors/contractors anticipated to travel to the site, a maximum of 70% will be simultaneously present at the site at any given time. This totals to 70 spaces;
- Combining the parking space requirements for staff and visitors/contractors, up to 209 spaces are estimated to be required to accommodate the parking demand within the site.

As such, it is anticipated that the proposed supply of **265 car parking spaces** is sufficient for the potential car parking demand within the site with a surplus of 56 parking spaces. This surplus represents 41% of the total staff parking requirement of 139 spaces. It is anticipated that sufficient parking spaces will be available during changes in employee shifts where two batches of employees may be present on site simultaneously. All parking spaces will be provided on-site.

Furthermore, a Green Travel Plan (GTP) for the proposed development has been produced in as part of the TIA to support a reduction in parking demand.

ACCESSIBLE PARKING

The DCP 2010 indicates that all developments with more than 50 car parking spaces must provide at least 2% of all spaces allocated to accessible parking. As the development proposes a total of 265 parking bays, the required number of accessible bays is 6. The drawings currently propose **16 accessible bays** throughout the car parks which comply with the requirements.

BICYCLE PARKING

The DCP 2010 indicates that one bicycle locker or other suitable form of secure bicycle accommodation is to be provided for staff every 200sqm of GFA. Based on the proposed area of 279,650sqm, this would require the provision of 1,399 bicycle parking spaces.

This is considered to be excessive for the proposed data centre development since the data hall, which forms the greatest portion of the site GFA, would simply function as an area for the storage of IT equipment.

Thus, a 'first principles' assessment approach has also been used to determine the required bicycle parking for the development site. On the basis of the maximum number of staff on-site at any one time (165 staff) and the current proportion of bicycle trips/mode share for workers within the Marsden Park area (0.3%), only 1 space is estimated to be required to accommodate peak staffing numbers at the site.

To accommodate a potential increase in bicycle parking demand over time, a rate of 1 bicycle bay per 10 car parking spaces has been adopted. Using this rate, the proposed development requires approximately **27 bicycle parking bays**. Sufficient parking will be provided by the development to meet the bicycle parking requirements.

PARKING LAYOUT AND SITE ACCESS

The site will be accessed via a single left-in / left-out driveway on Hollinsworth Road.

As demonstrated in swept path analysis in Figure 62 the access driveway can accommodate all vehicles up to and including 19m Articulated Vehicles (AV). All vehicles can enter and exit the site in a forward direction with independent movements throughout, where necessary.

The site access and circulation have been reviewed against the requirements of the *Australian Standard for Off Street Car Parking* (AS2890 series). It has been noted that the design is generally compliant with the requirements of the AS2890 guidelines. The 19m design truck and NSW Fire Brigade fire truck were noted to be able to manoeuvre the site with no issues, as demonstrated in Figure 63. All B99 vehicles can enter and exit the individual car parks and parking bays within the site.

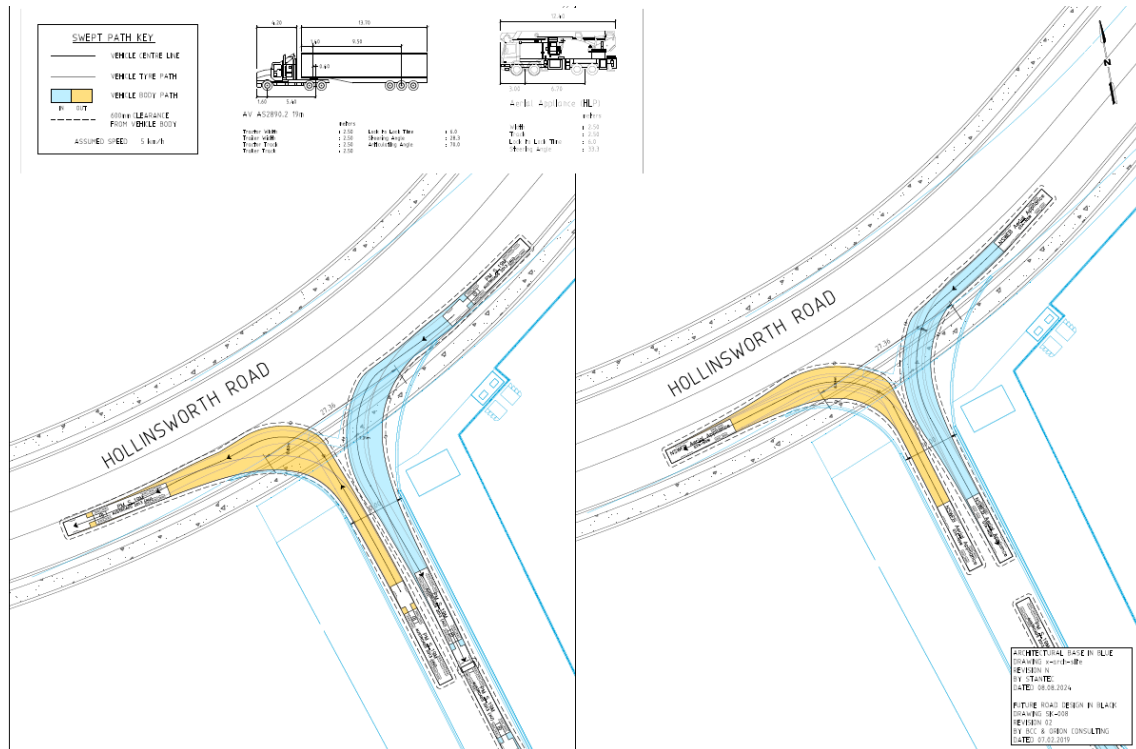


Figure 62: Site Access Swept Path Analysis for 19m Articulated Vehicle and Aerial Appliance (HLP)
Source: Stantec Traffic Impact Assessment

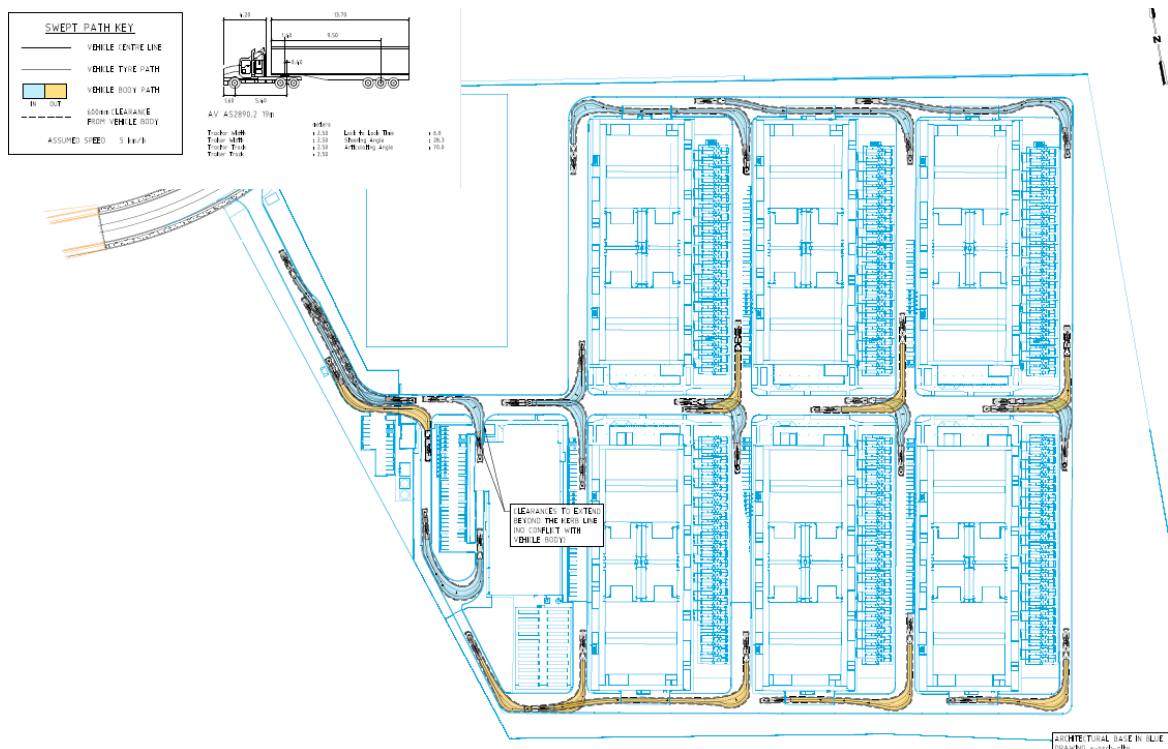


Figure 63: Site Circulation Swept Path Analysis for 19m Articulated Vehicle
Source: Stantec Traffic Impact Assessment

6.9.4 Green Travel Plan

Travel demand management initiatives have been incorporated in the proposal in an effort to encourage a modal shift from single-occupant private vehicle trips, influence the way people move to and from the site, and deliver better environmental outcomes.

A key element of achieving this will be through a Green Travel Plan, which is included within Stantec's Traffic Impact Assessment provided as **Appendix 33** of this EIS. The key objective of developing and implementing the Green Travel Plan is to **encourage the use of more active and sustainable transport modes**. This includes walking, cycling, utilising public transport (buses, trains and light rails), and car sharing in place of the higher energy consumption travel modes such as single occupant car travel and taxi.

It is the intention therefore that the Green Travel Plan will deliver the following benefits:

- Enable higher public and active travel mode share targets to be achieved;
- Contribute to greenhouse gas emission reductions and carbon footprint minimisation;
- Contribute to healthy living for all;
- Contribute to social equity and reduction in social exclusion; and
- Improve knowledge and contribute to learning.

Modal Shift Target

The existing and target mode share for the proposed development is shown in Table 57. Given limited public transport accessibility, the future mode share of the proposed data centre, when operational, is anticipated to be similar to the existing mode share. However, with the implementation of the Green Travel Plan initiatives, including provision for bicycle facilities, it is expected to increase the active and public transport mode share slightly.

The target mode share anticipates an increase of 2% in terms of bus use and an increase of 1% in both cycling and walking. The 'car as driver' mode share is anticipated to be reduced by up to 4% as a result. These mode share targets are based on the anticipated improvement of walking and cycling facilities near the site.

Table 57. Existing and Target Mode Share			
Mode of travel	Existing Mode Share %	Target Mode Share %	Change %
Train	2.0%	2.0%	-
Bus	2.0%	4.0%	+2.0%
Car (as driver)	84.2%	80.2%	-2.0%
Car (as passenger)	8.5%	8.5%	-
Truck	1.2%	1.2%	-
Bicycle	0.4%	1.4%	+1.0%
Walk only	1.2%	2.2%	+1.0%
Other	0.5%	0.5%	-

The location of the site, in terms of its proximity to a wide range of sustainable transport including bus and train services is a key consideration for development in the precinct. A GTP will put in place measures to raise awareness and further influence the travel patterns of people travelling to/ from the site with a view to encouraging modal shift away from cars.

The following potential measures and initiatives could be implemented to encourage more sustainable travel modes:

1. Provide a Travel Access Guide (TAG) which would be provided to all residents and staff and publicly available to all visitors. The document would be based on facilities available at the site and include detail on the surrounding public transport services and active transport initiatives. The TAG would be updated as the surrounding transport environment changes.
2. Providing public transport information boards/apps to inform residents, staff and visitors of alternative transport options (the format of such information boards would be based upon the TAG).
3. Providing a car sharing pod(s) on-site or nearby and promoting the availability of car sharing pods for trips that require the use of private vehicles.
4. Providing bicycle facilities including secure bicycle parking for staff, bicycle racks/ rails for visitors and shower and change room facilities.
5. Encouraging staff that drive to work and park on surrounding roads to carpool through creation of a carpooling club or registry/ forum.
6. Regularly promoting ride/ walk to work days.
7. Providing a regular newsletter to all residents and staff members bringing the latest news on sustainable travel initiatives in the area.

6.9.5 Construction Phase Traffic Impacts

A preliminary Construction Pedestrian and Traffic Management Plan (CPTMP) has been prepared by Stantec and is provided at **Appendix 33**. The CPTMP assesses the traffic, public transport, local access, pedestrian, and parking implications associated with the various stages of construction.

General traffic management principles that will be implemented during construction include:

- Minimise the impact on pedestrian and cyclist movements;
- Maintain appropriate public transport access;
- Minimise the loss of on-street parking;
- Minimise the impact on adjacent and surrounding buildings;
- Maintain access to/ from adjacent buildings;
- Restrict construction vehicle movements to designated routes to/ from the site;
- Manage and control construction vehicle activity near the site; and
- Carry out construction activity in accordance with approved hours of works.

Traffic management and control will be established at all entrances across the project site. Accredited traffic controllers will be positioned at the site access to temporarily hold traffic during construction vehicle movements into/out of the site. Traffic control will ensure that materials and deliveries will not block off roadways and will streamline the truck movements in an out of the project site.

Construction Work Hours

All construction work is proposed to be undertaken consistently with the standard construction hours proposed in Table 9 of this EIS. Construction work will generally be undertaken on a six-day work week, as detailed in Section 3.2.10 of this EIS.

Workers would be advised of the approved work hours during induction. Any works outside of the approved work hours would be subject to specific prior approval from the appropriate authorities. Such works may include delivery of cranes, large plants or equipment required on the site that require oversize vehicle access.

Construction Site Access

Construction vehicle access will be provided via Hollinsworth Road in a similar location to the proposed ultimate site vehicle access location. All construction vehicles will enter and exit the site in a forward direction via Hollinsworth Road.

Access is anticipated to be limited to left in / left out movements due to the proposed median construction along Hollinsworth Road. Due to the turn restrictions, it is anticipated that vehicles will be required to take U-turns at the roundabouts to the east and west of the proposed development.

All loading is expected to take place within the bounds of the site. Should a works zone be required, an application will be made to the relevant authorities prior to the commencement of works.

During construction the site may be accessed by a range of standard vehicles, including but not limited to semi-trailers, truck and dogs, floats, delivery vans, contractor utilities, concrete agitators, and concrete pumps, without requiring any specific permits. Heavy vehicles, such as trucks and semi-trailers, may also be required for equipment and construction material deliveries. Specialized vehicles like excavators, air compressors, bin & skips, and scaffolding may also need to access the site.

Transport Routes

Construction materials and equipment would be delivered from other suburbs throughout Sydney. Construction vehicles will approach the site from various origins throughout Sydney. All construction vehicles will be expected to use the arterial road network where possible and will access the site via Hollinsworth Road. Heavy vehicle movements would be restricted to designated routes and confined to the arterial road network wherever feasible. Truck routes to/ from the site have been identified with the aim of providing the most direct routes to/ from the site as well as minimising the impact of heavy vehicles on local roads. Recommended inbound and outbound transport routes are detailed below and displayed graphically in Figure 64.

Vehicles approaching from the M7 in both directions are to exit onto Richmond Road and continue travelling northbound, before turning left onto Hollinsworth Road and continuing towards the site. Vehicles approaching southerly from Richmond Road will turn right into Hollinsworth Road to reach the site.

Truck drivers will be advised of the designated truck routes to/ from the site.

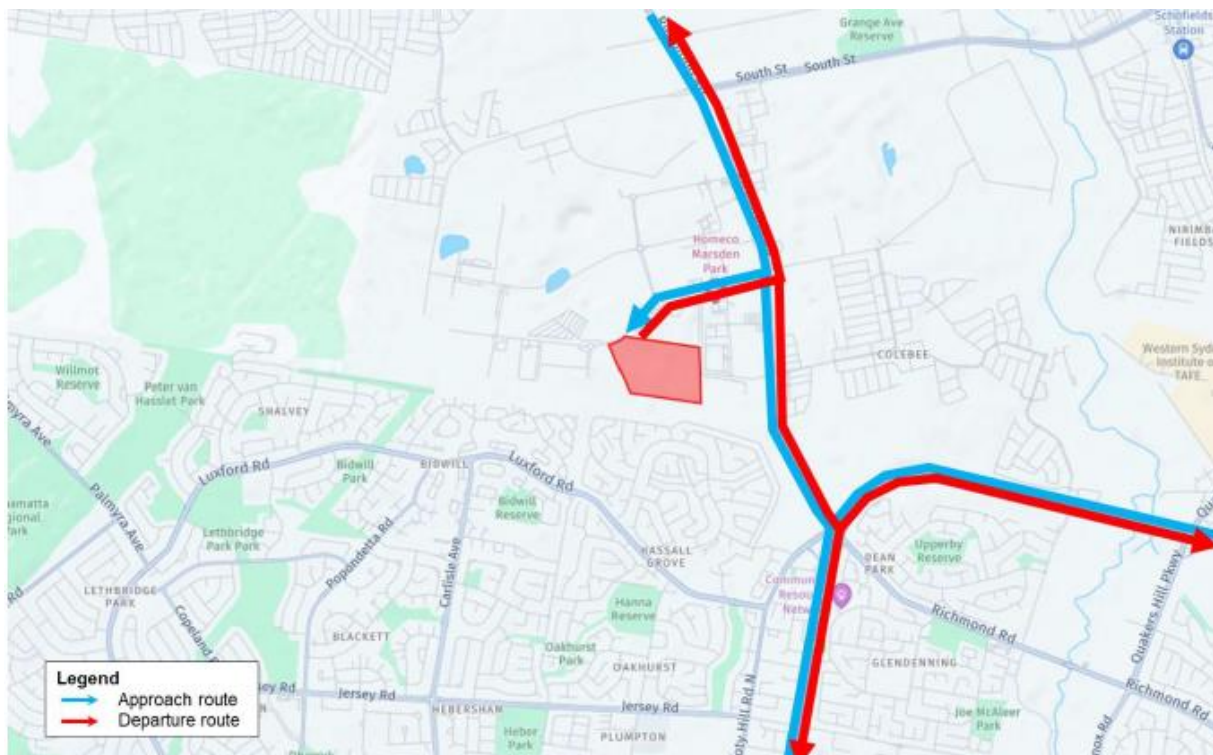


Figure 64: Construction Vehicle Inbound and Outbound Routes
Source: Stantec CPTMP

Construction Worker Parking

The site is anticipated to generate between 20 and 220 workers daily for the duration of works, with a daily average of 150 workers. Based on ABS 2016 statistics for labourers employed in the Riverstone-Marsden Park area, about 67% of workers are anticipated to drive to work. This translates to a peak parking demand of about 148 parking bays. This is considered conservative given that there is potential for car sharing and use of public transport, however, this may be used as a baseline peak parking supply target. Note that the peak parking demand will only occur for two months of the 17-month construction duration, therefore, the parking supply may be adjusted based on the parking demand of the construction stage as necessary.

Locations for construction parking prior to the commencement of construction are to be confirmed as part of the detailed Construction Traffic Management Plan (CTMP) which might be required as a condition of consent. However, since the site is currently vacant and covers a large area, all associated worker parking should be contained on-site within temporary car parking areas.

Construction worker parking will be provided on-site, with workers to be encouraged to take public transportation or carpool to access the site, if possible. Construction workers generally start earlier and finish earlier than the commuter peak periods and would likely not coincide with network peak periods.

Traffic Generation

Construction vehicle movements will be minimised/ avoided during peak hours where possible. Light vehicle traffic generation would be largely generated by construction worker traffic movements to and from the site.

Construction vehicles generated by the site would generally include vehicles up to 12.5-metre heavy rigid trucks, 18.1-metre truck and dog combinations and 19-metre semi-trailers.

Based on similar projects, there is expected to be on average around 15 trucks per day accessing the site, or up to 50 trucks per day during peak activities (concrete pours).

Construction vehicle movements will be minimised/avoided during peak hours where possible.

Light vehicle traffic generation would be largely generated by construction worker traffic movements to and from the site. Parking will be provided on-site, with workers to be encouraged to take public transportation or carpool to access the site, if possible. Based on the average of 150 workers expected within the site and the ABS 2016 statistics of 'car as driver' and 'car as passenger' total of 80%, about 120 light vehicle trips are estimated to be generated daily.

Traffic Impacts

Some minor increase in average delay to vehicles at surrounding key intersections can be expected at times during the construction period as is typical for construction projects. Truck movements will be minimised as much as possible during road network peak hours.

Traffic controllers will be required to temporarily hold traffic during construction vehicle movements into/ out of the site. Considering the low volumes along Hollinsworth Road, this arrangement is considered appropriate.

Pedestrian and Cyclist Access

B-Class hoarding will be installed along the Hollinsworth Road frontage of the site to maintain and ensure safe pedestrian and cyclist passage adjacent to the site particularly when overhead lifting is occurring. A-Class hoarding/fencing will be used along the remaining boundaries of the site.

Overall, it is not expected that pedestrians or cyclists would be impacted by the construction works expect during the public domain works where footpath works may be occurring. Alternative pedestrian routes would be established to divert pedestrians/cyclists to use alternative footpaths on the other side of the road if and as required.

6.10 Contamination, Remediation and Acid Sulphate Soils

As outlined in the Contamination Cover Letter (**Appendix 16**), the site is being remediated under the Early Works DA which was approved by Blacktown City Council on 11 September 2024. The Contamination Cover Letter noted the following with respect to suitability of the site:

- *The investigations undertaken as part of the DSI [Detailed Site investigation] for the broader site, adequately assessed for contamination to a level suitable to support the SSDA.*
- *It is considered that the site is currently unsuitable for the proposed early works as a result of onsite identified contamination, however the site can be made suitable through implementation of a RAP. ... The [RAP] document may require revision and refinement, post-approval, following completion of the data gap investigation, and as the design, bulk earthworks, staging plan and construction methodology advances. However, the remediation approach is not expected to substantially change from that specified.*
- *Contaminated materials that will be disturbed during future site remediation works should be managed in accordance with the RAP and a Construction Environmental Management Plan / Earthworks Management Plan prepared by the remediation contractor.*

Following review of the associated documents for each of the proposed and approved developments (which is contained within **Appendix 16** of the EIS), Stantec considers that contamination onsite has been appropriately considered and following remediation, the site can be made suitable for the proposed land use as a data centre.

As such, there is no further need to consider these matters under this SSDA.

6.11 Flooding Risk

An Integrated Water Management Plan (IWMP) has been prepared by Stantec Australia Pty Ltd and accompanies the EIS at **Appendix 26**. The IWMP addresses requirements of the SEARs.

As demonstrated in Figure 65, the proposed development site is not within a flood affected area and, as such, no flood-related development controls apply to the site. As no upstream catchments discharge onto the development site, the risk of local flooding is restricted to runoff falling on the site. The south-east corner of the site is prone to flooding in the case of a 100-year storm event, making it a flood storage region, this will not be impacted by the development. The design of the site stormwater drainage system will be undertaken to ensure the risk of local flooding is minimised on the site.

As detailed in the IWMP, the proposed developed site has been planned so that surface levels to all existing floodplain areas in the 1% AEP storm are not changed. With new stormwater infrastructure being constructed as part of the development, there will be a reduction of runoff to this southeastern corner of the site.

As no change is occurring within the flood extents and a reduction of runoff is occurring to the existing 1% AEP flood plain, the development will have no negative impacts to flooding conditions downstream of site.

As the extent of flooding on site is within a section of site separated from operations at the proposed development, no management measures will be required, outside of isolation. No Flood Emergency Response plan will be required, as flooding issues on site are not within the operational precinct, and will not prevent ingress or egress out of site in any direction.



Figure 65: Flood Planning Areas
Source: Blacktown City Council DCDB

6.12 Ground and Water Conditions

6.12.1 Groundwater

A Groundwater Impact Assessment has been prepared by Stantec and accompanies this EIS as **Appendix 23**.

The report found that groundwater quality was generally brackish to saline with a slightly acidic pH. Several compounds (trace PFAS and metals) were reported above the adopted criteria, in groundwater and the dams surface water. However, the site was not considered a potential source.

The review and assessment of potentially sensitive groundwater receptors did not identify any environmental or culturally significant groundwater receptors at the proposed development or within 1km of the project boundaries. No registered groundwater supply bores were identified at the proposed development or within 1 km of the project boundaries.

In summary, the assessment found:

- Currently, the Site is considered to pose a low risk to groundwater environmental values.
- Although some deep excavations are proposed (mostly in the north), the development is not anticipated to intercept groundwater. Therefore, groundwater dewatering or the requirement of a water take licence for the proposed development is not anticipated.
- The proposed development during construction and ongoing use is considered to pose a low risk of impact to groundwater environmental values (quantity and quality).
- Potential impact of groundwater on the proposed development is considered a low risk, if appropriate design and construction measures for building material interaction (such as deep foundations) with saline groundwater are implemented.
- No groundwater dewatering management plans are anticipated for the proposed development.

6.12.2 Geotech and Salinity

JK Geotechnics prepared a Geotechnical Investigation (**Appendix 23**), The purpose of the investigation was to obtain geotechnical information on subsurface conditions as a basis for comments and recommendations on earthworks, subgrade preparation, batter slopes, retaining walls, footings, ground slabs and pavement design. The report provides a number of recommendations to be incorporated into the construction phase of the project.

6.13 Water Management

An Infrastructure and Utilities Report (IUR) and an Integrated Water Management Plan (IWMP) have been prepared by Stantec Australia Pty Ltd and accompany this EIS as **Appendix 25** and **Appendix 26** respectively. The IUR provides a summary of the civil engineering and stormwater design for the proposed data centre.

Existing Flow Paths and Catchments

The site grades up from the south-eastern boundary around Langford Drive internally. The bank varies from 2.0m to 1.5m high and will prevent any overland flow from Langford Drive onto the site. The site will not be affected by upstream stormwater catchments.

Existing Stormwater Infrastructure

As discussed in Section 1.1.2 of this EIS, the site is benefitted by a 4.5 metre wide easement to drain water through the culvert structure in Lot 1 DP 1176437 to the east of the site (Baitul Huda Mosque). This easement runs along the eastern boundary and permits the site to connect to the Langford Drive stormwater connection point. The stormwater infrastructure within this easement has been established; no pavement or infrastructure works are expected to be required as part of proposed works to facilitate this. Details of the easement are provided in **Appendix 40** of this EIS.

Outside of a collection inlet pit along the eastern boundary that directs runoff toward the Langford Drive Council inground infrastructure (as per Figure 66), there is no evidence of any formalised drainage infrastructure within the site.

Stormwater runoff is conveyed across the site as overland flow and discharges in an uncontrolled manner onto the developed land south of the site and the Langford Drive corridor by the site's south-eastern boundary.

As identified in Figure 66, two (2) 1200mm diameter stormwater lines convey stormwater from the proposed development site, through to the 1650mm diameter inground stormwater network at Langford Drive.

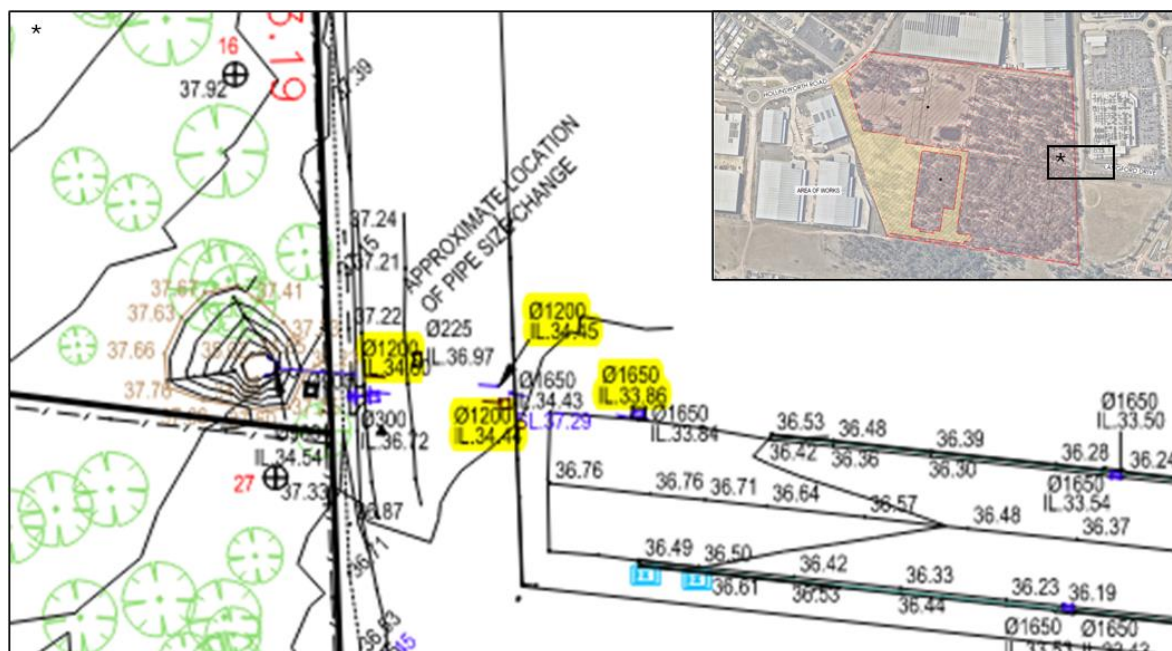


Figure 66: Extract of Survey of Stormwater Infrastructure at Langford Drive Interface
Source: Stantec, Infrastructure and Utilities Report annotated by Patch Planning

Stormwater Quantity

The site will introduce approximately 16.28Ha of impervious pavement to the catchment runoff. A DRAINS model has been prepared to verify the site stormwater discharge rate for the pre-development state and is provided within the IUR at **Appendix 25** of this EIS.

Table 58 below nominates the generated runoff within the proposed area as per DRAINS modelling. This will need to be managed via the constructed pit and pipe network, in addition to temporary sediment and erosion management measures, such as the temporary sediment basin during construction.

Table 58. Stormwater Generated Runoff				
AEP Rainfall Event	Pre-development Discharge (cu.m/s)	Post-development Discharge without OSD (cu.m/s)	Bypass of the site Discharge (cu.m/s)	Total Site Discharge (without OSD (cu.m/s)
20% AEP	4.58	5.91	0.34	6.25
10% AEP	6.38	7.36	0.47	7.83
5% AEP	7.81	8.62	0.57	9.91
2% AEP	9.04	10.30	0.66	10.96
1% AEP	10.60	11.6	0.77	12.37

Source: Table 3, Stantec Infrastructure Report

Proposed Stormwater Infrastructure

As per the IUR (**Appendix 25**) the site has a total development site area of 21.16Ha, with a roof area 6.608Ha. Roof areas shall be captured via a downpipe system and discharged to the proposed below-ground stormwater network. Surface flows shall be captured via a pit and pipe network and shall eventually discharge into the proposed council connection point along the eastern boundary of the site.

The DRAINS model has been prepared to confirm that the proposed stormwater pit and pipe network is adequately sized to capture and convey the 5% AEP storm. Overland flow paths have been adequately sized to convey the 1% AEP storm flows safely across the site in a north-westerly direction.

The development is intending to discharge site stormwater into an existing inground pit and pipe stormwater network in Langford Drive. Although the site is not within a zone that requires permanent OSD storage, permanent OSD will be installed to control site discharge rates to predevelopment levels. This will ensure that this existing downstream stormwater network in Langford Drive has adequate capacity to perform to the required standard.

The proposed OSD tank will capture stormwater within the development and proposes a total volume of 3,865m³. The OSD tank has been sized to restrict post-development site discharge to the 20% AEP, 10%AEP, 5%AEP, 2%AEP, and 1%AEP predevelopment rates. Refer to Table 3 of the IUR (**Appendix 25**) for further detail.

Stormwater Quality

Stormwater quality treatment is required to comply with the pollutant reduction targets within the Blacktown Development Control Plan 2015 (DCP 2015), which requires that all developments must achieve a minimum percentage reduction of the post development average annual load of pollutants in accordance with Table 59.

Table 59. Blacktown Council Required Pollutant Reduction Targets		
Pollutant	Post development average annual load Reduction Target	Post development average annual load Reduction
Gross Pollutants	90%	100%
Total Suspended Solids	85%	85%
Total Phosphorous	65%	66.9%
Total Nitrogen	45%	50.6%
Total Hydrocarbons	90%	100%
Source: Table 3, Stantec Infrastructure Report		

6.14 Infrastructure Requirements and Utilities

An Infrastructure and Utilities Report has been prepared by Stantec Australia Pty Ltd and accompanies this EIS as **Appendix 25**. The report considers the potential utility infrastructure requirements associated with the proposed data centre and provides details of the existing site infrastructure, associated capacities and proposed augmentation or extension of these services.

6.14.1 Electrical Infrastructure Requirements

Existing Supply Authority Network

Endeavour Energy are the Supply Authority for the area. Initially and prior to the establishment of the proposed onsite 132/11kV Zone Substation, the site shall be supplied from South Marsden Park Zone Substation at 11kV [2 off feeders arranged in a N+1 formation and rated for 10MVA] as demonstrated in Figure 33 within Section 3.2.12 of this EIS.

A Preliminary Enquiry for the 132kV supplies to the site has been lodged with the Supply Authorities and is currently in the process of being reviewed.

Maximum Power Demand

The calculated demand for the site is approx. 720MW, made up of six (6) similar buildings (circa 120MW each).

Proposed Supply Arrangement to New Development

A new 132/11kV zone substation will be established on the site. It is envisaged that the new zone substation will be serviced by a new 330/132kV substation off site which is currently being investigated. There will be two sets of transformation firstly 330/132kV off site and then 132/11kV on site. There will also be a cable pathway between the 330kV substation and the site zone substation area.

A Preliminary Enquiry for the transmission connection at 330kV has been submitted to TransGrid. Separate consent will be sought for offsite electricity works separate to the SSDA.

Site electricity reticulation shall consist of inground 11kV networks from the onsite zone substation to each of the six (6) buildings. Reticulation shall largely follow the internal road network of the campus.

6.14.2 Communications Infrastructure Requirements

The site shall have separate four (4) diverse carrier point of entries (POE). It is noted that CDC is a registered carrier and will be responsible for establishing the four (4) POE boundary communication pits. Each of the buildings will have a minimum of two (2) diverse pathways for communication lead-ins.

The site has no carrier mobile base stations that will require relocation.

6.14.3 Potable Water Supply Infrastructure

Existing Water Supply

The site will connect into the DN 200 Sydney Water main reticulating with Hollinsworth Road. The development team have engaged an accredited Water Servicing Coordinator (WSC) to liaise with Sydney Water. The application has been lodged with Sydney Water under case number 213728. It is anticipated that the existing Sydney Water asset will be adequate to service the proposed development at full capacity.

Proposed Water Supply

Confirmation that there is sufficient capacity in the existing potable water network to service the proposed development will be provided through Sydney Water's Notice of Requirements (NoR).

The development proposes to use rainwater to service 80% of the potable demand for irrigation, toilet flushing automatic trap primers and maintenance hose taps. The anticipated flow rate for the non-potable system will offset the potable demand.

It is expected the development will require a DN150mm supply to the fire pump room and main building facilities. The hydrant system will be supplied by the available water main in Hollinsworth Rd, although the sprinkler system will be supplied from water tanks. The connection to the public main is from the gridded supply in Hollinsworth Rd west of the development.

Estimated Potable Water Demand Calculation

The site potable water demand assumptions have been calculated based on expected population data, the total development potable water demand is projected to be approximately 6,284 L/day. Due to implementing rainwater re-use for toilet and urinal flushing, the potable water demand is greatly reduced.

Approximately once per year (during commissioning and maintenance of the mechanical systems) it is expected the mechanical system will be filled with potable water at a rate of up to 14 L/s for approximately 24hrs. These loads have been considered independently from normal daily demand.

6.14.4 Sewer

Existing Sewer Drainage

The site connects into the Sydney Water main reticulating with Hollinsworth Road. Due to the existing topography sloping down to the southeastern corner, the existing Sydney Water sewer can only be supplied by a rising main. The development team proposes to discharge the 5MW building and the gatehouse via the rising main into Hollinsworth main.

The development team have engaged an accredited WSC to liaise with Sydney Water. The application has been lodged with Sydney Water under case number 213728. Through coordination with the WSC and Sydney Water, a new 150mm gravity main connecting into the 150mm reticulating parallel with the TfNSW road corridor and Stockholm Avenue is proposed to service the remainder of the development.

Proposed Sewer Drainage

Due to the topography, site staging and grading of the site, it is proposed to connect the 5MW building and gatehouse to a new connection to the 225mm Sydney water sewer in Hollinsworth Road via a rising main at 2l/s 300kpa. This is proposed to be via a new connection although this will be determined by Sydney Water in their Notice of Requirements.

The remainder of the development will drain to the southeastern corner where the design team are coordinating a new 150mm Sydney Water gravity sewer main. The sewer main will cross the Castlereagh freeway corridor and connect into available infrastructure, as per Figure 67. The development team has been given support from TfNSW for this outcome (see **Appendix 40**).

Estimated Sewer Demand Calculation

The site hydraulic demand assumptions have been calculated based on expected population data, the total development sewer demand to be approximately 10,915 L/day.

We note that there will be uncommon occurrences where the sections of pre-action sprinkler pipework may be drained after an emergency. These loads have been considered independently from the daily expected discharge. The drain down discharge will remain under the 2 L/s limit for Sydney Water sewer infrastructure.

Approximately once per year (during commissioning and maintenance of the mechanical systems) it is expected the mechanical system will be drained down over a 24hr period. The drain down discharge will remain under the 2 L/s limit for Sydney Water sewer infrastructure. These loads have been considered independently.

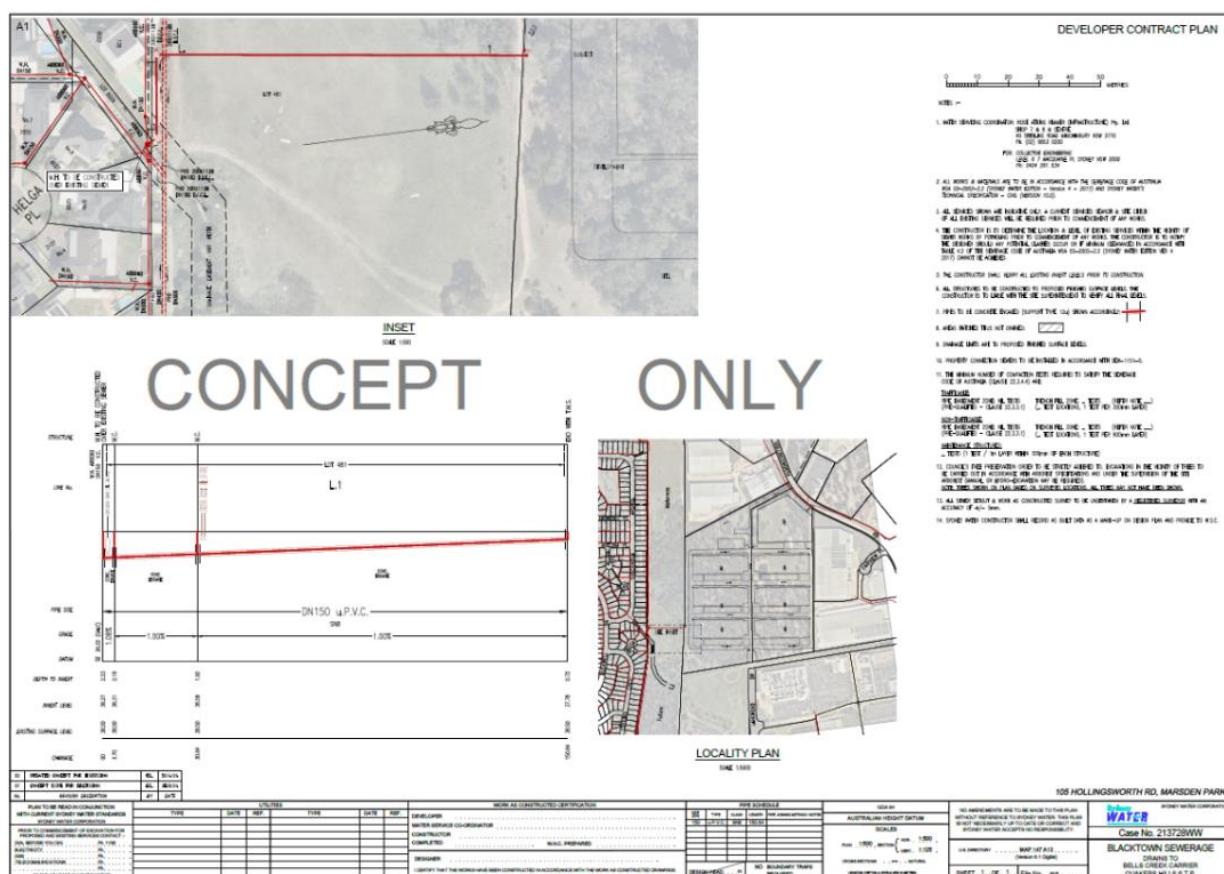


Figure 67: Proposed New Sewer Connection
Source: Stantec and Sydney Water

6.15 Ecologically Sustainable Development

An Ecologically Sustainable Development Report (ESD Report) has been prepared by Stantec in support of the SSDA and is provided as **Appendix 17** of the EIS. The ESD Report responds to the SEARS requirements by providing a description of how the proposed development will incorporate the principles of ecologically sustainable development (ESD) into the design and ongoing operation of the data centre.

The ESD Report identifies that, in alignment with CDC's ESG strategy, the project intends to implement best-practice sustainability design initiatives including:

- The development's electricity demand is to be met using electricity to ensure that the development is future-proof as the electrical grid progressively decarbonises;
- Purchasing electricity that is 100% backed by renewable electricity sources for both customer IT electricity and overhead electricity to run the data centres. CDC currently achieves this by purchasing Large-scale Generation Certificates (LGCs);
- High performance building envelope, strategic shading, and rationalised window to wall ratios of occupied zones.
- High COP of chillers, fans and pumps to reduce operational energy use and therefore greenhouse gas emissions.
- Water sensitive urban design principles including:
 - Rainwater harvesting and reuse for irrigation, toilet flushing and washdown;
 - Selection of native & drought tolerant landscaping;
 - Strategic stormwater volume and pollutant discharge control;

- Selection of water efficient sanitary fixtures including toilets, taps and urinals;
- Air cooled chillers to significantly reduce the usage of potable water for primary cooling purposes.
- Specification of sustainable, certified, low-carbon content equipment and materials.

The impacts of these sustainability strategies on energy, GHG emissions and water consumption of the proposed data centre campus were estimated by Stantec and summarised in Table 60 and Table 61.

Table 60. Summary of estimated Energy, GHG Emissions and Water Reduction			
Resource	Benchmark (average market performance)	Proposed	% Improvement compared to Benchmark
PUE	1.61	1.3	
Data centre Facility energy (kWh)	2,670,512,897	1,268,534,212	52%
GHG emission throughout project life cycle (tCO ₂)	1,656,663	829,627	52%
		1,173	99% including purchase of LGCs renewable energy
Data centre water use (WUE)	1.8	0.01	Nearly 100%
Source: Stantec ESD Report (Table 2)			

Table 61. Summary of office component energy, GHG emissions, and water reductions			
Resource	Benchmark (average market performance)	Proposed Project Performance	% Improvement compared to Benchmark
Office NABERS Target	4.5	5.5	22%
Office energy (kWh/year)	1,558,242	956,822	39%
Office Water Use (kL/year)	15,750	2,307	85%
Source: Stantec ESD Report			

Additionally, the operational energy and water performance of the commercial office components of each building will be rated against NABERS upon the achievement of at least 70% occupancy within the office space. The performance targets shall be aligned with SEPP (Sustainable Buildings) 2022 as follows:

- 5.5-star base building NABERS Energy for office space only.
- 3-star NABERS Water for office space only.

6.16 Climate Resilience

The ESD Report provided as **Appendix 17** of this EIS recommends a number of design solutions to improve the project's resilience against climate hazards. These design solutions are outlined in Table 62 below.

A Climate Change Adaptation Plan is recommended to be developed to further assess the projected climate risks for the site. This will allow for early mitigation for any elements found to be at high-risk to be designed for long-term safety, security, and operation.

Table 62. Climate Resilience Initiatives

Climate Variable	Proposed Design Solutions
Extreme Temperatures	• Light-coloured roof with high solar reflective index (SRI) and other finishes selections to reduce urban heat island effect. • Provide a mixture of high-performance glazed façade systems and external shading. • Passive design elements incorporated into the design such as shading, orientation and insulation. • HVAC systems efficiently designed to maintain indoor comfort during peak conditions. • Extensive landscape areas across nearly 37% of the site area.
Water	<u>Water Conservation:</u> • Use of drought tolerant and native plants (100%). • Provide subsoil irrigation system to improve watering effectiveness. • Recycled water from rainwater tank for irrigation, toilet flushing and washdown. • Install water-efficient fittings to reduce risk on potable water which may be impacted during drought. <u>Flood Mitigation:</u> • Provide safer access routes that are above the peak flood levels. • Provide multiple access routes to the site. • Provide early warning system for a risk of a flood. • Increased drainage considered for the development to reduce roof and surfaces flooding. • Increased building entrance height. • Design assessment to mitigate post development probable maximum flood (PMF) level. • Incorporate best practice maintenance strategies for stormwater system. • Install additional power sources such as back-up generators or battery storage located above the flooding heights.
Energy	• Designing for energy efficiency and grid resilience. • Install additional power sources such as back-up generators or battery storage located above the flooding heights.
Fire	• Provide additional filtration for carbon filters and smoke removal. • Provisions of compliant fire and life safety design of the building to protect fire and life safety strategy (e.g., provisions of exits and egress, fire sprinkler and hydrant systems, smoke hazard management, etc.). • Provide multiple access routes to the site.

6.16.1 Greenhouse Gas Emission Reduction

The proposal seeks to reduce its GHG emissions through a number of mitigation measures, specifically:

- **Avoid** - Completely avoid the generation of GHG emissions is impractical due to the data centre building's high energy demand and high redundancy for mission critical. For example, yearly testing of diesel generator for the safety of power usage to the data centre is critical and cannot be avoided. However, the proposed design will be optimised to find the balance between the energy redundancy and safety operation of the facility building service.

Motion sensors and lighting timers will be installed and controlled via BMS to avoid use of energy in office spaces when these are unoccupied.

- **Reduce** - A combination of active and passive design strategies will be implemented to avoid the excessive use of energy throughout the development.

The office spaces particularly will aim to achieve indoor environmental comfort through a high performance building fabric.

Reduce emissions, by using more efficient technologies and processes

Optimised mechanical and electrical service design resulting a significantly lower PUE and lower office operational energy

Reduce emissions by reducing water use

- **Substitute** - Use lower-emission raw materials and energy sources, renewable energy
 - Purchase of LGCs – renewable energy
 - Low embodied structural materials – Steel
 - Low embodied structural materials – Concrete
- **Offset** - Purchase verified high-integrity carbon offsets to reduce residual emissions (as a last resort).

Table 63 provides a summary of how the proposal has reduced GHG emissions when compared against benchmark.

Table 63. Summary of Project's Greenhouse Gas Emission Reduction			
Resource	Benchmark	Proposed	% Reduction compared to Benchmark
Scope 1 and Scope 2 GHG emissions (tCO ₂)	987,256	829,627	19% compared against Datacentre designed to a PUE of 1.61
Scope 1 and Scope 2 GHG emission (tCO ₂)	987,256	1,173	99% including purchase of LGCs renewable energy
Source: Stantec ESD Report			

Detailed information can be found within the Greenhouse Gas Assessment and Mitigation Plan (GHG Report) has been prepared by Stantec and is provided as **Appendix 18** of the EIS.

6.17 Greenhouse gas and energy efficiency

A Greenhouse Gas Assessment and Mitigation Plan (GHG Report) has been prepared by Stantec and is provided as **Appendix 18** of the EIS. The GHG Report is aligned with the EPA's *Greenhouse Gas Assessment Guide for Large Emitters* and provides an assessment of the project's projected GHG emission and mitigation plan (reflecting the Government's goal of net zero by 2050).

The GHG Report addresses the Scope 1 and Scope 2 GHG emissions as defined under the *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and Scope 3 GHG emissions as defined within Australia's National Greenhouse Accounts (DCCEEW, 2023) for facility reporting purposes:

- **Scope 1 emissions** are released to the atmosphere as a direct result of an activity, or series of activities at a facility level. Scope 1 emissions are sometimes referred to as direct emissions.

The main components of scope 1 emissions for Marsden Park Data Centre are from cooling equipment refrigerant leakages.

- **Scope 2 emissions** are released to the atmosphere as a direct result of one or more activities that generate electricity, heating, cooling, or steam consumed by the facility but that do not form part of the facility. Scope 2 emissions are sometimes referred to as indirect emissions and for a data centre is typically from consumption of imported electricity from the local power grid.

The main component of Scope 2 emissions for Marsden Park Data Centre is from consumption of electricity from the local power grid that feeds into the facility. Scope 2 emissions exclude the customer IT electricity which, due to the commercial model proposed, are considered a Scope 3 emission.

- **Scope 3 emissions** are indirect emissions other than scope 2 emissions that are generated in the wider economy. They occur due to the activities of a facility, but from sources not owned or controlled by that facility's business. Some examples are extraction and production of purchased materials, transportation of purchased fuels, use of sold products and services.

For Marsden Park Data Centre, over 80% of emissions are from Scope 3. The main component of Scope 3 emissions is from consumption of electricity by IT equipment owned by data centre tenants.

Table 64 and Figure 68 summarise the estimation of the Scope 1, 2 and 3 GHG emissions for the proposed project spanning from year 2026 to 2083. This projection is based on a 50-year lifecycle for each structure, with construction of the six buildings staggered across the initial 8 years.

Module	Category	Sub category	Scope	Totals (t Co2-e)
A1 - A3	Product Stage		3	193,449.18
A4	Transport of Equipment and Materials		3	18,432.60
A5	Construction		3	64,629.04
B2 - B3	Maintenance and Repair		3	37,441.36
B4	Replacement		3	475,949.84
B6	Integrated Operational Energy	Facility Electricity	2	751,056.14
B6	Integrated Operational Energy	Electricity distribution	3	142,700.67
B6	Integrated Operational Energy	R134A (HFC-134A)	1	2,024.01
B6	Integrated Operational Energy	Diesel oil	1	76,546.61
B6+	IT Equipment Operational Energy	IT Electricity	3	2,588,063.16
B7	Operational Water Use		3	550.64
C1	Deconstruction / Demolition		3	2,183.39
C2	Transport of Waste Offsite		3	11,142.25
C3	Waste Processing		3	1.57
C4	Disposal		3	13,434.37
Total Annual Scope 1, 2 and 3 Emissions (t CO2-e)				4,377,605
<i>Source: Stantec GHG Report</i>				

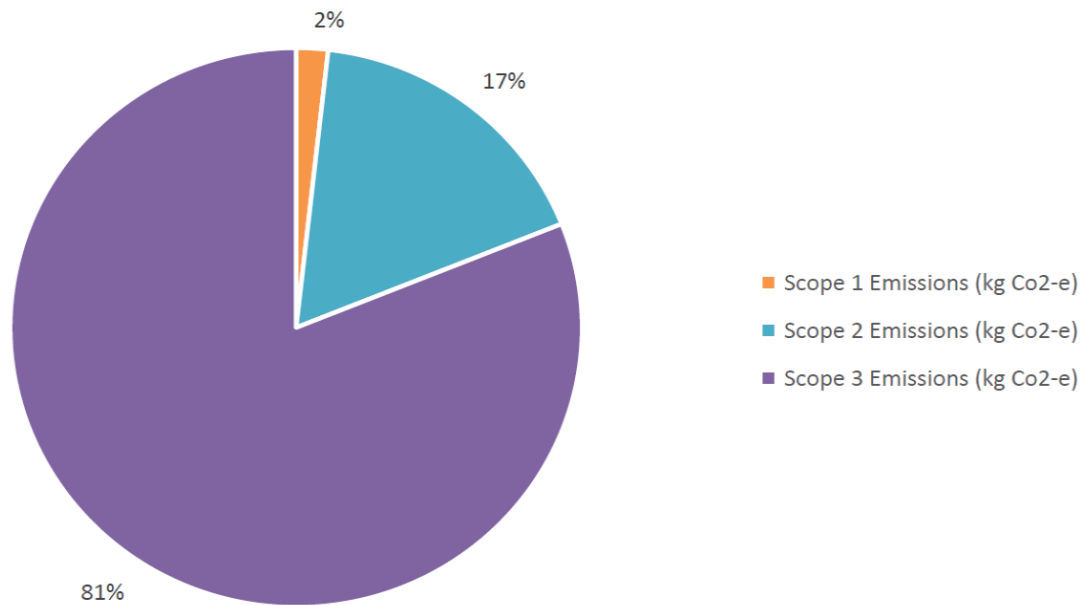


Figure 68: Marsden Park Projected Scope 1,2 and 3 Emissions (tCO₂-e)
Source: Figure 2 - GHG Report (Stantec)

6.17.1 Key Mitigation Measures

The Proponent will implement a robust mitigation strategy centred on the purchase of electricity that is 100% backed by renewable electricity sources. CDC currently purchases and surrenders Large-scale Generation Certificates (LGCs) to achieve a zero-emission factor for electricity used in data centre operations including facility and customer's IT electricity. By acquiring electricity that is 100% backed by renewable sources for example through the purchase and surrendering of LGCs, CDC effectively offsets its electricity consumption. This approach aims to neutralized emissions associated with the electricity use, aligning with CDC's commitment to target net zero carbon for scope 1, 2 and customer IT load, waste and business travel by 2030.

The key emission mitigation measures are outlined in Table 65.

Table 65. Key GHG emission mitigation measures		
Impact Category	Key Emission Sources	Mitigation Strategy
Scope 1 – Direct emissions	Diesel oil from back up generator annual testing	CDC will optimize generator efficiency through regular maintenance and adoption of advanced emission control technologies as these develop. In the meantime, and in alignment with the Net zero carbon by 2030 goals, CDC will calculate emissions to purchase carbon offsets.
Scope 2 – Indirect emissions	Operational energy to run data center facility	Purchase and surrender of Large-scale Generation Certificates (LGCs) which represent renewable energy generation. This approach ensures that the emissions associated with the electricity use are neutralized.

Table 65. Key GHG emission mitigation measures		
Impact Category	Key Emission Sources	Mitigation Strategy
Scope 3 - Life Cycle and supply chain emissions	- Operational energy to run costumer ICT - Equipment Replacement - Upfront carbon emissions from concrete and steel during Product stage A1 - A3	- Purchase and surrender of Large-scale Generation Certificates (LGCs) which represent renewable energy generation. This approach ensures that the emissions associated with the electricity use are neutralized. - CDC will partner with suppliers and customers that have established science-based targets and goals to reduce greenhouse gas (GHG) emissions. By collaborating with these forward-thinking suppliers, CDC ensures that the equipment used in its operations aligns with the highest standards of sustainability. Additionally, CDC will actively explore and integrate equipment options with lower carbon footprints with longer life span to minimise equipment replacement without compromising the safe operation of the data centre. Focus will be on chillers and UPS systems which have the highest GHG emissions. - Concrete and Steel are the items with higher upfront carbon emissions. CDC will choose materials with lower embodied carbon, such as low embodied carbon concrete and steel.
Source: Stantec GHG Report		

In addition, a Greenhouse Gas Mitigations Plan has been developed in accordance with the EPA's *Climate change requirements for large emitters* (see **Appendix 42**).

6.18 Aboriginal Cultural Heritage

An Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared by Travers Bushfire & Ecology (Travers) and is provided as **Appendix 9** of the EIS.

The objectives of the ACHAR are to determine what, if any, impacts the proposed works may have upon Aboriginal cultural heritage, and to identify the appropriate cultural heritage mitigation measures in consultation with Aboriginal stakeholders.

Note: Works that will disturb Aboriginal objects have been approved by Blacktown City Council under the Early Works DA. The Early Works DA requires the granting of an AHIP. The works proposed within the SSDA are not expected to disturb any artefacts, and do not require an additional AHIP.

6.18.1 Consultation

Aboriginal consultation was undertaken for the proposal, beginning on 23 June 2023.

In accordance with Step 4.1.2 of the Consultation Requirements, the following organisations were contacted to request the names of Aboriginal people or organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places within the study area or nearby:

- Heritage NSW;
- Greater Sydney Local Land Services;
- The Office of the Registrar *Aboriginal Land Rights Act 1983*;
- Native Title Services Corporation (NTSCorp); and
- Blacktown City Council and Deerubbin Local Aboriginal Land Council (LALC).

Letters and emails were sent to all Aboriginal people and organisations through Step 4.1.2. These letters and emails provided details about the location and nature of the project with an interest to register. An advertisement was placed in the Hawkesbury Gazette Newspaper on 12 July 2023 seeking to consult with Aboriginal persons regarding the project and inviting those who hold cultural knowledge of the region to register their interest by 26 July 2023.

By the closing date of 24 July 2023, 19 groups/individuals registered their interest as Registered Aboriginal Parties (RAPs). Though Deerubbin LALC did not formally register as a RAP, they have nonetheless been included in the consultation process and received all material sent to the RAPs.

The draft ACHAR was sent for RAP review on 1 August 2024. The comments received have been included within the ACHAR following the closing date for review on 29 August 2024.

6.18.2 Impact Assessment

One Aboriginal site (45-5-4619) will be impacted by the proposed works as summarised in Table 66.

Table 66. Impact Assessment Summary				
Site Name	Site ID	Type of harm	Degree of harm	Consequence of harm
MPIP PAD 2	#45-5-4619	Direct	Total	Total loss of value
HWR 1	#45-5-5882	None	None	No loss of value
Source: Table 11-1, Travers ACHAR				

6.18.3 Recommendation and Mitigation Measures

The overall guiding principle for cultural heritage management is that where possible, Aboriginal sites should be conserved. If conservation is not practicable, measures should be taken to mitigate impacts to Aboriginal sites.

Travers have concluded that Aboriginal objects were identified during previous assessment of the site and the archaeological test excavation and registered on AHIMS as two sites (#45-5-4619 and #45-5-5882).

Works that will disturb Aboriginal objects have been approved by Blacktown City Council under the Early Works DA. The Early Works DA requires the granting of an AHIP. The works proposed within the SSDA are not expected to disturb any artefacts, and do not require an additional AHIP.

PREPARATION OF AN AHIP

In accordance with the *Code of Practice*, Travers have recommended that an Aboriginal Heritage Impact Permit (AHIP) application be submitted to encompass the following activities which will disturb Aboriginal objects within the AHIP application area (Figure 69) which is supported by the AHIP Area Vertices contained within Table 12-1 of the Draft ACHAR.

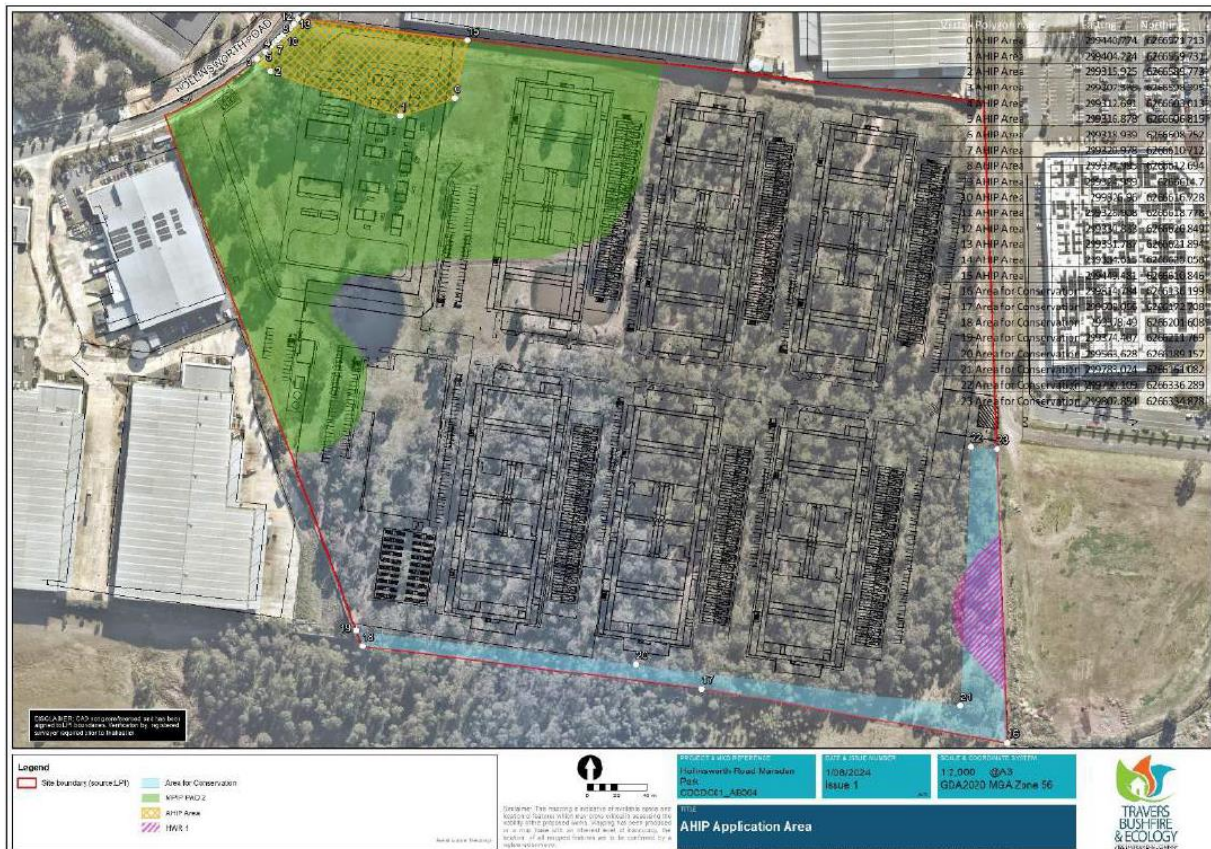


Figure 69: AHIP Application Area
Source: Figure 12-1, Travers ACHAR

Travers have recommended the following management and mitigation measures.

HWR 1

No development works are proposed in the area containing AHIMS site HWR 1 (AHIMS ID #45-5-5882). HWR 1 should be designated a 'no harm area'. There should be no ground disturbing works within the southeast corner of the study area shown in Figure 69. If changes are made to the proposed works and ground disturbing works will be conducted in this area, further investigation will be required.

MPIP PAD 2

The proposed development proposes total impact to the undeveloped area of MPIP PAD 2.

This site is not considered to be of high enough significance to justify the prevention of the proposed works on the basis of heritage conservation.

Salvage Excavation

Where harm cannot be avoided, measures should be taken to mitigate the impacts to Aboriginal sites. These measures are outlined in detail in the ACHAR.

Discovery of Human Remains

If suspected human remains are discovered and/or harmed in, on or under the land within the study area, the following actions must be undertaken:

- The remains must not be harmed/further harmed
- Immediately cease all works at that particular location
- Secure the area to avoid further harm to the remains

- Notify the NSW Police and the Environment Line (Heritage NSW) on 131 555 as soon as practicable and provide any details of the remains and their location
- Do not recommence any work at that particular location unless authorised in writing by Heritage NSW.

6.19 Non-Aboriginal Heritage

Non-Aboriginal Cultural Heritage

A Statement of Heritage Impact (SoHI) has been prepared by Biosis and included at **Appendix 30** of the EIS and which specifically assesses the potential impacts of the project on the heritage values of non-Aboriginal cultural heritage assets.

There are no heritage items located within or adjacent to the study area. The closest item listed on the BLEP 2015 is *'House—The Oaks'* (item no. I52), which is 1.46 kilometres to the south of the site. There are two archaeological sites that are listed on the BLEP 2015 as well as listed on the State Heritage Register (SHR) which are located several hundred metres away from the site.

As per Figure 70, the nearest items of State heritage significance are:

- *'Blacktown Native Institution'* (SHR item no. 01866), Richmond Road, Oakhurst 2761, located approximately 460 metres southeast of the study area. Listed on the BLEP 2015 as archaeological site A121.
- *Colebee and Nurragingy Land Grant'* (SHR item no. 01877, listing number 01877), Richmond Road, Colebee 2761, located approximately 500 metres east of the study area. Listed on the BLEP 2015 as archaeological site A120 and an archaeological-terrestrial site on the SHR.

The project will not disturb either of the sites listed on the SHR. Heritage NSW has raised no project concerns about these sites.

A review of the Commonwealth Heritage List (CHL) indicated that there are no listed heritage items within or adjacent to the study area. The closest item listed on the CHL is *'Shale Woodland Llandilo'* (Place ID 105534), approximately 1.77 kilometres west of the study area.

Given the remoteness of the project from any heritage item, there is no potential for adversely impact the heritage values of heritage items at any level of listing.



Figure 70: Distance of Site to the Nearest Heritage Item

Source: NSW Planning Portal

Non-Aboriginal Archaeological Heritage

A Historical Archaeological Assessment (HAA) has been prepared by Biosis and included at **Appendix 21** of the EIS. The HAA specifically assesses the potential impacts of the project on the heritage values of non-Aboriginal archaeological heritage assets.

As part of the HAA, a physical inspection was undertaken to determine whether potential archaeological resources related to the previous land use were present and likely to be impacted by the proposed work.

Based on historical records of the land, it was identified that the study area contains low archaeological potential associated with historic use of the land for pastoralism, forestry and land tenure. Archaeological resources associated with these phases of use are not considered to be significant at a state or local level. This was due to their commonality within the local area and lack of ability to contribute new or significant information regarding the historical use of the land and local area.

Recommendations

These recommendations have been formulated to respond to client requirements and the significance of the site. They are guided by the ICOMOS Burra Charter with the aim of doing as much as necessary to care for the place and make it useable and as little as possible to retain its cultural significance.

6.19.1 Recommended Mitigation Measures

The following management measures are appropriate should any unexpected impacts occur:

Unexpected finds protocol – If unexpected finds of historical nature are discovered during any work, work within 5 m of the find must cease and the following steps taken:

- an archaeologist will be contacted to assess the find and determine if it is clearly a relic or has moderate to high potential to be a relic (this may require additional research);
- if the find is determined to be a relic, a s146 (of the Heritage Act) is to be forwarded to the Heritage Council who will be consulted on the appropriate management measure; and
- if the find is assessed and is not a relic, work inside the area that was made a no-go area can re-commence.

Human remains protocol – In the event that known or suspected human remains (generally in skeletal form) are encountered during the activity, the following procedure will be followed immediately upon discovery:

- all work in the immediate vicinity will cease and the find will be immediately reported to the work supervisor who will advise the Environment Manager or other nominated senior staff member;
- the Environment Manager or other nominated senior staff member will promptly notify the police (as required for all human remains discoveries);
- the Environment Manager or other nominated senior staff member will contact Heritage NSW for advice on identification of the human remains;
- if it is determined that the human remains are Aboriginal ancestral remains, the Local Aboriginal Land Council will be contacted, and consultative arrangements will be made to discuss ongoing care of the remains; and
- if it is determined that the human remains are not Aboriginal ancestral remains, the coroner will be contacted by the police and further investigation will be conducted to determine if the remains represent a historical grave or if police involvement is required.

Non-Aboriginal Archaeological Heritage

Recommendation 1: Works may proceed with caution

The study area has been identified to contain low archaeological potential. The proposed works within the study area may proceed with caution, provided the mitigations measures presented in Recommendation 2 are implemented where necessary.

Recommendation 2: Discovery of unanticipated historical relics

Relics are historical archaeological resources of local or State significance and are protected in NSW under the Heritage Act. Should unanticipated relics be discovered during the course of the project, the following steps should be taken:

- If a find is identified, works should stop immediately around the find and the area should be protected.
- The find should be reported to the project manager or supervisor.
- A historical archaeologist should be contacted to identify the find.
- If the find is a relic, a mitigation strategy must be developed and implemented. This could include avoidance of the find, excavations or other mitigation measures.
- If the find is a relic, notification to Heritage Council under Section 146 of the Heritage Act will be required.

6.20 Bushfire

A Bushfire Assessment Report has been prepared by Building Code and Bushfire Hazard Solution P/L and is contained at **Appendix 15** of this EIS. As identified within the report, and shown in Figure 71, the site is depicted on Council's Bushfire Prone Land Map (BPLM) as containing designated Category 1 Vegetation and Vegetation Buffer. The site is therefore considered 'bushfire prone'. In accordance with the SEARs, the report details proposed bush fire protection measures and demonstrates compliance with *Planning for Bush Fire Protection 2019* (PBP).

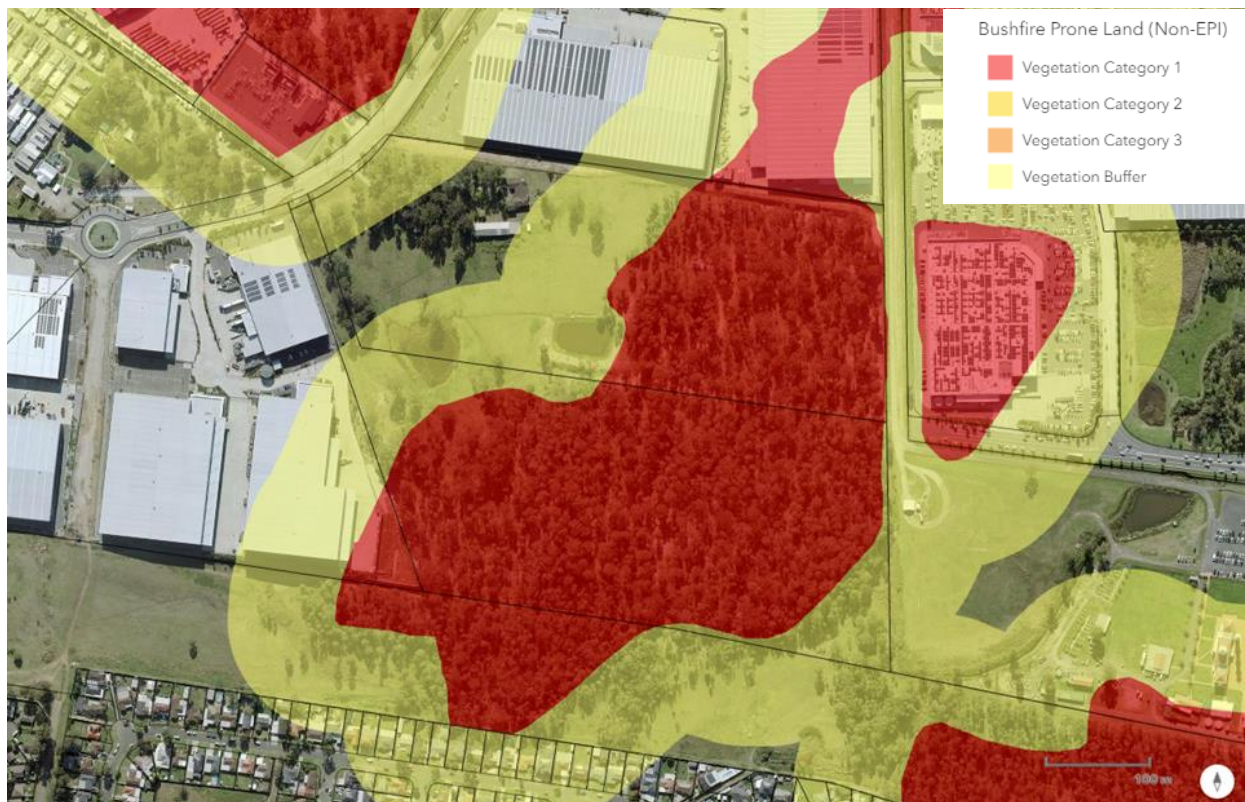


Figure 71: Bushfire Prone Land

Source: NSW Planning Portal annotated by Patch Planning

The assessment undertaken by Building Code and Bushfire Hazard indicates that vegetation identified as posing a hazard is located within the subject site to the south and east, being retained vegetated buffers. These buffers connect to a larger hazard to the south.

The predominate vegetation posing a hazard has been mapped as 'Castlereagh Ironbark Forest' which is a Cumberland Dry Sclerophyll Forests class. Coastal Valley Grassy Woodlands and Coastal Floodplain Wetlands were also identified within the assessment area, however consistent with PBP the highest hazard was adopted. Therefore, for the purpose of the assessment the vegetation posing a hazard to the south and east has been determined to be Cumberland Dry Sclerophyll Forests. It is noted that this classification is considered conservative with fuel load observations being more akin to a Grassy Woodland.

The application of PBP requires satisfactory demonstration of the aim and objectives and the specific objectives and Bushfire Protection Measures. While Data Centres are not specifically addressed in PBP, Building Code and Bushfire Hazard has utilised section 8.3.10 'Commercial and industrial development' of PBP to establish specific considerations and Bushfire Protection Measures for the proposal. These measures include establishing Asset Protection Zones (APZs) which should be used as a base for the development of a package of measures for commercial and industrial development.

A minimum APZ of 17.5m has been determined as being required through bushfire design modelling from the bushfire hazards to the south and east. The proposed buildings are located greater than 17.5 metres from the retained vegetated buffers and as such will not be exposed to radiant heat levels exceeding 29kW/sqm. The proposed buildings will be Type A construction which provides the buildings with a 2 hour fire rating.

6.20.1 Recommendations

The recommendations provided within the Bushfire Assessment Report are contained in Table 67 below.

Table 67. Bushfire Recommendations	
Item	Recommendations
Asset Protection Zones	1. At the commencement of construction works and in perpetuity all areas within the Asset Protection Zone as shown on the Site Plan Floor Plan prepared by Terras Landscape Architects (Job Number: 15175.5, Drawing No: L113, Rev B, Date 20/08/2024) shall be maintained as an Asset Protection Zone (Inner Protection Area) as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zone and Appendix 4 of <i>Planning for Bush Fire Protection</i> 2019.
Construction (Developments 1-3 & 6)	2. That all gaps >3mm or more on proposed buildings be either screened within aluminium, steel or bronze metal mesh having an aperture size ≤2mm or be sealed / closed. 3. That all operable windows be screened internally or externally with aluminium, steel or bronze metal mesh having an aperture size of ≤2mm in such a way that the entire opening is screened when in the open position. 4. That the external side-hung doors on proposed buildings be tight fitting and fitted with a draft excluder. This may require draft excluders on the stiles, head, sill or threshold and rebated or planted jambs & centre stiles. 5. That the external roller doors on proposed buildings have tight fitting guide tracks/seals (not providing a gap >3mm when in the closed position). 6. That any mechanical ducted ventilation on proposed buildings provides screens over air intake vents and ensuring that exhaust vents are either screened or fitted with dampers that close when positive outward air pressure is lost to ensure the maintain ember protection to the inside of the buildings.
Landscaping	7. That any new landscaping within the Asset Protection Zones is to comply with Table 7.4a of <i>Planning for Bush Fire Protection</i> 2019.
Gas (where applicable)	8. That any new gas services are to comply with Table 7.4a of <i>Planning for Bush Fire Protection</i> 2019 as follows: - reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; - all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side; - connections to and from gas cylinders are metal; - polymer-sheathed flexible gas supply lines are not used; and - above-ground gas service pipes are metal, including and up to any outlets.
Emergency Management	9. That the bushfire emergency management plan to be prepared and is to be consistent with the NSW Rural Fire Service Guidelines for the <i>Preparation of Emergency / Evacuation Plan</i> .
Water	10. That the new hydrant system is to comply with the requirements detailed in Table 5.3c of <i>Planning for Bush Fire Protection</i> 2019, specifically: - fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2021; - hydrants are not located within any road carriageway;

Table 67. Bushfire Recommendations

Item	Recommendations
	• fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2021. • all above-ground water service pipes external to the building are metal, including and up to any taps. • fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels, and installed in accordance with the relevant clauses of AS 2441:2005 Installation of fire hose reels.
Access	11. That the proposed road design complies with the Site Plan prepared by EJE (Drawing No SYD-MP-SSDA-05, Project No 15175, Rev P, Date 21/08/2024). 12. That any new access roads comply with the following requirements for Property Access as detailed in section 7.4 of Planning for Bush Fire Protection 2019: • property access roads are two-wheel drive, all-weather roads; • a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; • curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress; • the minimum distance between inner and outer curves is 6m; • the crossfall is not more than 10 degrees; • maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.
Source: Pages 21-22, Bushfire Assessment Report, Bushfire Hazard Solutions	

6.21 Biodiversity

Under s. 7.9 of the *Biodiversity Conservation Act 2016* BC Act 2016, a Biodiversity Development Assessment Report (BDAR) is required for any SSDA, unless a waiver is granted exempting the SSDA from this requirement.

Accordingly, a BDAR Waiver Request prepared by Abel Ecology was submitted DPHI on 16 October 2024 and is expected imminently. The updated report is provided at **Appendix 14** of the EIS, noting this has been updated in the time since submission to DPHI to reflect the Early Works DA approval.

The BDAR Waiver indicates that mapping errors exist across the site with respect to bio-certification and Cumberland Plain Conservation Plan (CPCP) mapping. Almost the entirety (99.44%) of the site is Bio-certified under the *Order to confer biodiversity certification on the State Environmental Planning Policy (Sydney Region Growth Centres) 2006* ('Conservation Order').

The mapping inconsistencies as identified by Abel Ecology are summarised in Table 68 which is supported by Figure 72 – Figure 73. Abel Ecology believe the original intent of the Conservation Order was to have the entire subject site included in the Bio-certified land.

Table 68. Biodiversity Overlays on the subject site

Type of land	Area of site (sqm)	% of site
Subject site	208,395	100
Bio-certified land (Figure 72)	207,235	99.44
Excluded land under the <i>Order to Confer strategic biodiversity certification – The Cumberland Plain Conservation Plan</i>	1,523	0.73
Overlap land which is both bio-certified and excluded	405	0.19
Land which is neither bio-certified or excluded (Figure 73)	39	0.02
Major transport corridor under the CPCP	3	<0.01
Certified land + excluded land + major transport corridor land – overlap land	208,395	100
<i>Source: Table 1, Abel Ecology BDAR Waiver</i>		

The Early Works DA was approved on 11 September 2024 by Blacktown City Council and permits the removal of 949 trees. All remaining vegetation clearing associated with the subject SSDA within non-bio-certified land is minor, and is specifically required only to achieve minimum APZ requirements. The APZ encroaches into non bio-certified land by only 30m² requiring the removal of five (5) additional trees above those approved for clearing under the Early Works DA. These trees are located on the southern site boundary and identified as trees T118, T119, T124, T140 and T141.

Abel Ecology conclude that the biodiversity impacts associated with the subject SSDA are therefore negligible. Any vegetation clearing within the non-bio-certified land will be significantly minimal in comparison to the area of the retained vegetation within the bio-certified land (4,000sqm).



Figure 72: Bio-certified land
Source: Abel Ecology BDAR Waiver

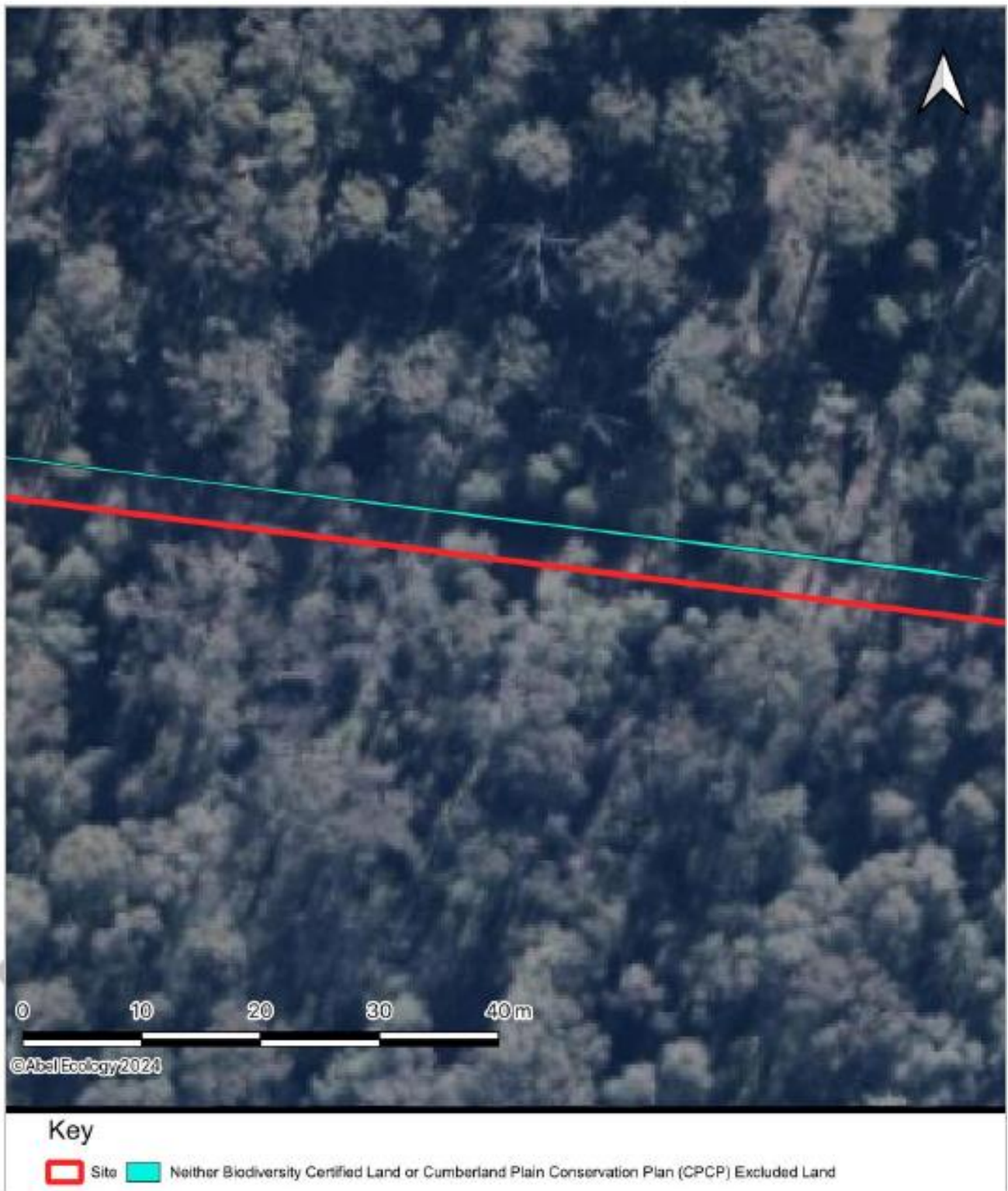


Figure 73: Land that is neither bio-certified nor excluded
Source: Abel Ecology BDAR Waiver

6.21.1 Recommended Mitigation Measures

The BDAR Waiver Request Report is supported by a Prescribed Ecological Actions Report (**Appendix 41**) which concludes:

- Under the approved DA-24-00386, most of the Biocertified vegetation will be removed from the site and earthworks will be undertaken. The loss of native vegetation within Biocertified lands has been compensated through the strategic planning of the North West Growth Centre, through the use of biodiversity offsets.
- Remaining vegetation clearing associated with the Project within the non-Biocertified land is only to meet the APZ requirements. The non-Biocertified portion of the site is also already mostly cleared for the construction of the boundary fence. The impacts associated with the Project are negligible.
- The APZ encroaches into the non-Biocertified land by only approximately 30 m² including five (5) additional trees for removal. Any vegetation clearing within the non-Biocertified land will be significantly minimal in comparison to the area of the retained vegetation within the Biocertified land (4,000 m²).

Accordingly, the following recommendations are made:

1. *A Biodiversity Development Assessment Report (BDAR) is not recommended.*
2. *Plan APZ clearing to minimise impacts on Grevillea juniperina subsp. juniperina.*
3. *Construction fencing to be setup at the edge of development works to minimise impacts on trees retained in the APZ.*
4. *Pre-clearance surveys are to be conducted prior to the beginning of upgrade works, and target:*
 - a. *Koalas*
 - b. *Nests for active use by Threatened species*
 - c. *Cumberland Plain Land Snail*
5. *If a Koala is identified during pre-clearance surveys, an exclusion zone will be established to allow that animal to move from the area of its own accord, as to not disrupt breeding season. Tree clearing is to recommence after the Koala has moved on from the area.*
6. *If a nest of a threatened bird species listed above occurs in a tree to be removed or will be impacted by removing a nearby tree, an exclusion zone is to be set up until that nest can be safely relocated. If the nest cannot be safely relocated without disturbing the nest, the tree is not to be removed until the bird and chicks have left the nest.*
7. *If a Cumberland Plain Land Snail is identified during pre-clearance surveys, relocate it to the surrounding woodland.*
8. *Where possible salvage and translocate Grevillea juniperina subsp. juniperina.*
9. *Investigate reusing felled tree as logs as habitat off-site (elsewhere). Maximal log retention is highly recommended (minimise chipping).*

6.22 Social Impacts

A Social Impact Assessment (SIA) has been prepared by Astrolabe Group (Astrolabe) and included at **Appendix 32** which identifies and analyses the potential positive and negative social impacts associated with the Proposal. The SIA aims to scope, assess, and enhance or mitigate potential positive and negative impacts that may arise from the proposed development. Astrolabe have assessed the potential social impacts of the proposal by:

- Understanding the surrounding community, including residents, businesses, and services;
- Identifying local community values through engagement activities and the strategy and policy landscape; and
- Identifying potential social impacts and how they will be distributed, in consideration of supporting technical studies.

A social impact can be defined as the net effect of an activity on a community and the wellbeing of individuals and families. Social impacts may occur across a range of aspects of an individual's and a community's life and are separated into the following categories:

- **Way of Life** – including how people live, how they get around, how they work, how they play, and how they interact each day.
- **Community** – including composition, cohesion, character, how the community functions, resilience, and people's sense of place.
- **Accessibility** – including how people access and use infrastructure, services and facilities, whether provided by a public, private, or not-for-profit organisation.
- **Culture** – both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings.
- **Health and Wellbeing** – including physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health.
- **Surroundings** – including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity.
- **Livelihoods** – including people's capacity to sustain themselves through employment or business.
- **Decision-Making Systems** – including the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

Social impacts of the proposed development may extend beyond the immediate surrounds. Each of the following impacts assessed has been considered in the context of the social locality, which is defined by the Marsden Park - Shanes Park Statistical Area 2 (SA2).

6.22.1 Assessment of Impacts

A summary of the SIA's assessment of the Proposal's key potential social impacts (low to very high once recommended mitigations are implemented) is shown in Table 70.

Table 69. Social Impact Assessment			
Social Impact Category	Likelihood of Impact	Magnitude of Impact	Overall Impact Rating
Construction phase			
Health and wellbeing	Likely	Minor	Low negative
Surroundings	Likely	Minimal	Low negative
Operational phase			
Way of life – Planting	Likely	Moderate	Medium positive
Way of life – Additional traffic	Likely	Moderate	High negative
Health and wellbeing	Likely	Minor	Low negative
Surroundings – Water and power usage	Likely	Minimal	Low negative
Surroundings – Tree removal and visual impact	Almost certain	Minor	Low negative
Livelihoods	Likely	Moderate	High positive
Source: Table 5 & 6 SIA, Astrolabe			

There is a relatively broad range of potential social impacts associated with the development, ranging from high negative traffic impacts to high positive livelihood impacts.

Overall, the proposal addresses the strategic need for physical data storage infrastructure in New South Wales to facilitate the ongoing digital transformation and cater for changing population needs. The proposal will also activate vacant employment lands and provide employment opportunities for local residents, supporting local government employment objectives.

6.22.2 Recommended Mitigation Measures

Most of the potential social impacts can be managed adequately through mitigation measures outlined by relevant technical reports and as detailed within Table 70.

Table 70. Social Impact Mitigation Measures	
Purpose	Measures
Way of life	
Reduce private vehicle travel to the site to alleviate traffic issues	Development of a Green Travel Plan to encourage sustainable transport options, as well as a Travel Access Guide for residents, staff and visitors outlining alternative transport options to the site. Patch note this has already been prepared to supplement the SSDA.
Health and wellbeing	
Mitigate noise and vibration impacts during construction	Development of a Construction Noise and Vibration Management Plan, with specific mitigations including: • Liaising with community about planned noisy activities • Using quieter equipment and ensuring it is maintained • Adopting noise reduction processes on site • Scheduling noisy activities at less sensitive times • Reduce vehicle reversing and truck idling on site • Educating staff about quiet work practices • Ongoing monitoring of noise and vibration levels.
Surroundings	

Table 70. Social Impact Mitigation Measures	
Purpose	Measures
Reduce embodied carbon	Seeking out opportunities for building materials with lower embodied carbon, including low embodied carbon steel or concrete products.
Minimise the impact of water usage on site	Implementing water saving initiatives, such as: • Having 50% recycled water in all concrete during construction • Using high-efficiency equipment to balance water and energy usage, • Monitoring water usage across the site • Using sub-soil irrigation to reduce water demand • Development of a Climate Change Adaptation Plan, which is currently under way.
Address energy consumption of facilities and further assess climate risks	Development of a Climate Change Adaptation Plan, which is currently under way.
Improve integration of the new buildings with the surrounding area	Minor additional landscaping, building material and lighting alterations.
Source: Astrolabe	

6.23 Waste Management

JBS&G Australia Pty Ltd (JBS&G) have prepared a Waste Management Plan (WMP) for the proposal which is contained in **Appendix 35** of the EIS. The WMP provides:

- Details of quantities and classification of all waste streams to be generated on site during the development (addressed in Sections 6.1 – 6.3 of the WMP);
- Details of waste handling storage and disposal during development (addressed in Section 6.4 of the WMP); and
- Details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the *NSW Waste and Sustainable Materials Strategy 2041* (addressed in Sections 6.5 and 7 of the WMP).

6.23.1 Operational Waste and Recycling Generation

In order to estimate likely waste quantities during operation, the WMP divides the proposal into the two main function areas (data halls and offices).

Operational Waste Generation for Office Areas

The WMP has assumed that the main offices of each of the data centres will be occupied sporadically during maintenance works. Given the low and sporadic occupant rates the volume of waste produced per week is difficult to calculate. For this WMP a 50% occupancy rate has been assumed (i.e. 3.5 days occupation per week).

JBS&G have estimated the waste and recycling to be generated from the office areas in accordance with Table 72 on an ongoing basis. They have assumed a rate of 2,626sqm GFA per data centre.

Table 71. Estimated Operational Waste Volumes for Office Areas			
Waste Type	Single data centre	Building total/week*	Campus total/week*
General Waste Volume (10L/100sqm/day)	263L / day	920 L	5,520 L
Recycling Volume (15L/100sqm/day)	394L / day	1,379 L	8,274 L
*Assuming a 50% occupancy rate			
Source: Table 6.4 Waste Management Plan, JBS&G			

Operational Waste Generation for Data Halls

The data halls will only be occupied sporadically during maintenance works and therefore a waste generation rate per area is not appropriate to estimate waste during operation.

Waste generation from the process of unpacking and installing servers in the data halls of the data centre is determined by the rate and quantity of servers being installed. This fluctuates day to day, week to week and month to month. It is understood that these areas are likely to generate significant quantities of e-waste including cabling, computer hardware, services etc. as part of maintenance and upgrades.

Waste may be stored in the waste storage room or in a room designated for bulky and hazardous wastes.

Operational staff should collect this e-waste and recycle it so that it is not disposed of in landfill. A bin should also be provided within each data centre building to allow for other e-waste to be collected and recycled.

Waste Management and Storage

Details of the size of waste storage area (WSA) required (per building) is summarised in Table 72. It is anticipated that only one (1) weekly collection will be required.

Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors will be posted at the Development as appropriate. The design and use of safety signs will comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describe the types of materials designated for each bin.

Table 72. Operational Waste and Recycling Storage		
Bin option	Number of bins required per building	Waste Storage Area per building
Option 1: 660 L	General Waste: 2x 660 L Recycling: 3x 660 L E-waste: 1x 660 L	1.88sqm 2.82sqm 0.94sqm Total = 5.64sqm
Option 2: 240 L wheelie	General Waste: 4x 240 L Recycling: 6x 240 L E-waste: 1x 240 L	1.72sqm 2.58sqm 0.43sqm Total = 4.73sqm
Source: Table 6.5 Waste Management Plan, JBS&G		

Waste Collection

Waste will be collected from each of the WSAs by a private waste contractor.

Operational staff will be responsible for overseeing the waste management systems. The relevant staff will work closely with the private waste contractor regarding the schedule for collection and presentation of bins. The staff members will be responsible for maintaining the bin stores in a clean and tidy condition at all times, and ensuring bins are washed regularly.

Upon arrival at site, the contractor will notify security at the site entrance who will provide access. The truck will then drive to each of the WSAs. The contractor is likely to use a rear lift truck to enable the collection of the proposed 660L and 240L bins. The roads within the development have been designed to allow adequate access for these trucks.

6.23.2 Construction Waste and Recycling Generation

Limited demolition will be required in order to facilitate the proposal beyond minor site preparation and trenching works to facilitate the proposal, given separate approvals.

Table 73 illustrates the anticipated volumes of materials generated at this development during the construction stage and the estimated rates of recovery. Of the 24,521t of anticipated construction waste, 80.8% (19,817t) is expected to be diverted from landfill (above the minimum 80% target).

Waste generated during the construction stage of the development will be managed by the principal contractor and sub-contractors, with materials being reused and recycled wherever possible. The construction contractors will be responsible for managing the construction waste and appropriate waste storage areas, making sure waste and recycling is removed from site, and taken to an appropriate processor/disposal site.

Table 73. Approximate Quantities of Waste Generated During Construction Phase			
Material	Tonnes (t)	Typical Recycling Rates %*	Estimated Tonnes Diverted from Landfill
Masonry materials (including asphalt, concrete, bricks, tiles, rubble, plasterboard and cement sheets)	17,811	95%	16,920
Organics (including food organics, garden organics and timber)	275	95	261
Plastics (including PET and HDPE)	10	40	4
Glass	5	95	5
Metals (including steel, aluminium and non-Ferrous)	835	20	167
Paper and Cardboard	15	95	15
Hazardous Material (including contaminated soil and chemicals)	138	0	0
Other (including leather/textiles, tyres/rubber and composites)	5,432	45	2,445
Total	24,521	80.8%	19,817
*The conversion of materials from volume to tonnes is based on the information provided in <i>NSW Waste Avoidance and Based on amounts provided within the NSW Waste Avoidance and Resource Recovery Strategy Progress Report 2014–15 and experience from similar developments.</i>			
Source: Tables 5.3 and 5.4 Waste Management Plan, JBS&G			

6.23.3 Waste and Recycling Mitigation Measures

Operational Waste Mitigation Measures

The following mitigation measures are recommended:

- Waste generated during the operation stage of the development will be managed by the operational staff in line with the mitigation measures included in the WMP.
- Waste will be collected by a private waste contractor.
- Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors will be posted at the Development as appropriate. The design and use of safety signs will comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describe the types of materials designated for each bin.

Construction Waste Mitigation Measures

The following mitigation measures are recommended:

- Waste generated during the demolition and construction stage of the development will be managed by the principal contractor and sub-contractors in line with the mitigation measures included in the WMP.
- Where possible, all demolition and construction materials would be recycled either on-site through reuse or offsite at a licensed facility. Waste would be transported and disposed of offsite by a licensed contractor to a licensed landfill facility.
- Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors will be posted at the Development as appropriate. The design and use of safety signs will comply with Australian Standard AS 1319 for safety signs and Australian Standards and NSW EPA for recycling signage, and clearly describe the types of materials designated for each bin.

6.24 Crime Prevention

Crime Prevention through Environmental Design (CPTED) is a crime prevention strategy which reduces opportunities for crime by using design and place management principles.

Patch has relied on the *Crime prevention and the assessment of development applications: Guidelines under section 79C of the Environmental Planning and Assessment Act 1979*¹ guidelines prepared by the NSW Department of Urban Affairs and Planning (2001). The guidelines can be applied in the assessment of development applications to ensure that approvals are not creating or exacerbating crime risk.

Four principles are included in the guidelines that need to be used in the assessment of applications to minimise the opportunity for crime:

- Surveillance;
- Access control;
- Territorial reinforcement; and
- Space management.

Surveillance

¹ https://www.police.nsw.gov.au/__data/assets/pdf_file/0003/9390/duapguide_s79c.pdf

Good surveillance is provided when people can see what others are doing. The layout of the Proposal ensures sightlines into and out of the site are maintained, with open fencing proposed, and carparking areas open and well surveyed.

Access Control

The site will be security monitored, with access controlled via boom gates, accessible via swipe card. Visitors and delivery drivers will have access provided via security at the gatehouse.

Territorial Reinforcement

Territorial reinforcement relates to community ownership of public spaces, and can be achieved through design that encourages gathering, provides clear transitions and boundaries between public and private spaces, and includes design cues on who is to use spaces and for what purposes.

The principle of territorial reinforcement is not strictly relevant to the Proposal given that it is not a public space. Nevertheless, territorial reinforcement will be provided by strong barrier fencing and landscaping which will indicate the land as private property.

Space Management

Space management strategies include site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out pedestrian and car park lighting and the removal or refurbishment of decayed physical elements. These are ongoing matters which will be implemented into operations.

6.25 BCA Compliance

The purpose of the assessment is to provide surety to the Consent Authority that the proposed development has been assessed and can comply with the BCA and that subsequent compliance with the provisions of Parts C, D and E of the BCA will not give rise to significant design amendments.

Overall, the BCA report prepared confirms that compliance with the National Construction Code Series (Volume 1) Building Code of Australia 2022 is readily achievable subject to further consideration of the proposal being undertaken during detailed design.

6.26 Accessibility

An Accessibility Report has been prepared by MBC Group and is provided in **Appendix 10** the EIS and provides an assessment against the AS1428 series and the *National Construction Code of Australia/Access Code* (NCC) for the Proposal.

The Accessibility Report provides an assessment of the development being provided with equitable access and to determine the consistency of design with the *National Construction Code of Australia/Access Code* (NCC) and *The Disability (Access to Premises - Buildings) Standards 2010* (Premises Standard). The intent of the Accessibility Report is to ensure that the Proposal is compliant with the requirements of the *Disability Discrimination Act 1992* (DDA) and Disability Discrimination Law at State Level. The Access Audit Report contained within the Accessibility Report, can be summarised as follows:

- *Based on the proposed documentation provided, it has been identified that the current design effectively addresses the necessary accessibility requirements at this stage. The design demonstrates a high level of feasibility in achieving these accessibility goals. This is to be verified at the next stage for consistency.*

7 Project Justification

This EIS provides comprehensive consideration and assessment of the potential environmental, social, and economic impacts of the development, and is supported by a suite of technical studies and specialist reports which form the relevant appendices.

This chapter provides a holistic assessment, ultimately considering both the negative and positive impacts of the project, and its overall justification for approval. It includes:

- A summary of the key environmental impacts associated with the project, how these have been assessed, and predominant outcomes. This also includes a summary of how the development as a whole has responded to environmental constraints and minimised its impacts on surrounding sensitive areas;
- A summary of the project's social impacts;
- A summary of the projects economic impacts;
- The project's developer contributions and planning agreements;
- Consideration of the suitability of the site for the proposed development;
- Consideration of whether the proposed development is in the public interest; and
- An ultimate justification for the project's approval, based on the above dot points.

7.1 Environmental Impacts

A summary of the predominant environmental impacts, as described in Chapter 6 of this EIS is provided in Table 74 below.

Table 74. Summary of Environmental Considerations	
Item	Summary of Impacts and/or Mitigations
Built form, urban design and landscape response	Urban design principles have been adopted when determining building siting, massing and grouping arrangements to best balance the site opportunities and characteristics and CDC's required functional and technical outcomes. The site master plan and built form design have been prepared in response to an urban design study of the site's context, an in-depth site analysis and informed by an understanding of the desired future character for the Marsden Park Industrial Precinct and its realisation as an employment precinct. In relation to landscaping, whilst the operation of the data centre requires the provision of visual access and clear sight lines, it is recognised that the proposal also needs to incorporate a unified landscape treatment to contribute towards biodiversity, soften built form as viewed from the public domain, and enhance visual amenity. As such, retained vegetation and landscape areas are proposed at the site are provided that will achieve this. Planted areas within the development will incorporate a mix of medium and large canopy trees and an understorey of low shrubs and grasses/groundcovers. Decorative foliage and flowering species are to highlight the entry from Hollinsworth Road as well as access points to the buildings along the internal central road.
Visual impact	The visual catchment of the proposal is limited to within approximately 750m of the site. This is predominantly due to the existing built environment, topographic forms, and existing vegetation. The proposal site is located within the local Light Industrial Zone (IN2) and is surrounded by a range of industrial and commercial built forms which are consistent with the area. The broader site context consists of a wide range of zoning types of business and industrial along with infrastructure, residential, and

Table 74. Summary of Environmental Considerations

Item	Summary of Impacts and/or Mitigations
	recreation. The majority of neighbouring residential is located to the south of the proposal site with a semi-vegetated buffer zone approximately 118m wide. It is noted that this buffer is zoned as SP2 Infrastructure and has the potential to be developed as an arterial road. The site itself is currently unused with partially cleared vegetation which is set to be predominantly cleared as part of an approved initial Early Works DA. The remaining vegetation is to be thinned in order to comply with bush fire guidelines as per bush fire consultant report. The visual catchment area is not considered an area of high scenic value within the landscape. While the proposal would be visible from many viewpoints, the proposal will have a low to moderate cumulative visual impact. This is as a result of it protruding over the line of existing vegetation, whilst also being partially screened by existing and proposed vegetation It is considered that any perceived adverse impacts can be appropriately mitigated through the adoption of urban design principles, the overall landscaping strategy undertaken at the site and the retainment and enhancement of buffer zone planting along the southern and eastern edges of the site.
Noise and Vibration	A Construction Noise and Vibration Impact Assessment (CNVIA) and an Operational Noise and Vibration impact Assessment (ONVIA) have been prepared to support this SSDA, providing an overview of the existing acoustic environment, operational noise emission criteria, and potential noise impacts arising from operations, road traffic, and construction. Construction Noise In relation to construction acoustic impacts, the CNVIA found that construction activities during each of the construction stages are predicted to exceed the NML for standard hours and outside of working hours criteria at the majority of residential receivers (with the exception of R08) during calm and prevailing wind conditions. Similarly, the CNVIA found that construction activities during each of the construction stages in prevailing wind conditions are predicted to exceed the NML criteria at the Baitul Huda Mosque. Whilst construction noise levels in construction scenarios SC01, SC02 and SC03, are predicted to exceed the NML. However, none of the receivers are predicted to exceed the highly noise affected criteria of 75 dBA. Additionally, the above noise levels are considered conservative as it is unlikely that all plant and equipment will be operating concurrently. Therefore, the actual construction noise levels would be lower than the levels presented in the CNVIA. It is considered that where exceedances occur, these can be appropriately minimised in line with the ICNG recommendations. Operational Noise The predicted noise level modelling in the ONVIA found that in a typical operation scenario (Scenario 1) and in a maintenance scenario (Scenario 2), the noise impact to all surrounding receivers are expected to comply with the established noise criteria for all time periods and stability categories. The noise impact during an emergency scenario (Scenario 3) is expected to exceed the established criteria in some instances. However, this is representative of the worst-case emergency scenario and is expected to be short-term impact during a power outage (estimated to be up to a 1 hour event every 2 years). It should be noted that this assessment is highly conservative and is based on the maximum load operating conditions which is not expected to be representative of the development for several years. It is expected that the local noise environment

Table 74. Summary of Environmental Considerations

Item	Summary of Impacts and/or Mitigations
	will also undergo change over these years, and by which point the contribution from the development will be notably less. Further to the above, the acoustic assessment has been conducted to the boundary or the most affected point on a property as per the requirements of the NSW EPA NPfI. When considering the noise intrusion into a habitable area of a residential property, it is expected to be significantly reduced due to the attenuation provided by the building's façade. This means that while boundary levels might be higher, the actual impact on indoor noise levels is considerably lower and likely to be inaudible. All feasible and effective best practice mitigation measures for the Project have been rigorously assessed to minimise acoustic impacts to the greatest extent practicable. This includes the selection of alternative plant equipment, and the introduction of noise mitigating barriers around the proposed chiller plants to reduce environmental impacts on nearby sensitive receptors and the surrounding area. This is seen to be an appropriate and proportionate mitigation strategy.
Hazards and Risks	A risk screening exercise has been undertaken to ensure that the storage of diesel fuel and lithium-ion batteries is compliant with State guidelines. The assessment finds that the goods are not included within storage threshold values of the relevant guidelines hence no detailed analysis is further required. The storage of batteries and diesel storage has also been shown to be generally compliant with relevant standards including AS/NZ S4681, AS IEC 62619, FM Global Property Loss Prevention Data Sheet 05-32, and AS 1940.
Air Quality	The AQIA prepared in support of the EIS found that, given the size of the site, the distance to sensitive receptors, and the activities to be performed, residual impacts associated with dust emissions from the would be anticipated to be 'low risk' during the construction phase of the project, should recommended mitigation measures be implemented appropriately. A worst-case scenario (Scenario 1) was assessed for the operation of the emergency back-up generators based on the event of a mains power failure. Under a worst-case operating scenario (Scenario 1) the predicted ground level concentrations at the nearby residential area to the south would be above the relevant NSW EPA impact assessment criteria for the assessed pollutants (NO₂, PM₁₀ and PM_{2.5}). A probability analysis for the likelihood of a worst-case scenario (Scenario 1) exceedance occurring in conjunction with the expected duration of an outage has been presented within the AQIA. The modelling predictions for this probabilistic scenario indicate levels would be below the applicable NSW EPA impact assessment criteria at all potentially affected sensitive receptors. In relation to operation, the AQIA predicted that under a realistic operating scenario (Scenario 2) reflective of the maintenance requirements on both annual and monthly schedules, the predicted ground-level concentrations of pollutants (NO₂, PM₁₀ and PM_{2.5}) in the adjacent residential area to the south are within the acceptable impact assessment criteria set by the NSW EPA. All feasible and effective best practice mitigation measures for the Project have been rigorously assessed to minimise emission impacts to the greatest extent practicable. This included consolidating the four (4) exhaust stacks into a single (1) flue stack to improve emissions and reduce environmental impacts on nearby sensitive receptors and the surrounding area. This configuration allows for increased diameter and greater stack height, extending above the datacentre roofline to reduce building wake effects and improve ground-level concentrations offsite. Nevertheless, additional management measures are recommended to further mitigate impacts as far as reasonably and feasibly practicable.
Traffic and Transport	Construction traffic impacts The expected number of heavy vehicles accessing the site per day during peak activity is currently unknown. However, based on similar projects, there is expected

Table 74. Summary of Environmental Considerations

Item	Summary of Impacts and/or Mitigations
	to be on average around 15 trucks per day accessing the site, or up to 50 trucks per day during peak activities (concrete pours). Construction vehicle movements will be minimised/ avoided during peak hours where possible. Light vehicle traffic generation would be largely generated by construction worker traffic movements to and from the site. Construction vehicles generated by the site would generally include vehicles up to 12.5-metre heavy rigid trucks, 18.1-metre truck and dog combinations and 19-metre semi-trailers. It is expected that the site would be able to accommodate the parking demand generated by the construction works. Notwithstanding this, car-pooling amongst workers and use of public transport would be strongly encouraged. It has been determined that the proposed construction activities are not expected to generate a negative impact on operation and safety of the surrounding road network. Operational traffic impacts The proposal provides for a development outcome which will include the provision of 265 car parking spaces, which will be sufficient to cater for the site. The proposed car parking layout is compliant with AS 2890 series as is demonstrated in this report. The site will be accessed from Hollinsworth Road, via a single left-in/ left-out driveway. The site access driveway can accommodate all vehicles up to and including 19m Articulated Vehicles (AV). All vehicles can enter and exit the site in a forward direction with independent movements throughout, where necessary. The peak hourly trip generation of the proposed development (133 trips during the AM and PM peak periods) are considered to be acceptable. SIDRA analysis was undertaken of the Hollinsworth Road/Richmond Road (signalised intersection), Hollinsworth Road/ Chifley Glade/ Bells Glade (roundabout) and Hollinsworth Road (roundabout) to determine the existing and proposed traffic conditions. The Richmond Road / Hollinsworth Road / Townson Road Intersection is anticipated to perform poorly in the opening year and future year scenarios. It should be noted that the deterioration is caused by the combined effect of trips generated by the proposed data centre, the proposed cold storage at 125 Hollinsworth Road, and the annual growth of traffic. TfNSW has recently undertaken early design works for the Richmond Road upgrade between M7 Motorway and Townson Road, including the intersection at Richmond Road/Townson Road/Hollinsworth Road intersection. A number of improvement measures are considered, including increasing the capacity of Richmond Road (from four lanes to six lanes) and a new flyover to connect with the M7 Motorway. It is understood that this is an ongoing project, and a more detailed design is currently being undertaken by TfNSW. The performance of the Hollinsworth Road / Chifley Glade / Bells Glade Intersection during the AM peak period is not anticipated to change significantly even in the 2036 future year. However, a noticeable increase in the 95th percentile queue length was noted in the PM peak under Scenario 3. The TIA shows that the west leg is experiencing long queues as a result of the extended queues at the Hollinsworth Road/Richmond Road intersection. The potential intersection upgrades to mitigate the traffic congestion at the Richmond Road signalised intersection is anticipated to also address the performance of the Chifley Glade Roundabout under the 2036 'with development' scenario. No issues are anticipated with the performance of the Hollinsworth Road Roundabout with minimal delays and queues. This translates to a LOS of A or B for all three analysis scenarios. It can therefore be concluded that safety and operation of the future road network

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Item	Summary of Impacts and/or Mitigations
	would not be negatively impacted by the proposed development.
Contamination and Remediation	The site is proposed to be remediated under a separate Early Works DA (DA-24-00386) which was approved by Blacktown City Council on 11 September 2024 through a Remediation Action Plan (RAP) (report no. 204124) prepared by Stantec Australia Pty Ltd dated 06 May 2024. Stantec considers that contamination onsite has been appropriately considered and following remediation, the site can be made suitable for the proposed land use as a data centre. As such, there is no further need to consider these matters under this SSDA.
Civil, stormwater and geotechnical considerations	The proposed earthworks have been proposed to provide an earthworks pad for the data centre building while minimising the size of retaining walls on site. Retaining walls have been provided around the development footprint perimeter to suit the proposed building pad. Safety barriers have been included where retaining walls are supporting the circulation roads. The stormwater quantity management plan demonstrates the stormwater network to adequately manage and dispose of stormwater runoff generated from the site. This includes the diversion of neighbouring surface flows which discharge to the proposed lot via a diversion swale. An OSD system has been provided in accordance with all relevant guidelines to mitigate any potential increase of surface flows from the site. Stormwater discharges have included a tail out into the retained vegetated area to minimise the effects downstream. Water quality treatments proposed would adequately treat the stormwater runoff generated from the site. This includes the provision of a rainwater tank that is sized to provide 80% of the non-potable water for irrigation and toilet flushing. Soil erosion and sediment control measures have been included for the proposed development. These measures have been prepared in accordance with industry best practices and consideration of the anticipated pollution sources to occur during construction.
Flooding	The proposed development site is not within a flood affected area and, as such, no flood-related development controls apply to the site. As no upstream catchments discharge onto the development site, the risk of local flooding is restricted to runoff falling on the site. The south-east corner of the site is prone to flooding in the case of a 100-year storm event, making it a flood storage region, this will not be impacted by the development. The design of the site stormwater drainage system will be undertaken to ensure the risk of local flooding is minimised on the site. As detailed in the IWMP, the proposed developed site has been planned so that surface levels to all existing floodplain areas in the 1% AEP storm are not changed. With new stormwater infrastructure being constructed as part of the development, there will be a reduction of runoff to this southeastern corner of the site. As no change is occurring within the flood extents and a reduction of runoff is occurring to the existing 1% AEP flood plain, the development will have no negative impacts to flooding conditions downstream of site. As the extent of flooding on site is within a section of site separated from operations at the proposed development, no management measures will be required, outside of isolation. No Flood Emergency Response plan will be required, as flooding issues on site are not within the operational precinct, and will not prevent ingress or egress out of site in any direction. Subsequently, flooding at the site requires no further consideration.
Ecologically Sustainable Development	The design of the data centre responds to ESD principles through its features which minimise energy and water consumption, improve stormwater quality, and manages pollution. The office component of the proposed development will target

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	a minimum NABERS Energy rating of 5.5-stars; and a minimum NABERS Water rating of 3-stars. The proposed development is supported by a NABERS Embodied Emissions Form.
Climate Resilience	The Proposal will strive to implement climate adaptation principles to increase the resilience of the development to risks caused by projected changes in climate. This will include designing for energy efficiency and grid resilience and installing additional power sources such as back-up generators or battery storage located above the flooding heights. A Climate Change Adaptation Plan is recommended to be developed to further assess the projected climate risks for the site. This will allow for early mitigation for any elements found to be at high-risk to be designed for long-term safety, security, and operation.
Greenhouse gas and energy efficiency	The GHG Report identifies that large-scale data centres can achieve higher efficiencies over smaller-scale ones. In this particular case, Marsden Park data centre campus is being design to a Power Usage Effectiveness (PUE) of 1.3. This reflects a 19% improvement over the market average PUE of 1.61 (4 Star NABERS Data Centre Infrastructure Rating). Additionally, CDC has a strong focus on sustainability being the only data centre company in Australia with Science based targets aiming for Net zero carbon by 2030 for scope 1 and 2 emissions.
Aboriginal Heritage	A number of Aboriginal objects have been identified within the site. The Aboriginal objects were identified during previous assessment of the site and the archaeological test excavation and registered on AHIMS as two sites (#45-5-4619 and #45-5-5882). An Aboriginal Heritage Impact Permit (AHIP) application will be submitted for these areas in order to disturb these artefacts. The works that will disturb the Aboriginal objects are proposed under a separate planning pathway for an Early Works DA (PAN-426243) which was approved by Blacktown City Council on 11 September 2024. The works proposed within the SSDA are not expected to disturb any artefacts, and do not require an additional AHIP. Notwithstanding, a number of mitigation measures are proposed to be adopted to ensure there are no additional potential impacts on Aboriginal cultural heritage beyond those identified as a result of the Early Works DA.
Non-Aboriginal Heritage	Research and analysis undertaken for this report did not discover any significant historical uses for the site and it has been concluded that the site does not possess historical heritage significance or archaeological significance.
Biodiversity	The biodiversity impacts associated with the subject SSDA are therefore negligible. The APZ encroaches into the non bio-certified land by only approximately 30sqm requiring the removal of five (5) additional trees above those approved for clearing under the Early Works DA. Any vegetation clearing within the non-bio-certified land will be significantly minimal in comparison to the area of the retained vegetation within the bio-certified land (4,000sqm). The proposed clearing is considered acceptable on merit.
Waste Management	A Waste Management Plan accompanying the SSDA considers the source, management, and location of waste that may arise at the site during the construction and operational phases. The plan indicates that the appropriate bin storage areas have been provided as a part of the development, with ongoing servicing to be provided by private service providers.

As detailed in Table 74, a range of environmental considerations have been taken duly into account in the preparation of this SSDA.

The most significant environmental impact associated with the proposal arise from the testing and emergency operation of the back-up generators.

Beyond the impacts associated with the testing and emergency operation of the back-up generators, it is considered that the impact of the proposal is low and that any potential adverse impacts which may result have been minimised or appropriately managed through proposed mitigation strategies.

Where short term impacts have the potential to occur throughout construction, mitigation measures have been proposed to help minimise their effect, which include (but are not limited to) the following:

- Preparing a CEMP to manage and monitor air emissions during construction;
- Undertaking early notifications and providing the community with warnings of potential disruptions;
- Establishing a complaints management system; and
- Undertaking verification monitoring.

A series of all mitigations associated with the approval, including those described above, are provided as **Appendix 3** of the EIS.

In relation to the design of the proposal, it is considered that an appropriate balance has been struck between facilitating the bespoke built form requirements associated with data centres and the need to provide a built form and landscaping outcome which does not result in adverse visual or amenity impacts, or appear at odds with the broader landscape character. This has been achieved through the careful master planning of the site, an architecturally articulated design response, the retention of existing vegetation along the southern and eastern boundaries, and the proposed provision of new landscaping along the frontages of the site, which will provide an effective screen over the long term.

From an operational sustainability perspective, the future development also incorporates strategies related to water sensitive urban design, passive heating and cooling, the use of sustainable materials, and will target PUE of 1.3 and WUE of nearly 0 l/kWh that exceed both Australian and global best practice. These all will result in an improved environmental outcome upon the site, particularly when compared to other potential uses. Furthermore, it is noted that 100% of the development's energy demand is to be met using electricity. Doing so will ensure the development is future-proof as the electrical grid greens, embedding resilience. Using electricity over fossil-fuels for operations on site also increases overall efficiency of the development as wasted energy through the conversion of energy is minimized. This also aligns with the Government's goal of net zero emissions by 2050.

In the limited circumstances where negative operational impacts associated with the proposal could occur, these have been assessed in detail within the accompanying documentation which, as outlined in Table 74, have demonstrated are marginal or acceptable. Mitigation measures to be implemented for the operational phase of the proposal are also contained in **Appendix 3** of the EIS.

7.2 Social Impacts

As outlined in Chapter 5, prior to the finalisation of this EIS the proposal was subject to community and stakeholder engagement in order to build an understanding of the views of key parties and amend the scheme if and as needed.

Nine (9) responses to the online survey have been received (between 29 May – 1 July 2024) from members of the community through the pre-lodgement consultation phase, however, the community will be provided with an additional opportunity to make comments on the scheme throughout the statutory exhibition phase associated with the SSDA.

In relation to the project's social impacts, the key negative impacts are the destruction of a Potential Aboriginal Deposit on the site, the contribution to cumulative traffic issues along Richmond Road, the removal of most trees on site, and the health and wellbeing impacts associated with noise generated during construction and operation. Key positive impacts include planting across the site resulting in a positive way of life impact, and livelihood impacts in the form of employment opportunities.

While these impacts are acknowledged, it is considered that through the adoption of appropriate mitigation measures, they can be appropriately managed as detailed throughout this report, the relevant appendices and in the mitigation measures provided as **Appendix 3** of the EIS.

7.3 Economic Impacts

The proposal has an estimated development cost (EDC) of \$3,113,226,273 exc. GST and will result in the provision of critical infrastructure that is increasingly important to the continued prosperity of the digital economy and represents a significant private investment in NSW.

During construction, the proposal is expected to provide full time employment (FTE) for up to 220 workers and once operational 265 full-time employees are expected to be employed. This excludes contractors and subcontractors, who will also gain employment and work from the operation of the facility.

More importantly, however, the proposal will provide economic benefit through the provision of a state-of-the-art data centre which will provide a means of ensuring that the critical data of business, organisations and government is able to be safely stored and secured locally, nationally and internationally.

The proposal is a direct response to demand within the NSW market for such facilities and will provide infrastructure that provides a secure, reliable, and cost-effective way to store and process data, while also offering scalability and high levels of uptime.

7.4 Contributions and Public Benefit

The payment of Section 7.11 contributions will be made in accordance with Blacktown City Council's *Section 7.11 Contributions Plan No.21 – Marsden Park (IPART Reviewed Contributions Plan)* (s7.11 Plan) which came in to force on 27 May 2021. The site is located within the Marsden Park Industrial Precinct for the purposes of the s7.11 Plan.

The s7.11 nominates a number of different contribution rates for works on either a per hectare or per person basis. Based on a project site area of 15.5ha and an expected operational employment generation figure of 265 FTE jobs, the proposal would be required to pay \$14,482,225.96 (indexed to date valid to 31 July 2024).

The proposed development will also be subject to the State based *Housing and Productivity Contribution* (2023), which imposes a rate of \$15.74 per sqm of new GFA for industrial development (indexed base rate as of 1 July 2024) which equates to \$4,025,017.06.

It is understood that this rate will be indexed at the time of payment to ensure that the value of the contribution is not eroded over time.

7.5 Suitability of the Site

Following the analysis undertaken as a part of this environmental impact assessment, it is concluded that the site is suitable for the proposed use as a data centre, given:

- The proposal is consistent with the IN2 – Light Industrial Zone objectives, is permitted with consent and satisfactorily addresses the relevant provisions in *Appendix 13 Marsden Park Industrial Precinct Plan* of the *State Environmental Planning Policy (Precincts—Central River City) 2021*;

- The proposal will facilitate industrial development in the Marsden Park Industrial Precinct and will support business activity that occurs in the Marsden Park strategic centre, the Central River City, and Greater Sydney;
- The proposal is also located adjacent to the existing Endeavour Energy 11kV South Marsden Park Zone Substation which provides certainty of power supply initially and prior to the establishment of the proposed onsite 132/11kV Zone Substation;
- The proposal will support the retention and management of industrial and urban services land, by safe-guarding industrially zoned land from conversion to residential development, including conversion to mixed-use zones;
- The proposed development will optimise use of a vacant industrial site and deliver strategic objectives to support the growth of targeted industry sectors within the Marsden Park strategic centre. It achieves this by utilising vacant industrial land within the Marsden Park Industrial Precinct for a high technology industry use which will contribute to and support the digital economy. This will in turn will support the growth of targeted industry sectors more broadly;
- The character and scale of the development is compatible and consistent with its existing and likely future context. There are no significant environmental constraints that would limit the project from being developed at the site; and
- The site is highly accessible and well serviced by transport, and is within close proximity of Richmond Road, and the M7 Motorway with bus services linking the area with Rouse Hill Town Centre, Blacktown Station and Tallawong Station.

7.6 Public Interest

The proposed development is considered in the public interest for the following reasons:

- The proposed development is consistent with relevant State and local strategic plans and complies with the relevant State and local planning controls including the relevant provisions in *Appendix 13 Marsden Park Industrial Precinct Plan* of the *State Environmental Planning Policy (Precincts—Central River City) 2021*. The proposal is in the public interest because it is consistent with the Objects of the Act, and the objectives of the IN2 – Light Industrial Zone;
- Beyond the impacts associated with the testing of generators and emergency use of generators in the event of a power outage, it is considered that the environmental impact of the proposal is low and that any potential adverse impacts which may result can be minimised or appropriately managed through proposed mitigation strategies;
- In relation to the design of the proposal, it is considered that an appropriate balance has been struck between facilitating the bespoke built form requirements associated with data centres and the need to provide a built form and landscaping outcome which does not result in adverse visual, or amenity impacts, or appear at odds with the broader industrial character;
- The proposal will provide for the economic and orderly use of land intended for industrial purposes, and will see a formerly under-utilised site renewed and providing for new jobs during construction and operation;
- The proposal will provide employment opportunities for workers in the locality and Greater Sydney with approximately 220 full time equivalent (FTE) construction jobs over a two-year construction period and approximately 265 direct operational jobs in the information and technology, security and property management industries;

- No major issues that have not been appropriately addressed within the EIS relating to the construction and operation of the development were raised during the pre-lodgement consultation with Council, Government and agency stakeholders. The community submission raised has been appropriately responded to in Section 5.3 of the report;
- The site will provide for a development outcome which will contribute to the continued success of the NSW and Australian economy through allowing private investment which provides an increasingly critical technological asset class of development to be delivered at the site; and
- The proposed development aligns with the operational needs of the Proponent, supporting the long-term potential and objectives of the locality.

Having considered all relevant matters, it is concluded that the proposed development is appropriate for the site and approval is recommended, subject to appropriate conditions of consent.

7.7 Justification

As outlined in Sections 7.1 through 7.6 above:

- A series of environmental impacts have been considered associated with the proposal. Although there are expected to be some construction-phase impacts, operational impacts are minimal and acceptable. A series of mitigations have also been proposed which are summarised throughout the EIS and have been combined in **Appendix 3**. Mitigation measures proposed will further limit the impact of the proposal;
- Overall social impacts are considered to be a net positive, on the basis of the various recommended mitigations (outlined in this EIS) being implemented;
- There are positive economic outcomes associated with the Proposal, which will provide not only for local employment opportunities, but will also contribute towards the growth of the Central City District and Greater Sydney more broadly; and
- The site is considered suitable for the proposed development.

Given the above, the number of long-term positive outcomes associated with the Proposal are considered to outweigh the impacts, which are mostly short-term and associated with the construction phase. As such, the Proposal is considered justifiable, and to be in the public interest.

8 Conclusion and Recommendation

This EIS has been prepared by Patch on behalf of Canberra Data Centres Pty Ltd in support of an SSDA for construction and operation of a data centre campus with an operational capacity of 504 megawatts (MW) (IT Load) on land known as 105 and 113 Hollinsworth Road, Marsden Park. The EIS responds to SEARs (SSD-70889211), and has been certified by a certified REAP.

The EIS demonstrates that, taking into consideration those matters required under 4.15 of the EP&A Act 1979, the Proposal is both suitable for the site and in the public interest for the following reasons:

- The development is permissible in the IN2 – Light Industrial Zone and has been shown to be consistent with the objectives of the zone;
- Beyond the impacts associated with the testing of generators and emergency use of generators in the event of a power outage, it is considered that the environmental impact of the Proposal is low and that any potential adverse impacts which may result can be minimised or appropriately managed through proposed mitigation strategies;
- In relation to the design of the Proposal, it is considered that an appropriate balance has been struck between facilitating the bespoke built form requirements associated with data centres and the need to provide a built form and landscaping outcome which does not result in adverse visual, or amenity impacts, or appear at odds with the broader industrial character;
- The development will provide for the economic and orderly use of land intended for industrial purposes, and will see a formerly under-utilised site renewed and providing for new jobs during construction and operation; and
- The site will provide for a development outcome which will contribute to the continued success of the NSW and Australian economy through allowing private investment which provides an increasingly critical technological asset class of development to be delivered at the site.

As demonstrated above, the social, environmental, and economic impacts of the proposal have been assessed in detail as a part of this EIS and supporting documentation. It has been shown that the proposal will not result in any unjustified or unmanageable impacts on the surrounding community, or flora and fauna.

Based on the justification provided within this chapter, and the detail outlined within this EIS as a whole, it is concluded that the proposal is in the public interest, and Patch recommends the proposal for approval. On this basis, there is strong justification for the proposal and the Delegate for the Minister is requested to grant development consent to enable the proposal to proceed.



P A T C H

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