NEXTDC S4 DATA CENTRE

16 Johnston Crescent, Horsley Park

Environmental Impact Statement

Prepared for
NEXTDC LIMITED
20 June 2024

URBIS

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Project Code	P0033048
Report Number	Final

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

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SIGNED DECLARATION

Project details		
Project name	NEXTDC S4 Data Centre	
Application number	SSD-63741210	
Address of the land in respect of which the development application is made	16 Johnston Crescent, Horsley Park, NSW, 2175	
Applicant details		
Applicant name	NEXTDC Limited	
Applicant address	GPO Box 3219, Brisbane QLD 4001 Phone: +61 7 3177 4777	
Details of people by whom this EIS was prepared		
Names and professional qualifications	Jennifer Cooper Bachelor Town Planning (Hons), (UNSW)	Christopher Croucamp Master of Planning (UTS)
Address	Level 8, Angel Place, 123 Pitt Street, Sydney NSW 2000	

Declaration

The undersigned declares that this EIS:

- has been prepared in accordance with section 190 - 192 of 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;
- contains the information required under the *Registered Environmental Assessment Practitioner Guidelines*;
- addresses the Planning Secretary's environmental assessment requirements (**SEARs**) for the Project;
- identifies and addresses the relevant statutory requirements for the Project, 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 Project as a whole, having regard to the economic, environmental and social impacts of the Project and the principles of ecologically sustainable development;
- contains a consolidated description of the Project 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 Project as a whole.	
Signatures	
Jennifer Cooper, Director (RPIA)	
Date	20 June 2024

GLOSSARY AND ABBREVIATIONS

Reference	Description
ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
AEP	Annual Exceedance Probability
AHD	Australia Height Datum
ANEF	Australian Noise Exposure Forecast
AQIA	Air Quality Impact Assessment
ASS	Acid Sulphate Soils
BC Act	*Biodiversity Conservation Act 2016*
BC Reg	*Biodiversity Conservation Regulation 2017*
BDAR	Biodiversity Development Assessment Report
CBD	Central Business District
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CMP	Construction Management Plan
CTMP	Construction Traffic Management Plan
COPC	Contaminants of Potential Concern
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DP	Deposited Plan
DPH&I	NSW Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EDC	Estimated Development Cost
EPA	New South Wales Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA Regulation	*Environmental Planning and Assessment Regulation 2021*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*

Reference	Description
EPI	Environmental Planning Instrument
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically Sustainable Development
FLEP 2013	*Fairfield Local Environmental Plan 2013*
FPL	Flood Planning Level
GANSW	Government Architect New South Wales
GFA	Gross Floor Area
GTP	Green Travel Plan
HIS	Heritage Impact Statement
HIPAP	Hazardous Industry Planning Advisory Paper
ICT	Information and Communication Technology
I&E SEPP	*State Environmental Planning Policy (Industry and Employment) 2021*
Kv	Kilovolt
LEC	Land and Environment Court
LEP	Local Environmental Plan
LGA	Local Government Area
LSPS	Local Strategic Planning Statement
MW	Megawatts
MWe	Megawatts of Electricity
MCX	Mission Critical Office
MNES	Matters of National Environmental Significance
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
NML	Noise Management Level
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
OEMP	Operational Environmental Management Plan
PAD	Potential Archaeological Deposit
PBP	Planning for Bushfire Protection

Reference	Description
PMF	Probable Maximum Flood
POM	Plan of Management
PSI	Preliminary Site Investigation
Planning Systems SEPP	*State Environmental Planning Policy (Planning Systems) 2021*
SAII	Serious and Irreversible Impacts
R&H SEPP	*State Environmental Planning Policy (Resilience and Hazards) 2021*
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SIA	Social Impact Assessment
Site	16 Johnston Crescent, Horsley Park
SSD	State Significant Development
SSDA	State Significant Development Application
T&I SEPP	*State Environmental Planning Policy (Transport and Infrastructure) 2021*
TfNSW	Transport for New South Wales
TIA	Traffic Impact Assessment
VIA	Visual Impact Assessment
WCM	Water Cycle Management
WMP	Waste Management Plan
WSEA	Western Sydney Employment Area
WSEA Fairfield DCP	Western Sydney Employment Area – Fairfield Development Control Plan 2016
WSUD	Water Sensitive Urban Design

EXECUTIVE SUMMARY

This Environmental Impact Statement (**EIS**) has been prepared on behalf of NEXTDC Limited (**the Applicant**) in support of a State Significant Development Application (**SSDA**) for the for the staged construction and operation of a data centre at 16 Johnston Crescent, Horsely Park.

The proposed 'data centre' development has a total power consumption of 232 megawatts and accordingly, is classified as a State Significant Development (**SSD**) under schedule 1, clause 25(1) of the *State Environmental Planning Policy (Planning Systems) 2021*. This report has been prepared to address the Secretary's Environmental Assessment Requirements (**SEARs**) issued for the Project (**SSD-63741210**). This EIS concludes that the proposed development is suitable and warrants approval subject to the implementation of the following planned management and mitigation measures.

The S4 Data Centre (**S4 Proposal**) seeks to deliver a high-quality urban form that is compatible with the existing and future desired character of Horsley Park. It has been carefully designed to avoid adverse environmental impacts on nearby sensitive receivers. The site will benefit from being located within an emerging employment precinct (refer **Figure 1**), which includes the ESR Horsley Logistics Park, Oakdale Central and Oakdale South industrial estates. The Project will support business activity that occurs in other nearby established and emerging employment precincts, including Eastern Creek to the north, Huntingwood to the northeast, Wetherill Park to the east and Mamre Road to the west.

The site is located within the Western Sydney Employment Area (**WSEA**) and therefore the *State Environmental Planning Policy (Industry and Employment) 2021* (**I&E SEPP**) is the primary planning instrument applicable to the site.

Figure 1 Aerial Photograph

Source: Urbis, 2023

The intended outcomes of the Project are to:

- Deliver a state-of-the art 'campus style' data centre development in three stages to meet market demands for critically needed data storage space.
- Leverage the strategic location of the site to support the growth of Horsley Park and the wider WSEA as an emerging employment precinct and make a significant contribution to the delivery of strategic policy objectives.
- Provide for employment generating land uses including a significant component of ancillary office floorspace in a highly suitable and accessible location.
- Avoid unacceptable environmental and amenity impacts and provide ongoing compliance with operational legislative requirements.
- Achieve design excellence through high-quality architectural, urban and landscape design and sustainability measures to reduce energy consumption, while avoiding unacceptable environmental and adverse amenity impacts.

Feasible Alternatives

Various Project alternatives were considered for the required data centre development. A 'do nothing' approach was dismissed as the objectives of the Project would not be met. If the Project was not to proceed, the site would remain vacant, and the delivery of critically needed data storage space would not be realised.

Consideration was given to carrying out the development on alternative sites, however, these sites were dismissed based on their potential impacts which could not be mitigated, other site constraints, site servicing issues and operational inefficiencies. Alternative design options for the site were considered and dismissed based on substandard design and public amenity outcomes.

The siting and design of the proposed development, including a three-stage construction process, was resolved through a comprehensive analysis of the site opportunities and constraints in consultation with key stakeholders. It was identified as being the most suitable option to achieve the Project objectives as:

- The site is strategically located within Horsley Park which is identified as an emerging employment precinct with access to major arterial roads and the future WSI airport.
- The Proposal is compatible with the local context and will result in minimal impacts to the environment through the implementation of suitable mitigation measures where required.
- The site presents the most orderly and economic use and development of the land to deliver a new data storage facility.
- Existing infrastructure is readily available or can be augmented to cater for the utility needs of the S4 Proposal.
- The development can be achieved without having unacceptable environmental impacts in relation to traffic, noise, air quality, biodiversity, and visual impacts, including management and mitigation measures to avoid adverse impacts to sensitive receivers.

The key features of the preferred scheme are outlined in further detail below.

Development Description

The Project comprises the staged redevelopment of the site as outlined within the Architectural Plans prepared by HDR Architects and photomontage at **Figure 2**. The key features of the Proposal are summarised as follows:

- Site preparation works including bulk earthworks and tree removal.
- Staged construction and operation of five data centre buildings comprising a total gross floor area (**GFA**) of 63,654m^2 including 52,916m^2 of technical data hall floor space and 10,738m^2 of ancillary office and innovation floor space, including 'front of house' meeting and function spaces, and a café.
- Associated and ancillary on-site facilities on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 9,900m^2 of deep soil landscaping.

- Delivery of 232 megawatts of power, including a 330kV substation and a 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.

The Project will be delivered in three construction stages as follows:

- Stage 1 = Buildings A, B, C and substation
- Stage 2 = Building D
- Stage 3 = Building E

Figure 2 Photomontage – Street view from North East

Source: HDR, 2024

Consultation

Community consultation and stakeholder engagement has been undertaken by Urbis and the Project Team during the preparation of the SSDA. This includes direct engagement and consultation with:

- Adjoining landowners, tenants and businesses.
- Registered Aboriginal Parties (**RAPs**) including the Metropolitan Local Aboriginal Land Council.
- State and Local Government, agency and utility stakeholders as listed within the SEARs.

The outcomes of the community and stakeholder engagement have been incorporated into the Project and are discussed in detail at **Section 5** of this EIS.

Justification of the Project

This EIS assesses the development in accordance with relevant planning instruments and policies. The key issues identified in the SEARs have been assessed in detail, with specialist reports underpinning the key findings and recommendations identified in the Assessment of Impacts in **Section 6.**

It has been demonstrated that the likely impacts are either positive or can be appropriately managed and mitigated. Overall, the Project represents a positive development outcome for the site and surrounding area for the following reasons:

- **The Proposal is consistent with State and local strategic planning policies:**

  The Proposal is consistent with the relevant goals and strategies contained in:

  – *Greater Sydney Region Plan: A Metropolis of Three Cities*

  – *Our Greater Sydney 2056: Western City District Plan*

  – *Fairfield City 2040 Local Strategic Planning Statement*

  – *GANSW Better Placed*

  – *Future Transport Strategy 2056*

- **The Proposal satisfies the applicable local and State development controls:**

  The Proposal is permissible with consent in the IN1 General Industrial zone and meets the statutory requirements of the relevant environmental planning instruments, including:

  – *State Environmental Planning Policy (Planning Systems) 2021*

  – *State Environmental Planning Policy (Resilience and Hazards) 2021*

  – *State Environmental Planning Policy (Industry and Employment) 2021*

  – *State Environmental Planning Policy (Transport and Infrastructure) 2021*

  – *State Environmental Planning Policy (Biodiversity and Conservation) 2021*

  – *State Environmental Planning Policy (Sustainable Buildings) 2022*

  – *Western Sydney Employment Area – Fairfield Development Control Plan 2016*

- **The design responds appropriately to the opportunities and constraints presented by the site:**

  – The proposed data centre use responds to the strategic location of the site within an emerging industrial and employment hub in Western Sydney.

  – The built form responds to both the functional and spatial requirements for the data centre use and is compatible with the existing and future character of the locality which predominantly consists of recently developed industrial warehouse developments.

  – The proposed design and landscape strategy delivers a generous green curtilage to the boundaries and provides pockets of amenity at ground and roof level throughout the site.

  – The built form has been designed to avoid unacceptable impacts on surrounding properties, through the positioning of the data centre buildings, fencing and deep-soil landscaping to deliver a conducive architectural and urban design outcome.

  – The Proposal provides a significant component of ancillary office floor space positioned towards the primary frontage to activate the adjoining streetscape.

- **The Proposal is highly suitable for the site:**

  – The Proposal is consistent with the IN1 zone objectives, is permitted with consent and satisfactorily addresses the relevant provisions in the I&E SEPP and the WSEA Fairfield DCP.

  – The site is a large, consolidated land holding which is vacant and has been cleared of all structures and vegetation to accommodate future development.

- There are no significant environment constraints that would limit the Project being developed at the site.
- 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.
- The proposed development will optimise use of a vacant site and deliver strategic objectives located within a developing employment precinct with high amenity and employment outcomes and support business activity that occurs in other nearby established and emerging employment-generating precincts.
- The site is highly accessible to the regional road network and all necessary infrastructure can be accommodated, allowing operations to commence at no cost to Government.
- The data centre operations are suitable for the site and compatible with the residential boundary interface as the potential impacts are significantly reduced compared to traditional industrial land uses, i.e. warehousing and distribution, which have greater potential noise and traffic impacts.

- **The Proposal is in the public interest:**
  - The Proposal is consistent with relevant State and local strategic plans and complies with the relevant State and local planning controls including the relevant provisions in the I&E SEPP and WSEA Fairfield DCP.
  - Subject to the implementation of the recommended mitigation measures, no adverse social or environmental impacts result from the Proposal in terms of traffic, noise and vibration, air quality or views during construction and operation of the development.
  - The Proposal directly contributes to the important role that the WSEA plays as an employment generating precinct within the broader Western Parkland City, as identified by the Greater Sydney Commission.
  - The Proposal provides critical infrastructure which will support the growth for the digital economy within NSW and more broadly.
  - The Proposal will protect and enhance employment lands and increase job numbers.
  - No major issues relating to the construction and operation of the development were raised during the pre-lodgement consultation with the local community, Council, Government and agency stakeholders.
  - The site will facilitate the orderly and economic use and development of the land.

In view of the above, it is considered that this SSD Application has significant merit and should be approved subject to the implementation of the mitigation measures described in this report and supporting documents.

1. INTRODUCTION

This section of the report identifies the applicant for the Project and describes the site and proposed development. It outlines the site history and feasible alternatives explored in the development of the proposed concept, including key strategies to avoid or minimise potential impacts.

1.1. APPLICANT DETAILS

The Applicant details for the proposed development are listed in the following table.

Table 1 Applicant Details

Descriptor	**Proponent Details**
Full Name(s)	NEXTDC Limited c/o Urbis Pty Ltd
Postal Address	Level 8, 123 Pitt Street, Sydney NSW 2000
ABN	35 143 582 521
Nominated Contact	Christopher Croucamp

1.2. PROJECT DESCRIPTION

This Environmental Impact Statement (**EIS**) is submitted to the Department of Planning, Housing and Infrastructure (**DPHI**) on behalf of NEXTDC Limited (the **Applicant**) in support of a State Significant Development Application (**SSDA**). The SSDA seeks approval for the staged construction and operation of a data centre development at 16 Johnston Crescent, Horsley Park, including:

The SSDA seeks consent for:

- Site preparation works including bulk earthworks including tree removal.
- Staged construction and operation of five data centre buildings comprising a total gross floor area (**GFA**) of 63,654m^2 including 52,916m^2 of technical data hall floor space and 10,738m^2 of ancillary office and innovation floor space, including 'front of house' meeting and function spaces, and a café.
- Ancillary development including on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works and 9,000m^2 of deep soil landscaping.
- Delivery of 232 megawatts of power, including a 330kV substation and a 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.

The Project will be delivered in three construction stages as follows:

- Stage 1 = Buildings A to C and substation
- Stage 2 = Building D
- Stage 3 = Building E

1.3. PROJECT OBJECTIVES

The key objectives of the Project are described as follows:

- Deliver a state-of-the art development in three stages to meet market demands for data storage facilities with ancillary office and innovation floor space.
- Leverage the strategic location of the site to support the growth of the WSEA as an employment precinct and the Western Parkland City and make a significant contribution to the delivery of strategic policy objectives.

- Optimise efficiencies based on the site location in Horsley Park, including proximity to existing infrastructure to support the growth for the digital economy within NSW.
- Deliver critically needed data storage space in a highly suitable and accessible location.
- Provide for a variety of employment generating land uses including a significant component of ancillary office floor space.
- Achieve design excellence through high-quality architectural, urban and landscape design and sustainability measures to reduce energy consumption, while avoiding unacceptable environmental and adverse amenity impacts.
- Ensure minimal environmental and amenity impact by providing suitable mitigation measures where required, to minimise any unforeseen impacts arising in the future.

Society is increasingly reliant on digital technology, including commercial and social interactions. The Project would provide a clear benefit in society's ongoing digital transformation in that it would:

- Provide a secure location for the storage of data in a suitable location within the Sydney Metropolitan basin.
- Increase the speed of digital access to clients in Sydney and NSW generally.
- Contribute to the security of sensitive data by avoiding offshore hosting.
- Provide an additional location for the backup and redundancy of data stored elsewhere in NSW.
- Increase global resilience by providing for distribution of data within a physical location that benefits from few major physical disruptors (such as natural disasters), as well as stable governance and social order.

These benefits apply to NSW residents and tenants who use digital services on a daily basis.

1.4. PROJECT BACKGROUND

NEXTDC is an ASX 100-listed technology company and the leading independent data centre operator with a nationwide network of facilities in the Australian market, servicing local and international organisations. With a focus on sustainability and renewable energy, NEXTDC deliver industry leading solutions that champion the best energy efficiency ratings in the country and NABERS 5-star certification. Their partner ecosystem comprises Australia' largest specialised information and communication technology (**ICT**) community of over 750 clouds, networks and IT service providers. This enables customers to source and connect with cloud platforms, service providers and vendors to build integrated Hybrid Cloud deployments and scale their IT infrastructure and services.

As the digital economy increases in scale and importance, issues of speed and security are becoming increasingly relevant. Historically, many digital services were typically hosted from a centralised server in a single physical location, however, the need to serve content swiftly requires new ways of operating. This includes expansion of 'content distribution networks' where identical information is hosted in multiple locations around the globe. Key users are sensitive to data theft by commercial competitors or foreign agents. This has led to some organisations placing restrictions on the physical location in which certain digital information may be held. For example, Australian Government agencies may specify that all data must be hosted on servers physically located within Australia.

Based on these requirements and in response to the anticipated future demand for data storage, NEXTDC identified the need for new data centres in NSW. The following criteria were applied in the site selection process for the S4 Data Centre Proposal:

- Must be within the Sydney basin.
- Close to key customers.
- Within a suitably sized and serviced parcel of land.
- Close to key digital (optic fibre) backbones.
- Within proximity to travel and transport networks for operational staff.
- In a location with high resilience and lower sensitivity to amenity impacts.

- In a geotechnically stable location.
- In an area less susceptible to natural disasters or other shocks or stresses such as terrorism.

The site selection process assessed different locations across Sydney. Some sites were deemed unsuitable, with others shortlisted for further assessment. The selected site was deemed appropriate based on its response to key criteria including the land size and location in proximity to existing industry and employment-generating land uses.

The site is a large, consolidated land holding which is vacant and has been cleared of all vegetation to accommodate future development. There are no significant environment constraints that would limit the Project being developed at the site. The proposed staged redevelopment of the site to accommodate the S4 Proposal provides a significant opportunity to develop the vacant site so it makes a meaningful contribution to the planned development of Horsley Park as an employment precinct.

1.5. RESTRICTIONS AND COVENANTS

The site is burdened by the following easements and restrictions:

- 4.5 metre wide right of access electricity easement along the eastern boundary of the site from Burley Road to the C2 Environmental Conservation zone to the south.
- A positive covenant along the southern-eastern boundary of the site which requires an Asset Protection Zone (**APZ**) to be provided and maintained for bushfire protection purposes.

The easement and APZ has been accommodated within the Proposal.

1.6. PROJECT TEAM

The EIS should be read in conjunction with the following plans and technical consultant reports:

Table 2 Supporting Documentation

Document Title	Author	Appendix
SEARs Compliance Table	Urbis	**Appendix A**
Statutory Compliance Table	Urbis	**Appendix B**
Mitigation Measures	Urbis	**Appendix C**
Engagement Summary Table	Urbis	**Appendix D**
Architectural Plans	HDR Architects	**Appendix E**
Architectural Design Report	HDR Architects	**Appendix F**
Estimated Development Cost Calculation	WT Partnership	**Appendix G**
Survey Plan	HDR Architects	**Appendix H**
BCA Compliance Report	McKenzie Group	**Appendix I**
Landscape Plans	Site Image	**Appendix J**
Landscape Design Report	Site Image	**Appendix K**
Visual Impact Assessment	Urbis	**Appendix L**
Traffic Impact Assessment	TTW	**Appendix M**

Document Title	Author	Appendix
ESD Report	Aurecon	**Appendix N**
Air Quality Impact Assessment	Aurecon and Northstar	**Appendix O**
Noise and Vibration Impact Assessment	Aurecon	**Appendix P**
Flood Risk Assessment Report	TTW	**Appendix Q**
Civil Engineering Report	TTW	**Appendix R**
Civil Plans	TTW	**Appendix S**
Contamination and Remediation Status Letter	JK Environments	**Appendix T**
Aboriginal Cultural Heritage Assessment	Urbis	**Appendix U**
Heritage Impact Statement	Urbis	**Appendix V**
Social Impact Statement	Urbis	**Appendix W**
Backup Power Report	Aurecon	**Appendix X**
Geotechnical Assessment	JK Geotechnics	**Appendix Y**
Waste Management Plan	Encycle	**Appendix Z**
Bushfire Protection Assessment	ABPP	**Appendix AA**
Access Review Report	MGAC	**Appendix BB**
Green Travel Plan	TTW	**Appendix CC**
Preliminary Construction Traffic Management Plan	TTW	**Appendix DD**
Emissions Embodiment Form	WT Partnership	**Appendix EE**
BDAR Waiver	Department of Planning, Housing and Infrastructure	**Appendix FF**
BDAR Waiver Request	Narla Environmental	**Appendix GG**
Preliminary Hazards Assessment Report	Aurecon	**Appendix HH**
Infrastructure Requirements Report	Aurecon	**Appendix II**
Wayfinding Signage Plans	Diadem	**Appendix JJ**
Surface Water and Groundwater Condition Assessment	JK Environments	**Appendix KK**
Engagement Outcomes Report	Urbis	**Appendix LL** **Appendix LL**
Arboricultural Impact Assessment	CPS Planning	**Appendix MM**

Document Title	Author	Appendix
Dryland Salinity and Acid Sulfate Soil Assessment	JK Environments	**Appendix NN**

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 7** of this EIS.

2.1. PROJECT JUSTIFICATION

2.1.1. Greater Sydney Region Plan: A Metropolis of Three Cities

The *Greater Sydney Region Plan* (**Region Plan**) provides the overarching strategic plan for growth and change in Sydney. It is a 20-year plan with a 40-year vision that seeks to transform Greater Sydney into a metropolis of three cities - the Western Parkland City, Central River City and Eastern Harbour City. It identifies key challenges facing Sydney including increasing the population to eight million by 2056, 817,000 new jobs and a requirement of 725,000 new homes by 2036.

The site is located within the Western Parkland City. The Project aligns with the vision of the Western Parkland City in that the development will facilitate the provision of jobs and economic activity within the WSEA which is identified as a developing industrial and employment area well connected to transport links. Specifically, the Project will deliver on the following key objectives set out in the Region Plan:

As identified in **Table 3**, the Project aligns with following priorities of the Region Plan:

Table 3 Consistency with Region Plan

Objectives	Proposal
Objective 1. Infrastructure supports the three cities.	The S4 Proposal will improve accessibility and supply of new digital storage infrastructure to Horsley Park which is an emerging employment precinct. The Proposal supports the major economic driver of digital technology and constitutes critical support infrastructure within a rapidly evolving, digitally dependent society. The proposed data centre development would provide cloud storage to available clients, allowing for more efficient operations on end-to-end business models.
Objective 7. Jobs and skills for the city.	The Proposal encourages employment-generating opportunities and economic prosperity, which has positive influences on the wider locality. The site is zoned for industrial purposes. Industrial zoned land is identified as vital in providing increased employment opportunities within the Western Parklands City and integrating new and existing employment precincts with transport infrastructure that will attract business investment and activity. The Proposal will provide approximately 1,111 full-time equivalent construction jobs and approximately 411 full-time operational jobs.
Objective 24. Economic sectors are targeted for success	The Proposal aligns with the vision of the objective as it will support the continued growth of the WSEA as a hub of employment activity through co-location of key digital infrastructure with innovative technology businesses. Increased storage capacity responds to changing technologies, embracing opportunities to expand startup and digital innovation that allow people to work remotely.

2.1.2. Our Greater Sydney 2056: Western City District Plan

Our Greater Sydney 2056: Western City District Plan (**District Plan**) is a 20-year plan to manage growth in the context of economic, social and environmental matters to implement the objectives of the Greater

Sydney Region Plan. The intent of the District Plan is to inform local strategic planning statements and local environmental plans, guiding the planning and support for growth and change across the district.

The District Plan contains strategic directions, planning priorities and actions that seek to implement the objectives and strategies within the Region Plan at the district-level. As identified in **Table 4**, the Project aligns with following priorities of the District Plan:

Table 4 Consistency with District Plan

Planning Priority	**Proposal**
W1. Planning for a city supported by infrastructure.	Data Centres are critical infrastructure for the functioning of many businesses. The S4 Proposal seeks to provide data centre services at both retail and hyperscale to carter for a variety of businesses. The Proposal will improve accessibility and supply of new digital storage infrastructure to Horsley Park. The site will benefit from being co-located within the vicinity of key customers which will support business activity that occurs in the WSEA.
W8 Leveraging industry opportunities from the Western Sydney Airport and Badgerys Creek Aerotropolis	The Proposal will attract local, national and international businesses to the region given the sites proximity (less than 10km) to the Western Sydney International Airport (**WSI)** which is currently under construction.
W11 Growing investment, business opportunities and jobs in strategic centres	Horsley Park is located within the WSEA which provides businesses in western Sydney with land for industry and employment. The WSEA was established to supply employment land close to major road transport and provide jobs for Western Sydney. The Proposal will provide significant investment in the area by providing key technology infrastructure that supports business activity within WSEA. The Proposal will contribute up to 1,111 full-time equivalent (**FTE**) jobs during construction and 411 FTE jobs once operational. The Proposal will provide people living in Western Sydney the chance to work locally and spend less time commuting and more time with their families.
W19. Reducing carbon emissions and managing energy, water and waste efficiently.	As the data centre industry evolves, so does the sustainability of the technology. The Proposal seeks to implement the most up to date technologies which use less energy. Further to this, a number of sustainability initiatives will be implemented including: ▪ Efficient building systems including LED lighting with smart controls. ▪ Providing areas including rooftop solar photovoltaic (**PV**). ▪ Selecting low embodied carbon materials and energy efficient equipment. ▪ Installing efficient fixtures and fittings for toilets and sanitary appliances ▪ Rainwater harvesting and reuse for irrigation and toilet flushing. ▪ Raingardens and Water-Sensitive Urban Design (**WSUD**) to remove pollutants from the rainwater and reduce irrigation requirements.

2.1.3. NSW Future Transport Strategy 2056

The Future Transport Strategy 2056 (the **Strategy**) was released by Transport for NSW (**TfNSW**) in March 2018. The Strategy provides a 40-year vision for the NSW transport system aligned with the land use planning initiatives outlined within the Region and District Plans.

The Strategy seeks to support a productive economy, through the delivery of transport that enables business to reach new markets, attract new investment, while presenting more jobs and training opportunities. Transport is recognised as a significant importance in the creation of liveable communities in association with its ability to transform the public domain, activate centres and unlock new commercial and housing developments, renewing existing neighbourhoods and spaces.

Additionally, productivity, liveability and sustainability are sought to be achieved by the Strategy through the mobilisation of emerging technologies and innovation, for which the Proposal, for the purposes of a data centre will facilitate accordingly.

2.1.4. Fairfield City 2040 Local Strategic Planning Statement

Fairfield City 2040 A Land Use Vision: Shaping a Diverse City - Local Strategic Planning Statement (**LSPS**) was adopted by Fairfield City Council on 30 March 2020. It seeks to implement the provisions in the Region Plan and District Plan, setting a 20-year vision for land-use within the LGA in accordance with the EP&A Act.

The LSPS states that future development of the Horsley Park precinct is to increase jobs, industry and local services, and facilitate industrial, distribution and warehousing businesses serving Greater Sydney. Overall, the proposed development is consistent with the vision of the LSPS as it will protect and enhance employment lands and increase job numbers.

As identified in **Table 5**, the Project aligns with following priorities of the LSPS.

Table 5 Consistency with Local Strategic Planning Statement

Planning Priority	**Proposal**
Planning Priority 3 - Plan for and Manage Areas Identified for Future Urban Development:	The Proposal incorporates high-quality architectural, urban and landscape design to avoid unacceptable environmental and adverse amenity impacts to future residential areas to the east and suitable mitigation measures have been provided where required, to minimise any unforeseen impacts arising in the future.
Planning Priority 7. Leverage opportunities from major new district infrastructure and services and technological developments.	The site is located within the WSEA which is zoned for employment generating uses. The Proposal seeks to provide Sydney with a new data centre which will employ the latest technologies which will drive technological development. Given Horsley Park is located within the WSEA which is a major employment and industrial precinct, data storage in this precinct is critical to the operation of these key institutions, reducing the risk of connectivity issues
Planning Priority 8. Protect areas of high natural value and environmental significance and improve the health of catchments & waterways.	The Proposal seeks to retain and protect the native vegetation, including the bushland to the south-east of the site which is zoned C2 Environmental Conservation I&E SEPP.
Planning Priority 11. Promote a robust economy which generates diverse services and job opportunities.	The proposed data centre development will contribute to the provision of additional jobs in the region and promote the ongoing growth of innovative technologies in the job market of the future. In addition to providing 52,916m^2 of critically needed data storage floor space, the Proposal will include 10,738m^2 of ancillary office. The

Planning Priority	Proposal
	Proposal will deliver approximately 1,111 jobs during the construction life and 411 full-time employment opportunities once the facility is fully operational. The proposed data centre will also support significant indirect job growth across the WSEA.
Planning Priority 12 – Plan for and manage urban services land:	The Proposal will protect and enhance employment lands and increase job numbers. The Proposal will contribute to growing investment, business opportunities and job creation in the emerging industry cluster at Horsley Park.

2.1.5. Better Placed

In August 2017, the Government Architect for NSW (**GANSW**) released *Better Placed* which seeks to establish priorities and objectives that shape design to create well-designed built environments. The Better Placed policy establishes guidelines to achieve good design within the built environment in New South Wales. As demonstrated in **Table 6**, the Project is consistent with the Better Placed objectives.

Table 6 Consistency with Better Placed objectives

Objective	Proposal
Objective 1 - Better Fit: Contextual, local and of its place	The Proposal meets the objectives of 'better fit as follows: ▪ The S4 Proposal responds to the surrounding context of Horsley Park with a focus on employment generating land uses. The S4 Proposal has been designed considering the local context and landscape, ensuring the architecture complements rather than disrupts the environment. The data centre will blend in with the surrounding development, minimising visual impact while maximising efficiency. ▪ Emphasis has been given to contextual design elements like materials, colours, and scale helps harmonize the facility with its locale. Additionally, incorporating sustainable practices ensures the Proposal aligns with the area's ecological needs, promoting environmental responsibility. ▪ The proposed design seeks to respond to the character of the area by providing highly articulated buildings, a campus style street grid reflective of the neighbouring rural residential grid and a generous green curtilage to the site's boundaries. ▪ The S4 Proposal is responsive to the surrounding context of Horsley Park by providing a consistent and permissible land use. Data centres are critical infrastructure. Locating data centres close to other businesses increases efficiencies for data transfer and reliability. The S4 Proposal adopts a range of ESD measures to ensure the Proposal aligns with the areas ecological needs and promotes environmental responsibility.
Objective 2 - Better Performance: Sustainable, adaptable and durable	The Proposal meets the objectives of 'better performance' as follows: ▪ Consideration has been given to material selection and resource consumption, considering increased global resource scarcity and the pursuit of material conservation and productivity. Waste minimisation practices such as storage and collection of recyclables and construction

	and demolition waste management planning to mitigate the impact of resource consumption on the environment. ▪ Energy efficient design, renewable energy integration and responsible resource use. ▪ Adaptability through infrastructure design capable of accommodating evolving technological needs and operational requirements over time. ▪ Durability through resilience to physical and operational challenges, ensuring continuous functionality and minima downtime. ▪ The Proposal utilises the above principles to operate efficiently, reduce operational costs, and contribute positively to its surroundings.
Objective 3 - Better for Community: Inclusive, connected and diverse	The Proposal meets the objectives of 'better for community' as follows: ▪ By offering opportunities for local engagement and education about data technology the Proposal becomes a hub for collaboration, innovation and shared prosperity. ▪ Integration into the community's social and economic fabric by virtue of effectively establishing a hub for collaboration, innovation and shared prosperity. ▪ Addressing environmental impacts through sustainable practices demonstrates a commitment to the community's long-term health.
Objective 4 - Better for People: Safe, comfortable and liveable	The Proposal meets the objectives of 'better for people' as follows: ▪ Safety measures and security measures during both construction and operational phases, as described throughout the EIS and accompanying technical documentation. These measures will ensure the safety and security of staff and visitors. ▪ Air quality, temperature control and noise reduction create an optimal working atmosphere. Seamless integration of ergonomic design principles ensures ease of operation and maintenance for staff, promoting efficiency and minimising potential hazards. ▪ Landscape design elements like covered walkways and tiered seating create inviting spaces for social engagement and relaxation. The Proposal's emphasis on safety, comfort and usable shared spaces underscores its commitment to creating spaces that priorities human needs.
Objective 5 - Better Working: Functional, efficient and fit for purpose	The Proposal meets the objectives of 'better working' as follows: ▪ The layout of the facilities has been carefully designed to be functional, efficient and specifically tailored to the unique demands of housing and managing data infrastructure. The Proposal includes innovation space and office components to support the sites primary use as a data and innovation centre development. These spaces are designed to cater for the employees of NEXTDC and tenants of the facilities. ▪ The meticulous design of the Proposal accommodates the complex network of servers, cooling systems and power supplies while ensuring ease of

	maintenance and scalability. Additionally, the Proposal prioritises optimal spatial layout and organisation to streamline workflows and enhance operational efficiency. ▪ The Project objectives seek to support the seamless operation of digital services, ensuring reliability, accessibility and performance while aligning with broader sustainability goals through energy efficient design and resource utilisation.
Objective 6 - Better Value: Creating and adding value	The Proposal meets the objectives of 'better value as follows: ▪ Sustainable materials and finishes have been chosen and assessed on life span, embodied energy to be reduced by the use of renewables in production processes, and recyclability. ▪ The S4 Proposal exemplifies how strategic planning and design can create a dynamic, efficient, and aesthetically pleasing environment that adds significant value to both users and the broader community.
Objective 7 - Better Look and Feel: Engaging, inviting and attractive	The Proposal ▪ The S4 Proposal will deliver a high-quality urban design outcome through the careful consideration of material, finishes and siting to reduce the perceived bulk and scale of the development. ▪ The boundary landscaping will enhance the development when viewed from the public domain and surrounding developments. ▪ By incorporating engaging and attractive design elements, such as well-designed architecture, landscaping and inviting civic spaces, the Project will elevate the visual appeal from the site from the surrounding streetscape.

2.2. KEY FEATURES OF SITE AND SURROUNDS

The site is located at 16 Johnston Crescent, Horsley Park and is legally described as Lot 305 in Deposited Plan (**DP**) 1275011. The site is in the Fairfield Local Government Area (**LGA**).

The key features of the site are summarised in **Table 7** and an aerial photograph of the site is provided at **Figure** 3. A map of the site in its regional setting is provided at **Figure 4**.

Table 7 Key Features of Site and Locality

Descriptor	Site Details
Land Configuration	The site has a total area of 8.206 hectares with the following dimensions: ▪ **North** (Burley Road frontage): 338.87 metres ▪ **West** (Johnston Crescent frontage): 245.12 metres ▪ **South-East** (C2 Environmental Conservation interface): 114.5 metres ▪ **South:** 274.785 metres ▪ **East:** 160.86 metres The site slopes from the south-east to the northwest corner, with a fall of approximately 10 metres.
Land Ownership	The site is owned by NEXTDC Limited.
Existing Development	The site is vacant land and does not contain any existing built form structures and has been cleared of vegetation. Retaining walls have been constructed along the northern and western boundaries of the site which were approved under DA-893-2013. Photographs of the existing development is provided at **Figure 5**.
Local Context	The site is within an emerging employment precinct as described below: ▪ **North:** The land to the north of Burley Road and Johnston Crescent comprises industrial and extractive industry activities, Oakdale East industrial estate and Oakdale Central industrial estate. Burley Road currently comprises an unformed road with a gate preventing through-access. ▪ **East:** The land to the east along Burley Road comprises rural-residential land use activities. ▪ **South:** The land immediately south of the site (which comprises part Lot 306 DP1275011) comprises industrial zoned land as well as natural bushland zoned C2 Environmental Conservation which is required to be retained and managed. The land further to the south comprises industrial warehouse developments. ▪ **West:** Johnston Crescent runs along the western boundary of the site. The land on the opposite side of the road forms part of the CSR industrial estate which is currently under construction for industrial/employment purposes. The Jacfin land (yet to be

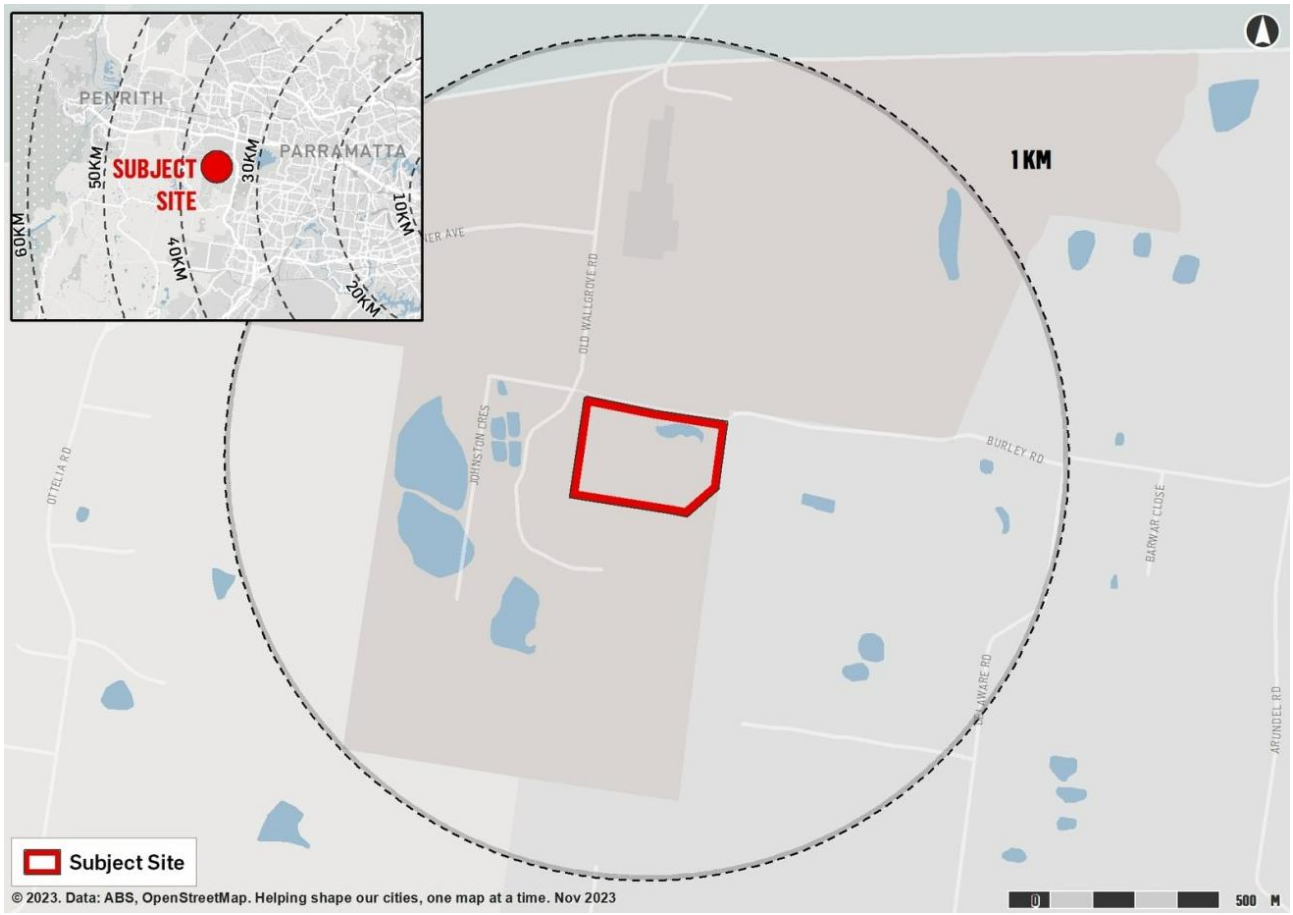
Descriptor	Site Details
	developed) and Oakdale South Industrial Estate are located further to the west. Photographs of the surrounding land uses are provided at **Figure 6.**
Regional Context	The site is located approximately 35 kilometres west of the Sydney Central Business District (**CBD**), 17 kilometres west of the Parramatta CBD and 10 kilometres north-east of the future Western Sydney International (**WSI**) airport. It is located within the Fairfield LGA, close to its boundary interface with the Penrith LGA. The site is within a developing employment precinct. It is also close to other established and emerging employment-generating precincts, including Eastern Creek to the north, Huntingwood to the north- east, Wetherill Park and Mamre Road West to the north-west and Wetherill Park to the east.
Infrastructure	The site will be well serviced by infrastructure. The signalised intersection of Lenore Drive and Old Wallgrove Road at Eastern Creek is approximately 2 kilometres to the north, providing access to Wallgrove Road and the Westlink M7 Motorway to the east and Erskine Park Road and Mamre Road to the west. Each of these roads provides access to the M4 Motorway to the north and M5 Motorway to the south. As outlined in the Infrastructure Requirements Report prepared by Aurecon, existing infrastructure can be augmented to cater for the utility needs of the S4 Proposal.
Site Access	Vehicle access to the site is provided via Johnston Crescent and Old Wallgrove Road. Burley Road is currently an unformed road, however, will form part of the future Southern Link Road which is a new east-west corridor linking Mamre Road, Kemps Creek and Wallgrove Road.
Easements and Covenants	The development land contains the following easements and covenants: ▪ 4.5 metre wide right of access along the eastern boundary of the site from Burley Road south to the C2 zoned land. ▪ A positive covenant along the southern-eastern boundary of the site which requires an APZ to be provided and maintained for bushfire protection purposes.
Acid Sulphate Soils	The site is not identified in the *Fairfield Local Environmental Plan 2013* as containing acid sulfate soils. The land is not affected by a policy adopted by Council or adopted by any other public authority that restricts development on the land because of the likelihood of acid sulfate soils.
Contamination	A Contamination and Remediation Status Letter has been prepared by JK Environments which confirms that the site has been satisfactorily remediated and is suitable for the proposed data centre (high tech industry land use).

Descriptor	Site Details
Stormwater and Flooding	Part of the site is flood affected. A Flood Risk Assessment Report has been prepared by TTW which confirms the site will not be affected by riverine or creek flooding, even in the PMF event (largest foreseeable event).
Bushfire Prone Land	A small portion of the site along the southern-eastern boundary is identified as bushfire prone land as shown in the Bushfire Prone Land Map, including Category 1 and Vegetation Buffer. The site contains an asset protection zone (**APZ**) adjoining the C2 zoned land. A Bushfire Protection Assessment has been prepared by ABPP.
Flora and Fauna	The site has been cleared of all vegetation. The C2 zoned land does not form part of the site and will be retained and managed as a conservation area. A BDAR waiver was granted by DPHI and accompanies this EIS.
Aboriginal Heritage	An ACHAR has been prepared by Urbis which confirms the site has a low potential for containing any potential Aboriginal Heritage.
European Heritage	The site is not identified as a heritage item, nor is it located within a heritage conservation zone. The are no heritage items within the vicinity

Figure 3 Aerial Photograph

Source: Urbis, 2023

Figure 4 Regional Context Map



Source: Urbis, 2023.

Figure 5 Site Photographs

Picture 1 View east of grassed area and retaining wall at the northern boundary of the site.

Source: Urbis, 2023

Picture 2 View south of grassed area and retaining wall at the western boundary of the site.

Source: Urbis, 2023

Picture 3 View east of driveway along southern boundary of the site and adjacent grassed area.

Source: Urbis, 2023

Picture 4 View north east of dam in north western corner of the site.

Source: Urbis, 2023

Picture 5 View south of the retaining wall at the eastern boundary of the site.

Source: Urbis, 2023

Picture 6 View west of the retaining wall at the northern boundary of the site.

Source: Urbis, 2023

Figure 6 Locality Photographs

Picture 7 View of part of Oakdale East industrial estate from Old Wallgrove Road.

Source: Urbis, 2023

Picture 8 View of part of Oakdale Central industrial estate from Old Wallgrove Road.

Source: Urbis, 2023

Picture 9 View of residence to the east of the site from Burley Road.

Source: Urbis, 2023

Picture 10 View of part of development along Johnston Crescent, to the west of the site.

Source: Urbis, 2023

Picture 11 View of part of development along Johnston Crescent, to the west of the site.

Source: Urbis, 2023

Picture 12 View of part of development along Johnston Crescent, to the south of the site.

Source: Urbis, 2023

2.3. DEVELOPMENT HISTORY

A development application (**DA**) (DA-893-2013) was determined by the NSW Land and Environment Court (**NSWLEC**) on 16 October 2015 relating to the site. The approval facilitated a three staged subdivision of (the former) 327-335 Burley Road, Horsely Park being Lot 1 DP 106143 for the applicant (**CSR Limited**).

The three-stage subdivision created 14 industrial lots and 1 lot for environmental conservation land. The DA has been modified numerous times with the most recent modification granted on 12 May 2021 for the further staging of Stage 3 into Sub-Stages 3A, 3B and 3C. As shown in **Figure 7**, the SSDA relates to land identified as Stage 3B and will be consistent with relevant development consent conditions (as modified) under DA893-2013.

Figure 7 Approved Staging Plan

Source: CSR Limited

A summary of the previous development consents for the site is provided in **Table 8.**

Table 8 Summary of Previous Development Consents

DA Number	Date of Approval	Consenting Authority	Description of Development
893.1/2013	16 October 2015	NSW Land & Environment Court (10634 of 2014)	Torrens Title subdivision to create 14 lots and one residue lot in three stages.
893.4/2013	18 June 2018	Fairfield City Council	Minor amendments to features of the subdivision in each of the three stages.
893.6/2013	13 November 2019	Fairfield City Council	Modification application proposing to further stage approved Stage 2.
893.7/2013	23 June 2020	Fairfield City Council	Section 4.55 to split Stage 2 into two separate stages.

DA Number	Date of Approval	Consenting Authority	Description of Development
893.8/2013	15 September 2021	Fairfield City Council	Not available on DA tracker.
893.9/2013	12 May 2021	Fairfield City Council	Section 4.55 to split staging of Stage 3 into Sub-Stages 3A, 3B and 3C.
893.12/2013	10 March 2022	Fairfield City Council	Stage 3: roadworks, stormwater works, drainage, bulk earthworks, and regrading.

2.4. CUMULATIVE IMPACTS WITH FUTURE PROJECTS

The site is located within an emerging employment precinct in Horsley Park which has been undergoing significant change over recent times, predominantly with new large-industrial warehouse and logistics estates. Approved and likely future developments which may be relevant in the cumulative impact assessment of the Proposal are summarised in **Table 9.**

Table 9 Approved and Likely Future Developments

DA Reference	Development Description	Current Status
MP10_0130 (Jacfin)	Jacfin Horsley Park Project (Stage 1) for the subdivision of Lot A DP 392643 to create Lots 100 and 101 DP 392643 and development of warehousing, light industry and distribution on Lot 100.	Approved 28 October 2013
ESR Horsley Logistics Park (ESR) SSD-10436 Lots 201-203 in DP1244593	The construction, fit-out and operation of eight warehouse and distribution tenancies in four buildings with a total gross floor area (**GFA**) of 109,048m^2, including offices, loading docks, hardstand areas, truck and car parking spaces, landscaping, associated infrastructure and signage	Approved: 31 March 2021 Last modified: 21 February 2022
Jalco Manufacturing Facility SSD-21190804 Lot 201 in DP1244593	Fit-out and operation of warehouse 1 of Lot 201 in the ESR Horsley Logistics Park for Jalco Home Care Manufacturing Facility producing, storage, and distribution of household cleaning and disinfection products.	Approved 29 July 2022 Last modified 13 April 2023
Oakdale East Industrial Estate SSD- 37486043 Part Lot 100 and Lot 101 in DP1257276	Concept masterplan for an industrial estate to be built over 5 stages and Stage 1 works including intersection upgrades, bulk earthworks, estate roads, services, expansion of an existing warehouse in Precinct 1 and	Approved: 11 October 2023 Last modified: 21 February 2024

DA Reference	Development Description	Current Status
	construction, fit-out and operation of a warehouse in Precinct 3.	
Oakdale South Industrial Estate (Goodman) SSD-6917 Lot 12 in DP 1178389 and Lot 87 in DP 752041, Kemps Creek	The Staged Development Application for the Oakdale South Industrial Estate 395,880m^2 of GFA comprised of 376,295m^2 of warehousing and 19,585m^2 of ancillary office floor space.	Approved: 26 October 2016 Last modified: 14 December 2021
Oakdale Dangerous Goods Facility SSD-7491 Lot 21 In DP 1173181	Construction and operation of Dangerous Goods Facility that will operate on a 24-hour, 7-day basis. The Proposal seeks consent for a total of 36,635sqm of GFA	Approved 16 September 2016 Last modified 28 June 2017

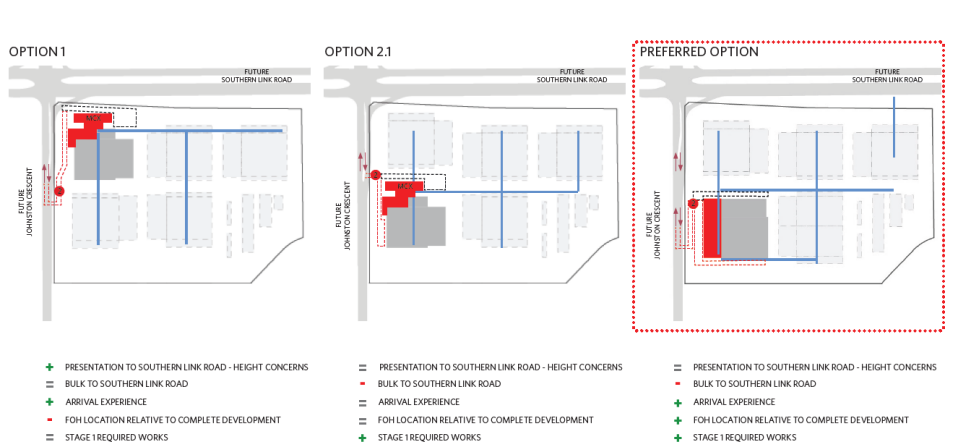
The potential cumulative impacts of the Project are addressed in **Section 6** of the EIS in accordance with the DPHI Assessing Cumulative Impacts guidelines.

2.5. FEASIBLE ALTERNATIVES

Section 192(c) of the *Environmental Planning and Assessment Regulation 2021* (**EPA Regulation**) requires an analysis of any feasible alternatives to the Project, including the consequences of not carrying out the development. Each of the development options is listed and discussed in **Table 10**.

Table 10 Project Alternatives

Option	Assessment
Option 1 - Do Nothing	A 'do nothing' approach was dismissed as the objectives of the Project would not be met. If the Project was not to proceed, the site would remain vacant and idle and the delivery of critically needed data storage space would not be realised. A 'do nothing' scenario would mean that the considerable social and economic benefits would not be realised through the delivery of employment generating development on land intended for industrial purposes. Specifically, the consequences of not carrying out the Proposal would include: ▪ A failure to align with the existing planning controls for the site. The site does not adequately utilise the available development capacity on the site as a major industrial planned precinct. ▪ The loss of public domain upgrade and landscaping works along Johnston Crescent and Burley Road which will make a major contribution to improving the amenity of the roads which are currently uninviting. ▪ This scenario would not adhere to the principle of orderly planning and economic use of land as per the objectives of section 1.3(c) of the EP&A Act. This option was therefore no longer considered by NEXTDC.
Option 2 - Alternative Location	Consideration was given to carrying out development on alternative sites, however, these were dismissed as follows:

Option	Assessment
	▪ The sites were not adequately serviced by the critical utility infrastructure including power and water required to support a data centre. ▪ The sites were close to sensitive land activities, including residential development, where potential impacts could not be mitigated. ▪ The sites were not located close to key customers which require data storage facilities as it reduces the risks of connectivity issues industries that are reliant on the storage of data and information. ▪ The sites were physically constrained and could not accommodate the required scale of development. ▪ The sites were constrained by environmental sensitive areas, including heritage, biodiversity or contamination.
Option 3 - Alternative Design	A range of design options and layouts were explored including alternatives as detail in the Architectural Design Report prepared by HDR Architects and submitted with the SSDA. In summary, these options were dismissed as it would not facilitate the delivery of the operational requirements for the data centre and would result in an unacceptable design outcome. Figure 8 Layout Options  *Source: HDR Architects*
Option 4 – The Proposal	The siting and design of the S4 Proposal was resolved through a comprehensive analysis of the site opportunities and constraints. The Project has been developed in consultation with key stakeholders and with regards to minimising impacts, while achieving a good urban design outcome. Overall, the Proposal was identified as being the most suitable option to achieve the Project objectives as: ▪ The site is strategically located within an emerging employment precinct proximate to major arterial road networks which will allow for easy access. ▪ The site is a large, consolidated land holding and has been cleared of all vegetation and levelled to accommodate future development.

Option	Assessment
	▪ The Proposal is compatible with the local context and will result in minimal impacts to the environment through the implementation of suitable mitigation measures where required. ▪ The development can be achieved without having unacceptable environmental impacts in relation to traffic, noise, air quality, biodiversity, and visual impacts. ▪ Management and mitigation measures can be implemented to avoid adverse impacts to any sensitive receivers identified on adjoining residential land uses to the east. ▪ The site presents the most orderly and economic use and development of the land to deliver a new data storage facility.

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 consent for the staged construction and operational use of the S4 Data Centre. The key components of the Project are listed in the following table. Architectural Plans prepared by HDR Architects are submitted with the SSDA. A high-quality render of the Proposal is provided at **Figure 10**.

Table 11 Project Details

Descriptor	Project Details
Project Area	The site has a total area of 8.206 hectares. The entire site will be disturbed by the Project.
Use and Activities	Data centre with ancillary office, innovation floor space and café
Project Summary	▪ Site preparation works including bulk earthworks and tree removal. ▪ Staged construction and operation of five data centre buildings comprising a total gross floor area (**GFA**) of 63,654m^2 including 52,916m^2 of technical data hall floor space and 10,738m^2 of ancillary office and innovation floor space, including 'front of house' meeting and function spaces, and a café. ▪ Ancillary development including on-site parking for 200 cars, business identification signage (pylon and elevation signage), civil and stormwater works. ▪ Delivery of 232 megawatts of power, including a 330kV substation and a 33kV switching station, plus above ground diesel storage tanks and above ground water tanks for industrial water and fire water.
Gross Floor Area (GFA)	Total GFA of 63,654m², broken down as follows: ▪ Data halls/technical: 52,916m². ▪ Mission critical (**MCX**) office, innovation and admin floor space: 10,738m². ▪ Total number of data houses: 34 data houses
Maximum Height	▪ Building A – 32 metres over three storeys ▪ Buildings B, C, D and E – 39 metres over four storeys
Floor Space Ratio	0.78:1
Deep Soil Area	9,900m² (12.1% of site area)
Car Parking	200 car spaces including 6 DDA spaces and 10 EV spaces
Motorbike Parking	5 spaces
Bicycle Parking	24 spaces

Descriptor	Project Details
Cut and Fill Volume	Net cut of 16,040m^3
Utilities	Provision of required utilities: Diesel Fuel Tanks: ▪ Building A: Above ground diesel storage tanks (10 x 25kL each) ▪ Buildings B-D: Above ground diesel storage tanks (10 x 65kL each) ▪ Building E: Above ground diesel storage tanks (14 x 65kL each) Industrial Water: ▪ Building A: Above ground water tanks for industrial water (4 x 170kL each) ▪ Buildings B-D: Above ground water tanks for industrial water (4 x 580kL each) ▪ Building E: Above ground water tanks for industrial water (6 x 580kL each) Fire Water: ▪ Above ground water tanks for fire water (6 x 340kL each) Substation: ▪ 330kV substation plus a 33kV switching station on site.
Tree Removal	Six trees (adjoining site on Council street verge)
Power Consumption	232 megawatts
Operations and Management	The facility would be constructed and operated by NEXTDC. The site would be operated on a 24-hour, 7 day a week basis.
Existing Services and Infrastructure	Existing services and infrastructures will be extended, adapted and augmented to meet the demands of the Project.
Estimated Development Cost (EDC)	The Project has a total EDC of $2,378,800,00 excluding GST.
Staging/Phasing	The Project will be constructed in three stages: ▪ Stage 1 = Buildings A to C and substation ▪ Stage 2 = Building D ▪ Stage 3 = Building E
Jobs	Construction: Approximately 1,111 full-time equivalent employees. Operation: Approximately 411 specialist and related full-time roles (maximum of 196 staff at any given time).

3.2. DETAILED DESCRIPTION

3.2.1. Project Area

The total site area is approximately 8.206 hectares which includes the data centre development and site works.

3.2.2. Physical Layout and Design

3.2.2.1. Site Layout

The proposed development includes site preparation works (bulk earthworks) to facilitate the staged construction and operation of a data centre development. The key features of the proposed development are described as follows:

- Five data centre buildings comprising a total gross floor area (**GFA**) of 63,654m^2 including 52,916m^2 of technical data hall floor space and 10,738m^2 of ancillary office and innovation floor space and a café with the following maximum heights:
  - Building A – 32 metres over three storeys
  - Buildings B, C, D and E – 39 metres over four storeys
- Vehicle access via Johnston Crescent.
- On-site at-grade parking for 200 cars across the site including six accessible spaces and 10 EV spaces.
- Loading facilities on the ground level, including enclosed or partly enclosed dedicated loading docks within each building.
- Business identification signage (pylon and elevation signage).
- Landscaping across the site in accordance with the Project staging, delivering a mix of native and endemic plant species, shrubs, grasses, and trees within a total area of 9,900m^2 deep soil.
- Provision of required utilities including above ground diesel storage tanks, above ground water tanks for industrial water and above ground water tanks for fire water.
- Delivery of 232 megawatts of power, including a 330kV substation and a 33kV switching station.
- Above-ground water tanks for fire water (6 x 340kL each)
- Civil works including stormwater infrastructure.

The Project will be delivered in three construction stages as follows:

- Buildings A, B and C will be delivered in Stage 1, comprising:
  - Building A to include:
    - Lobby, admin and office floor space: 4,345m^2.
    - Technical data floor space 6,465m^2.
    - Utilities including above ground diesel storage tanks (10 x 25kL each) and above ground water tanks for industrial water (4 x 170kL each).
    - 77 at-grade parking spaces for cars including two accessible spaces and six EV spaces.
  - Building B to include:
    - Admin and office floor space: 1,448m^2.
    - Technical data floor space: 10,055m^2.
    - Utilities including above ground diesel storage tanks (10 x 65kL each) and above ground water tanks for industrial water (4 x 580kL each)
    - 53 at-grade parking spaces for cars including one accessible space and one EV space.

- Building C to include:
  - Admin and office floor space: 1,449m^2.
  - Technical data floor space: 10,053m^2.
  - Utilities including above ground diesel storage tanks (10 x 65kL each) and above ground water tanks for industrial water (4 x 580kL each)
  - 32 at-grade parking spaces for cars including one accessible space and one EV space.
- Building D will be delivered in Stage 2, comprising:
  - Lobby, admin and office floor space: 1,489m^2.
  - Technical data floor space: 10,209m^2.
  - Utilities including above ground diesel storage tanks (10 x 65kL each) and above ground water tanks for industrial water (4 x 580kL each)
  - 11 at-grade parking spaces for cars including one accessible space and one EV space.
- Building E will be delivered in Stage 3, comprising:
  - Lobby, admin and office floor space: 2,007m^2.
  - Technical data floor space: 16,134m^2.
  - Utilities including above ground diesel storage tanks (14 x 65kL each) and above ground water tanks for industrial water (6 x 580kL each)
  - 25 at-grade parking spaces for cars including one accessible space and one EV space.

Photomontages and plan extracts showing the key features of the proposed development are provided on the following pages.

Figure 9 Proposed Site Plan

Source: HDR Architects, 2024

Figure 10 Photomontage –View from above of the Proposal

Source: HDR Architects, 2024

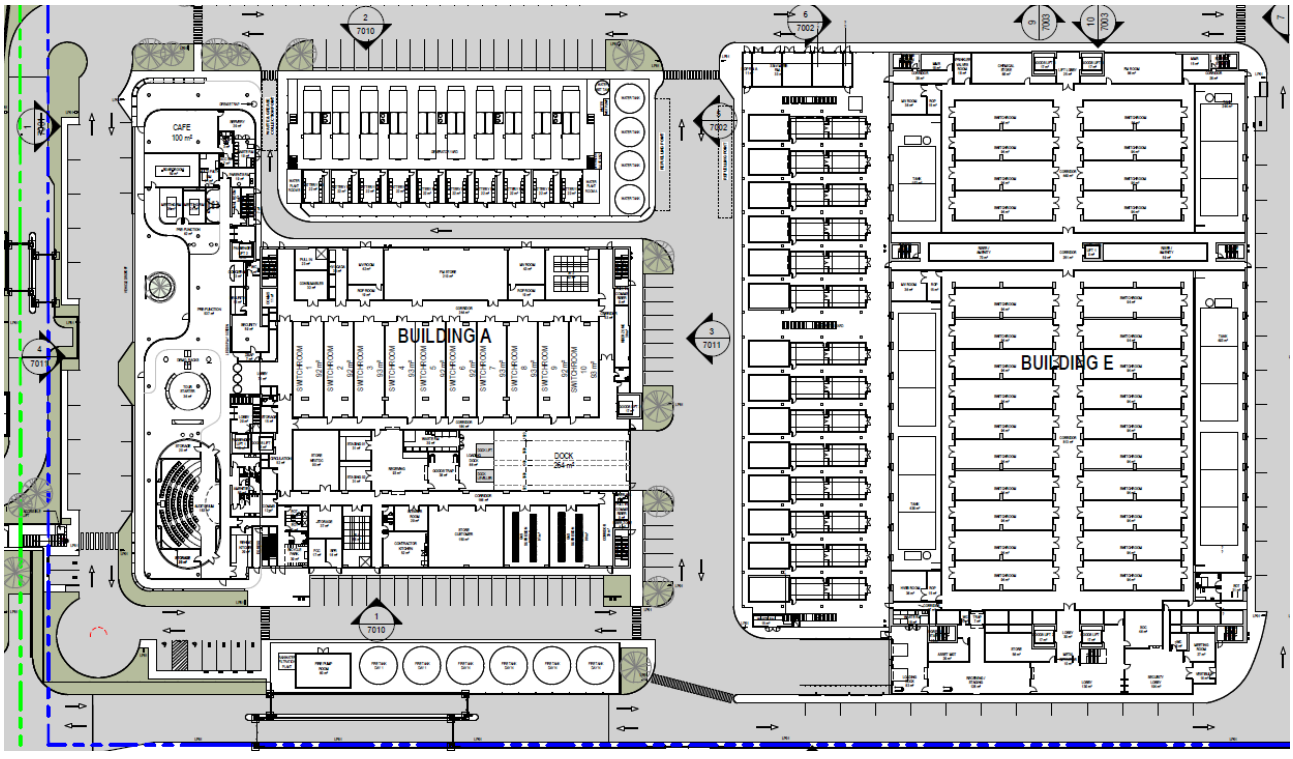
Figure 11 Photomontage – Street View from North West of Proposal

Source: HDR Architects, 2024

Figure 12 Photomontage –View of Building A from vehicle entrance

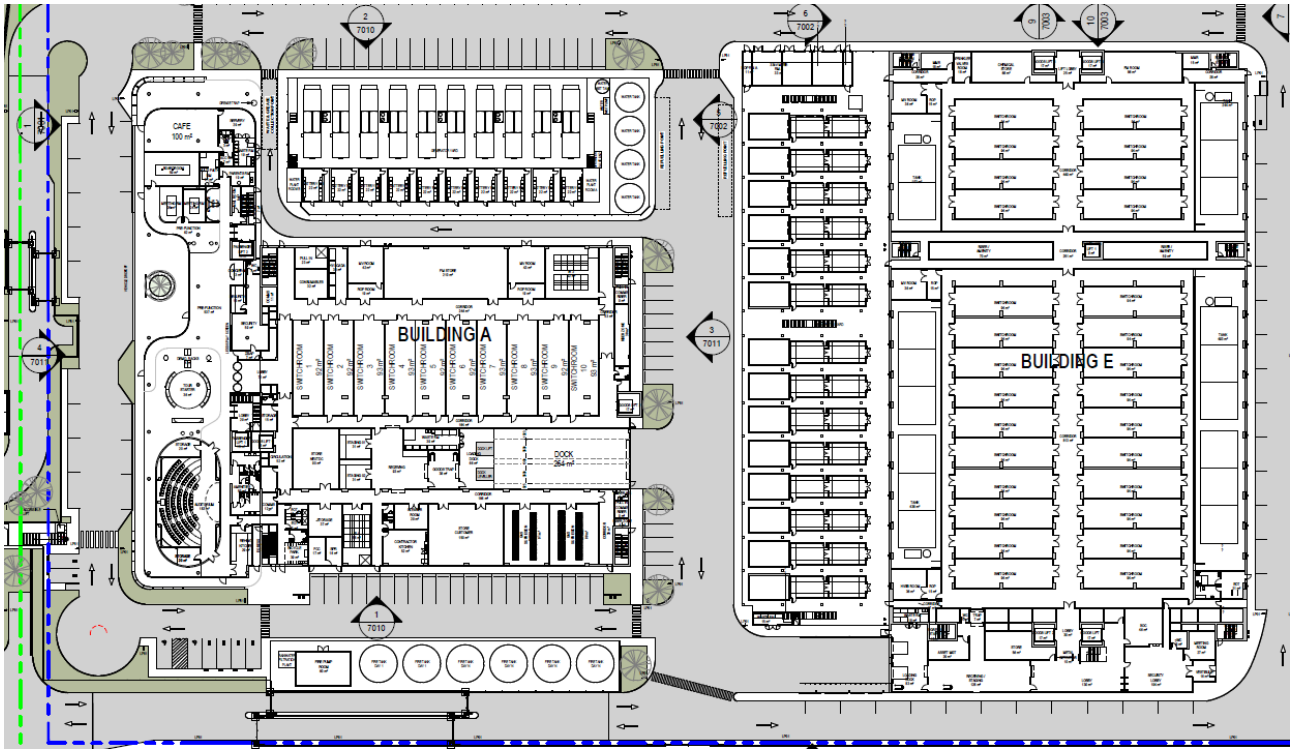
Source: HDR Architects, 2024

Figure 13 Extract of Building A and Building E Ground Floor Plan



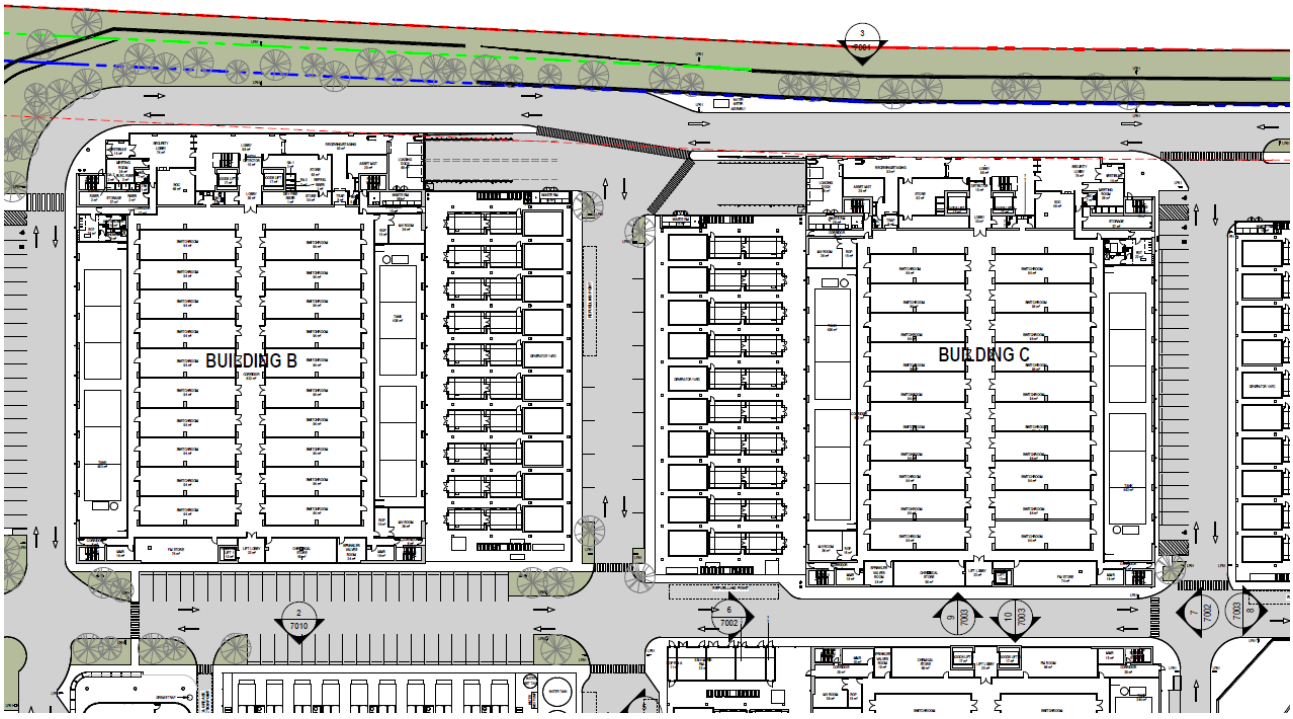
Source: HDR Architects, 2024

Figure 14 Extract of Building A and Building E Ground Floor Plan



Source: HDR Architects, 2024

Figure 15 Extract of Building B and Building C Ground Floor Plan



Source: HDR Architects, 2024

3.2.2.2. Design and Built Form

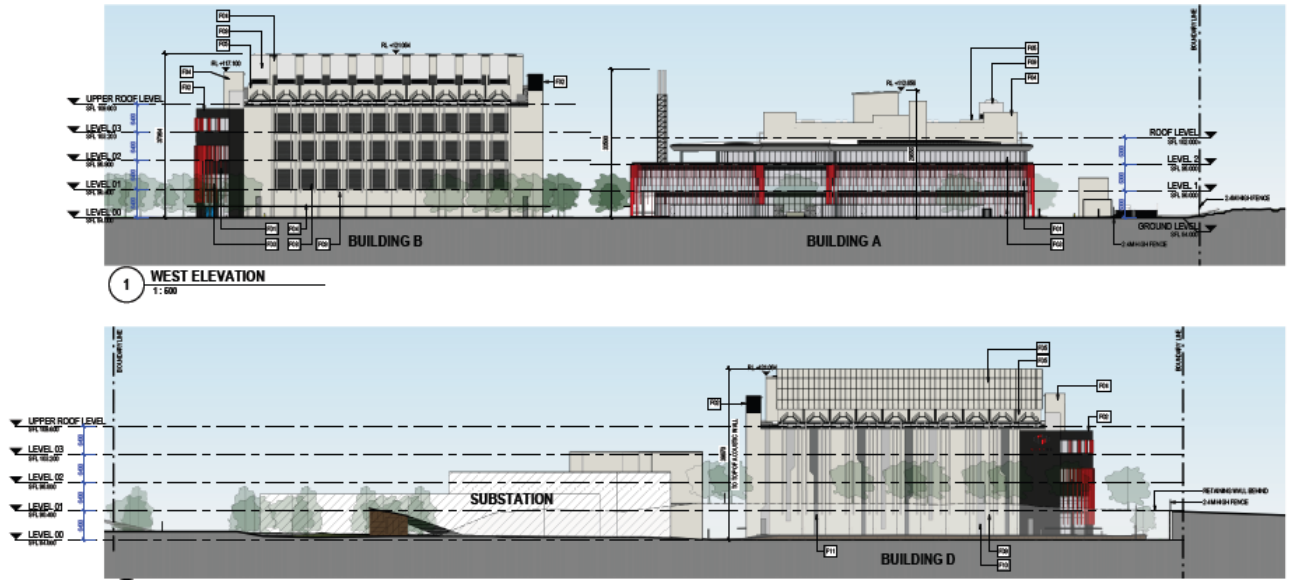
The proposed design and layout provide for a contemporary technology campus setting for the development. The built form is divided into five distinct blocks to allow for internal circulation with a primary frontage to Johnston Cresent to the west and a secondary frontage to Burley Road to the north.

The five data halls will be provided in a grid alignment, comprising two rows. Building A is to be situated in the south-western corner of the site, which is where access to the site will be provided. The siting of the development provides clear sightlines and maximises deep soil areas between buildings while managing natural hazards such as bushfire and flooding. The built form has been arranged and articulated to reflect the primary building functions and to provide an urban scale and finer grained architectural response.

Building A is designed to address the main vehicle entrance into the site and will include the lobby and administration areas. It includes diverse elements not typical of a standard data centre development. These include a cafe, auditorium, kitchens, leisure and respite spaces, high quality mission critical (**MCX**) office spaces and roof terraces.

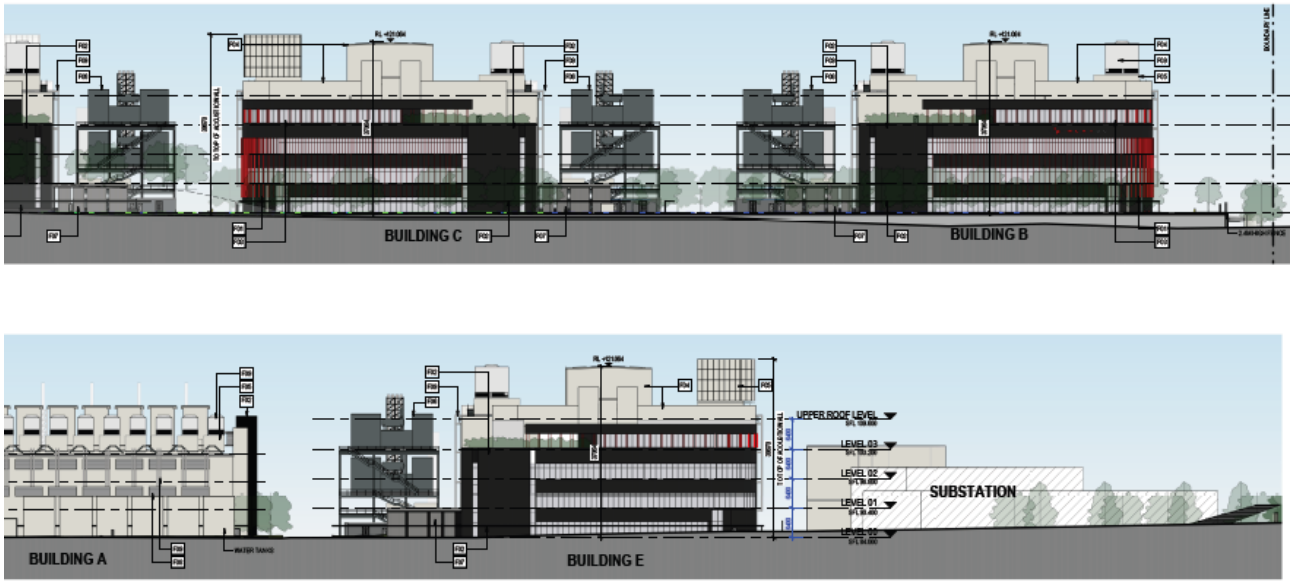
The data halls prioritise security and technical requirements, ensuring seamless operations without compromising the building's overall design integrity. External circulation is strategically incorporated through a covered walkway around buildings, enhancing connectivity while providing protection from weather conditions. The design proposes a generous green curtilage, pockets of planting and green roof terraces.

Figure 16 Proposed West and East Elevation



Source: HDR Architects, 2024

Figure 17 Proposed South and North Elevations



Source: HDR Architects, 2024

3.2.2.3. Materials and Finishes

The facade design strategy integrates red and black hues with pockets of greenery for the admin office locks, contrasting against a precast concrete facade for the data hall blocks. This juxtaposition enhances visual interest while promoting biodiversity.

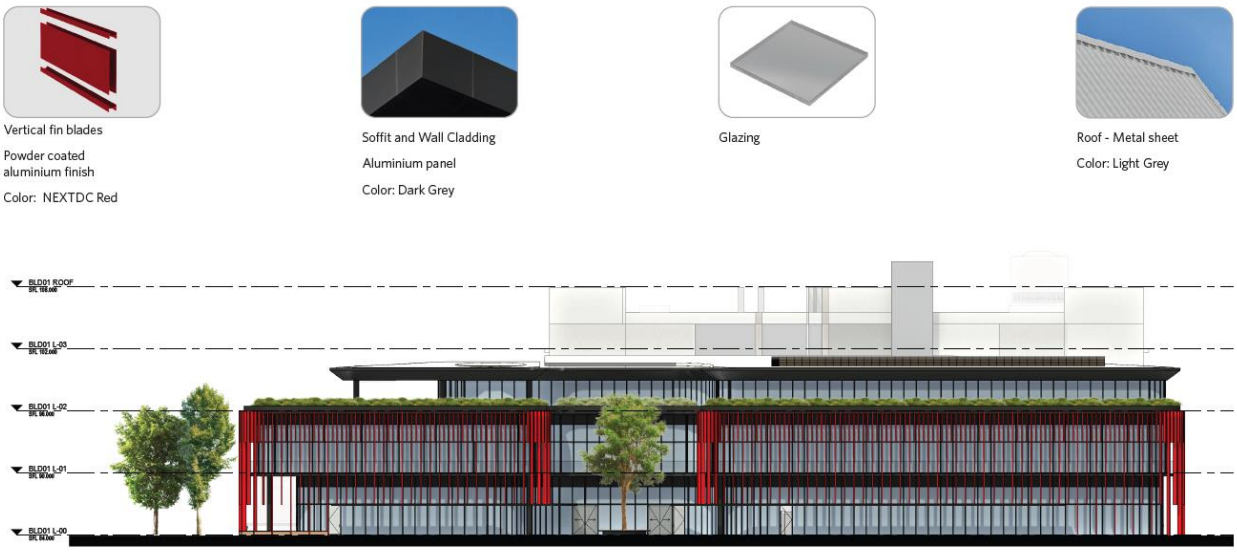
Light-coloured elements at the roof alleviate visual impacts and potential heat load, contributing to a visually balanced and harmonious composition that aligns with the overarching principles of sustainability. The office and innovation floor space will have a distinctive look in comparison to the data hall buildings. Glazing will be incorporated into the façade of both the office spaces and data halls.

The administration office blocks feature a distinct patterning treatment and colour tone selection, creating a welcoming atmosphere for visitors. The facade's design emphasizes separation from the main data centre, ensuring a dedicated and inviting front-of-house experience. This approach fosters a sense of arrival and hospitality, reflecting a commitment to providing exceptional service and accessibility.

The data halls will incorporate a variety of external materials and finishes to allow for functionality and efficiency and will include metal cladding, powdercoated wall finish, metal screening, louvres, stainless steel.

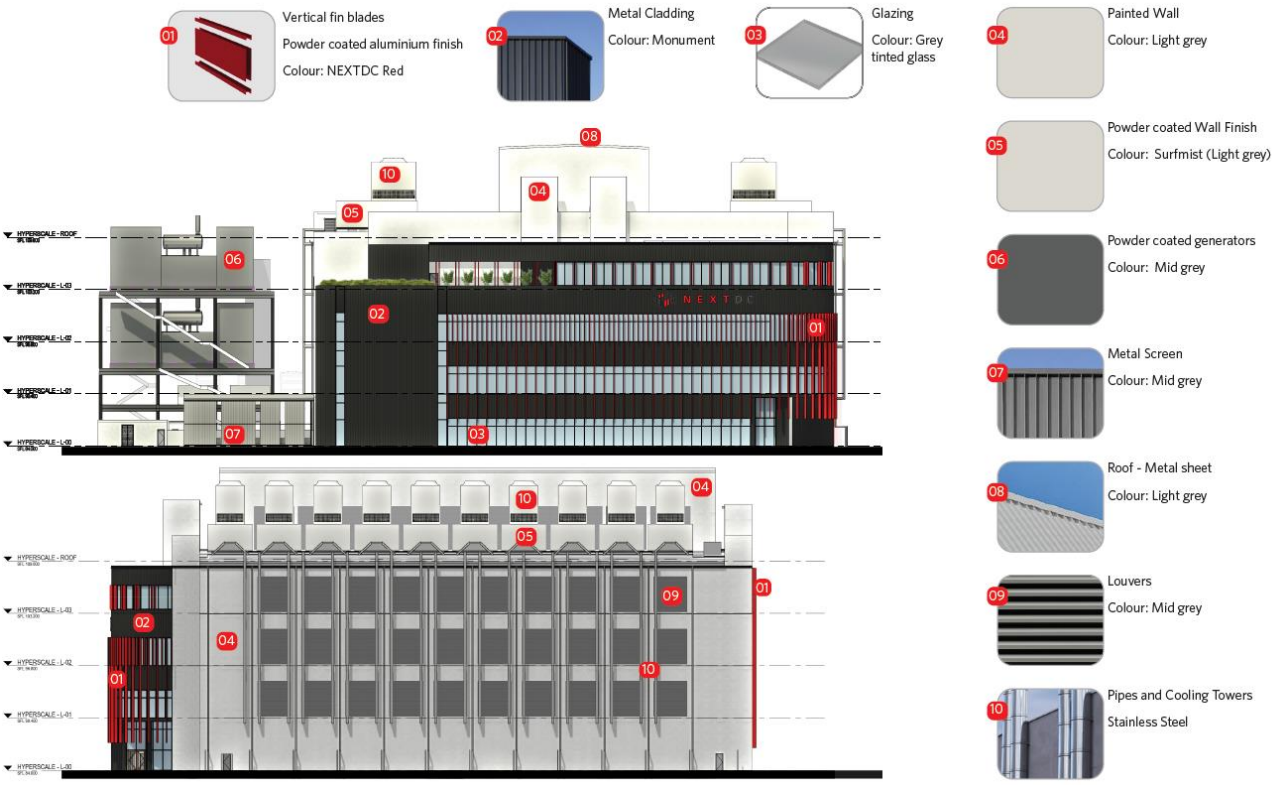
Extracts of the proposed façade design are provided from **Figure 18** and **Figure 19.**

Figure 18 Main Office Building – Materiality and Façade



Source: HDR Architects ,2024

Figure 19 Typical Data Hall with Office Component – Materiality and Façade



Source: HDR Architects, 2024

3.2.3. Signage

The Proposal includes signage associated with the NEXTDC branding. A summary of the signage details is provided below:

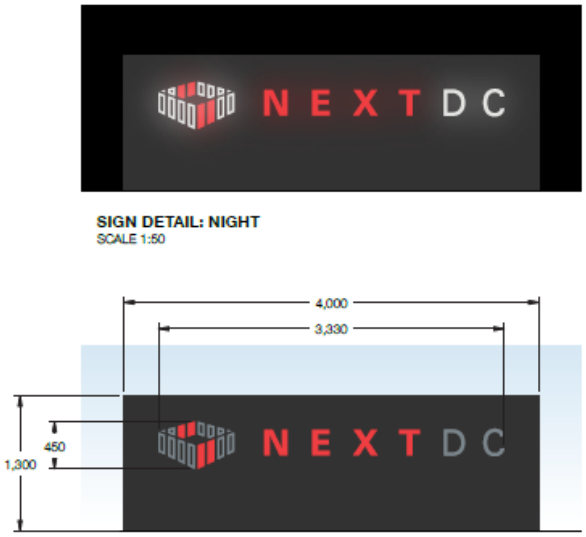
- High-level Building Identification Primary
  - Wall mounted single sided, illuminated.
- High-level Building Identification Secondary
  - Wall mounted single sided, illuminated.
- Site Identification Pylon 6m(h) (x3)
  - Freestanding double-sided, non-illuminated.
- Low Level Building Identification Primary
  - Wall mounted single sided, illuminated.

The signage will incorporate high-quality materials and finishes and provide a coherent and integrated colour scheme based on the branding, logo and colours of NEXTDC. The proposed signage will both comprise of signage affixed directly to the building facades or pylon signage and will comprise of a fabricated aluminium finish. The signage is commensurate with other development signage within the area.

The signage is proposed to be internally illuminated with illumination devices integrated into the design. The signage will be illuminated between 6pm and 6am daily. The illuminated signage is not anticipated to have any negative impacts in terms of glare. The intensity of the illumination will be able to be adjusted, if necessary.

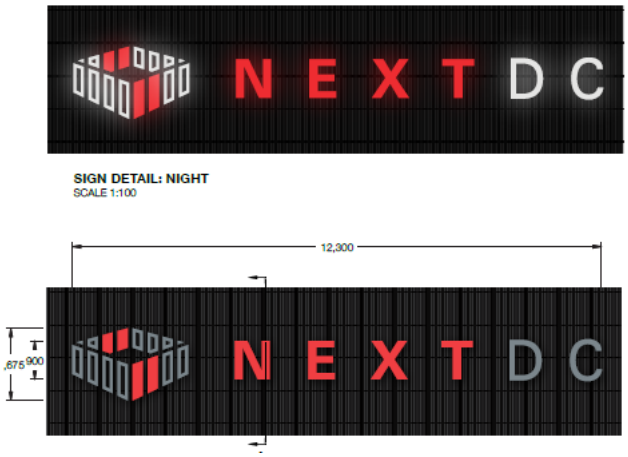
An extract of the proposed signage plans is provided at **Figure 20.**

Figure 20 Proposed Signage



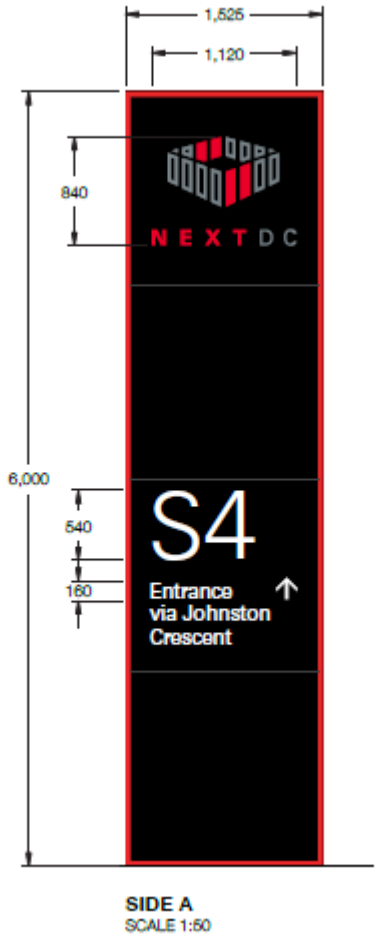
Picture 13 Low Level Building Identification Primary

Source: Diadem, 2024).



Picture 14 High Level Building Identification Primary

Source: Diadem, 2024.



Picture 15 Site Identification Pylon Sign

Source: Diadem, 2024.

Picture 16 High Level Building Identification Secondary

Source: Diadem, 2024.

3.2.4. Landscaping

Landscaping will comprise a mix of native and endemic plant species, shrubs, trees and grasses to provide on-site amenity and an attractive streetscape. A total of 9,900m^2 of deep soil areas will be provided across the site. This equates to approximately 12.1% of the total site area. The landscaping strategy will focus on amenity areas, development frontages and boundary plantings, providing a functional and inviting streetscape and softening the built form through increased planting within the setbacks.

The Building A amenity area provides a space for gatherings, meetings, and breaks. Perimeter planting will provide a green fringe with feature trees providing a point of interest and seasonality though deciduous species. Buildings B-E amenity areas provide breakout spaces from adjacent offices. These areas will include seating for dining, informal meetings and gathering. Perimeter planting will provide a green outlook and shading.

Planting will be concentrated across the two frontages with additional landscaping along the eastern and southeastern frontages. Boundary trees are proposed along Johnston Cresent and Burley Road frontages. Presentation entry feature planting is proposed to prominent corner of the site at the intersection of the roads. Sensitive plantings will be included with the APZ to appropriately manage the ecological zone. A key focus will be complementing the Cumberland Plain that is being retained to the southeast of the site. Species will be in accordance with Fairfield Council Street Tree Management Plan.

An extract of the proposed landscape master plan is provided at **Figure 21.**

Figure 21 Landscape Master Plan

Source: Site Image, 2024

3.2.5. Use and Activities

3.2.5.1. Hours of Operation

The S4 Data Centre facility will operate for 24-hours a day, seven days a week. This allows for the critical nature of their operations and includes loading and unloading, data centre and office operations.

3.2.5.2. Employment

The facility will generate approximately 411 full time employees once fully operational, having regard to 24-hour operations and three 8-hour typical shifts.

These staff will comprise the following roles:

- Executive / sales
- Security / CSR / Concierge
- Operational
- Mission critical office
- External and intermittent maintenance contractors
- Café

Many of the above roles work on an 8hr shift basis, as the development will operate 24/7. Therefore, it is anticipated that the maximum total staff on-site at any given time will be 196 (inclusive of all roles specified above). A staffing occupancy schedule prepared by NEXTDC has been provided as an appendix of Traffic Impact Assessment. A summary is provided below.

	Total staff	**Normal office hours or shift based**	**Max on site at any time**	**Notes**
Building A				
NEXTDC Executive & Sales	15	Normal	11	
NEXTDC Security / CSR / Concierge	9	Shift	3	
NEXTDC Operational	19	Shift	6	
MCX (Mission Critical Office Space)	87	Shift	65	During emergencies
Café Staff	2	Normal	2	
External Maintenance Contractors	15	As required	5	As required – short site durations
Hyperscale Blocks Buildings B-E (per block)				
Client Executives	15	Normal	11	
Security	12	Shift	4	
Operational Staff	19	Shift	6	

	Total staff	Normal office hours or shift based	Max on site at any time	Notes
External Maintenance Contractors	20	As required	5	As required – short site durations
Total Building B-E	66		26	
Total S4	**411**		**196**	

A further 1,111 construction jobs will be generated during the construction phase of the Project.

3.2.5.3. Data Centre

The Proposal includes 52,916m^2 of technical data hall floor space accommodating 34 data houses spread across five buildings. The data halls will be strategically segmented to have the retail enterprise data halls within Building A and hyperscale data halls in Buildings B-E.

This stratification will enhance the spatial efficiency and provide a logical flow of operations, facilitating ease of access and maintenance while enhancing scalability. All data halls will be fitted out with data hardware in a staged manner over time. The specific nature of the data hardware will vary depending on customer requirements, though is likely to include rows of racks.

3.2.5.4. NEXTDC and MCX Offices

The Proposal includes an additional 10,738m^2 of ancillary office floor space. A significant portion of office floor space will be located within the front portion Building A overlooking the entrance to the site. These offices will house NEXTDC employees and provide mission critical (**MCX**) office space for NEXTDC clients.

Building A will include a variety of spaces including board rooms, meeting rooms, an auditorium and training rooms. The auditorium will be used by NEXTDC to host industry seminars, conferences, workshops and other learning and training opportunities for tenants and clients. The transparency of the Building A base will allow for a high degree of activation, and for visual connections between inside and outside.

Each data centre building will include additional ancillary office spaces designed with high quality finishes and delivering superior internal amenity. Other facilities will include staff kitchens, break out areas, meeting rooms and amenities to meet the needs of workers and authorised visitors.

3.2.5.5. Café

A small café (100m^2) is proposed to the ground floor of Building A. The café has been integrated into the ground floor and will provide workers and visitors an opportunity to relax in the outdoor seating. The fit out of the café will be subject to a separate approval via a local DA or complying development certificate, as appropriate.

3.2.5.6. Utilities

The S4 Data Centre facility will include the provision of the following required utilities:

Diesel Fuel Tanks:

- Building A: Above ground diesel storage tanks (10 x 25kL each)
- Buildings B-D: Above ground diesel storage tanks (10 x 65kL each)
- Building E: Above ground diesel storage tanks (14 x 65kL each)

Industrial Water:

- Building A: Above ground water tanks for industrial water (4 x 170kL each)
- Buildings B-D: Above ground water tanks for industrial water (4 x 580kL each)
- Building E: Above ground water tanks for industrial water (6 x 580kL each)

Fire Water:

- Above ground water tanks for fire water (6 x 340kL each)

Substation:

- 330kV substation plus a 33kV switching station on site.

3.2.5.7. Back-up Power System

The back-up power system will provide standby rated continuous power to enable critical data services to operate. The back-up generator system comprises a total of 98 low voltage 3MW generators and 10 low voltage 2MW generators to supply the data centre in the event of mains power failure. Each generator will be supplied with a 48hrs worth of fuel storage.

These generators will only operate in the event of a mains utility failure to the respective electrical block or for testing purposes. These generators will support a total of 296MW of back-up power. Major power interruptions requiring the simultaneous operation of all standby generators are envisaged to only occur infrequently and for a limited time.

A summary of the generator quantity proposed and generator testing regime is provided below. A total cumulative testing duration of not more than 200-hours in a year.

Parameter	Value
Number of generators	98
Test frequency per generator	4 standard tests per year
Run time per test	2 tests run for 20 minutes, 1 test runs for 40 minutes, 1 test runs for 90 minutes. Total runtime of 170 minutes per year
Number of generators per test	Up to 2 generators per standard test
Number of tests per day	Up to approximately 33 tests may be run in a single day. Dependant on the test, personnel efficiency, etc
Testing schedule	7am and 6pm (Monday to Saturday or Public Holidays) or 8am and 6pm on Sundays
Total testing time for all generators	153 hours per year

3.2.5.8. Plant and Equipment

The Proposal consists of five data centre buildings as described below:

Building A is supported by:

- 33kV, 20MVA, redundant, HV, incoming supplies.
- Two 33kV switchboards, which in turn supply one open point, HV rings within each building.
- The ring supports 10 x 33 kV ring main units.

Buildings B, C, and D are supported by:

- 33kV, 60MVA, redundant, HV, incoming supplies.
- Two 33kV switchboards, which in turn supply four open point, HV rings within each building.

- Each ring supports five 33 kV ring main units (20 in total).

Building E is supported by:

- 33kV, 72MVA, redundant, HV, incoming supplies.
- Two 33kV switchboards, which in turn supply six open point, HV rings within each building.
- Each ring supports up to five 33 kV ring main units (28 in total).

The specific services in each building are described below.

Building A:

The data centre building comprises four 2.5MW IT load enterprise data halls. The four enterprise data halls are electrically and mechanically combined with a single set of services to support the overall 10MW IT load.

The approximate power usage effectiveness (**PUE**) is 1.4, meaning the building has an approximate total load of 14MW. The 14MW load is supported by the following electrical system:

- 10 x 2MW strings in two cables in a distributed redundant configuration. Each electrical string consists of:
  - 33KV ring main unit.
  - 2.25MVA transformer.
  - 2MWe diesel generator.
  - Two 1MWe UPS systems.
  - 1.5MWr water cooled chillers.
  - 1.75MWr cooling towers.
- Total numbers of equipment across Building A:
  - Two HV switch rooms.
  - 10 x 33KV ring main units.
  - 10 x 2.25MVA transformers.
  - 10 x 2MWe diesel generators.
  - 20 x 1MWe UPS systems.
  - 10 x 1.5MWr water cooled chillers.
  - 10 x 1.75MWr cooling towers.
- The chiller and associated cooling towers have the same redundancy as the electrical systems (5N4).
- The chillers supply CHW headers and distribution pipework that supports 20 x computer room air handler (**CRAH**) units, per data hall.
- Each data hall has the capability to draw fresh air to reduce the mechanical cooling load for each data hall. The free cooling will have the capacity to support approximately 60% of the overall cooling load for a specific data hall, dependent on ambient conditions.

Building B, C and D:

Each data centre building comprises six 6MW IT load hyperscale data halls. The six hyperscale data halls are electrically and mechanically combined with a single set of services to support the overall 36MW IT load.

The approximate PUE is 1.4, meaning the building has an approximate total load of 50.4MW. The 50.4MW load is supported by the following electrical system:

- 20 x 3MW strings in four cables in a distributed redundant configuration. Each electrical string consists of:
  - 33KV ring main unit.

  - 3.5MVA transformer.
  - 3MWe diesel generator.
  - Three 1MWe UPS systems.
  - 2.5MWr water cooled chillers.
  - 2.895MWr cooling tower.
- Total numbers of equipment across each building:
  - Two HV switch rooms.
  - 20 x 33KV ring main units.
  - 20 x 3.5MVA transformers.
  - 20 x 3MWe diesel generators.
  - 60 x 1MWe UPS systems.
  - 20 x 2.5MWr water cooled chillers.
  - 20 x 2.895MWr cooling towers.
- The chiller and associated cooling towers have the same redundancy as the electrical systems (5N4).
- The chillers supply CHW headers and distribution pipework that supports 20 x Fan Wall Units (**FWUs**), per data hall.
- Each data hall has the capability to draw fresh air to reduce the mechanical cooling load for each data hall. The free cooling will have the capacity to support approximately 60% of the overall cooling load for a specific data hall, dependent on ambient conditions.

Building E:

The data centre building comprises six 6MW IT load hyperscale data halls and six 2MW IT load hyperscale data halls. The 12 x hyperscale data halls are electrically and mechanically combined with a single set of services to support the overall 48MW IT load.

The approximate PUE is 1.4, meaning the building has an approximate total load of 67.2MW. The 67.2MW load is supported by the following electrical system:

- 20 x 3MW strings in four cables in a distributed redundant configuration and eight 3MW strings in two cables in a distributed redundant configuration. Each electrical string consists of:
  - 33KV ring main unit.
  - 3.5MVA transformer.
  - 3MWe diesel generator.
  - Three 1MWe UPS systems.
  - 2.5MWr water cooled chillers.
  - 2.895MWr cooling tower.
- Total numbers of equipment across the building:
  - Two HV switch rooms.
  - 28 x 33KV ring main units.
  - 28 x 3.5MVA transformers.
  - 28 x 3MWe diesel generators.
  - 84 x 1MWe UPS systems.

  - 28 x 2.5MWr water cooled chillers.
  - 28 x 2.895MWr cooling towers.
- The chiller and associated cooling towers have the same redundancy as the electrical systems (5N4 or 4N3)
- The chillers supply CHW headers and distribution pipework that supports 20 x FWUs per 6MW data hall and 8 x FWUs per 2MW data hall.
- Each data hall has the capability to draw fresh air to reduce the mechanical cooling load for each data hall. The free cooling will have the capacity to support approximately 60% of the overall cooling load for a specific data hall, dependent on ambient conditions.

3.2.5.9. Stormwater Management

All new stormwater is required to be conveyed by gravity and discharge from the site via Council's existing drainage system and existing catchment conditions will be maintained where practical. Surface stormwater flows will be conveyed by site grading and collected by Surface Inlet Pits (**SIP**).

Stormwater management design allows for overland flows to be directed away from buildings in the event of blockages. Emergency overland flow paths will be directed along the internal access roads towards the road reserve to the west and north of the site. Surface and roof flows collected by the in-ground stormwater network will be directed to on-site stormwater detention (**OSD**) and water quality treatment devices. Roof catchments will be collected in roof gutters and conveyed by downpipes to an in-ground pipe system.

The stormwater design will be staged. Stormwater within the Stage 1 boundary is to be completed in Stage 1. OSDs 1, 2 and 5 are to be constructed at Stage 1. Temporary sedimentation basins will be located within Stage 2 and Stage 3 areas as interim solutions prior to the construction of OSDs 3 and 4 for temporary stormwater detention purposes. The remaining stormwater infrastructure will be completed as part of Stage 2 and Stage 3 after which the temporary sedimentation basins will be removed.

3.2.6. Parking and Access

3.2.6.1. Access

The site is to be serviced by internal private roads that provide access throughout the site, running adjacent to each building. The internal roads are proposed to comprise primarily of two-way aisles with the following one-way aisles provided:

- Northbound aisle provided along the eastern sides of Building D and E;
- Westbound aisle along the northern side of Building D; and
- Eastboound aisle along the southern side of Building D.

An internal minor roundabout in the south-western corner of Building A will assist with vehicle movements across the site.

Passenger Vehicle Access

Passenger vehicle access to the site is proposed via an approximately 7m wide combined ingress/egress driveway connecting with Johnston Crescent, approximately central on the western boundary of the site. This driveway is to connect to an internal roadway that provides access to the proposed passenger drop off/pick up adjacent to the Building A, on-site parking areas and the rest of the internal private road network.

Heavy Vehicle Access

A separate 17m wide heavy vehicle access driveway is proposed to the south of the above-mentioned passenger vehicle driveway, connecting to Johnston Crescent in the south-western corner of the site. This driveway has been designed to accommodate the largest vehicle to access the site, being 20m long Articulated Vehicles, and provides access to a secure internal roadway, where heavy vehicles can access the loading areas associated with each proposed building.

Pedestrian Access

Pedestrian access to the site is facilitated by a staircase and adjacent accessible ramp connecting the eastern Johnston Crescent footpath to the entrance of Building A. Marked pedestrian crossings have been provided throughout the site where pedestrians are required to crossing internal roadways. As shown in **Figure 22**, the circulation is strategically incorporated through a covered walkway around buildings, enhancing connectivity while providing protection from weather conditions.

Figure 22 Internal Pedestrian Flow

Source: HDR Architects, 2024

3.2.6.2. Parking

The Proposal comprises the following parking provision:

- 200 passenger vehicle parking spaces:
  - 6 accessible parking spaces
  - 10 electric vehicle charging-equipped spaces
- 5 motorcycle parking spaces
- 24 bicycle parking spaces

Parking areas will be located across the site adjacent to the entrances of each of the buildings.

3.2.6.3. Service and Loading

Servicing and loading activities via vans and utility vehicles will occur within the visitor parking areas on site. Heavy vehicle servicing will occur within the dedicated loading docks provided within each building, capable of accommodating vehicles up to and including 20m long articulated vehicles.

3.2.7. Public Domain Works

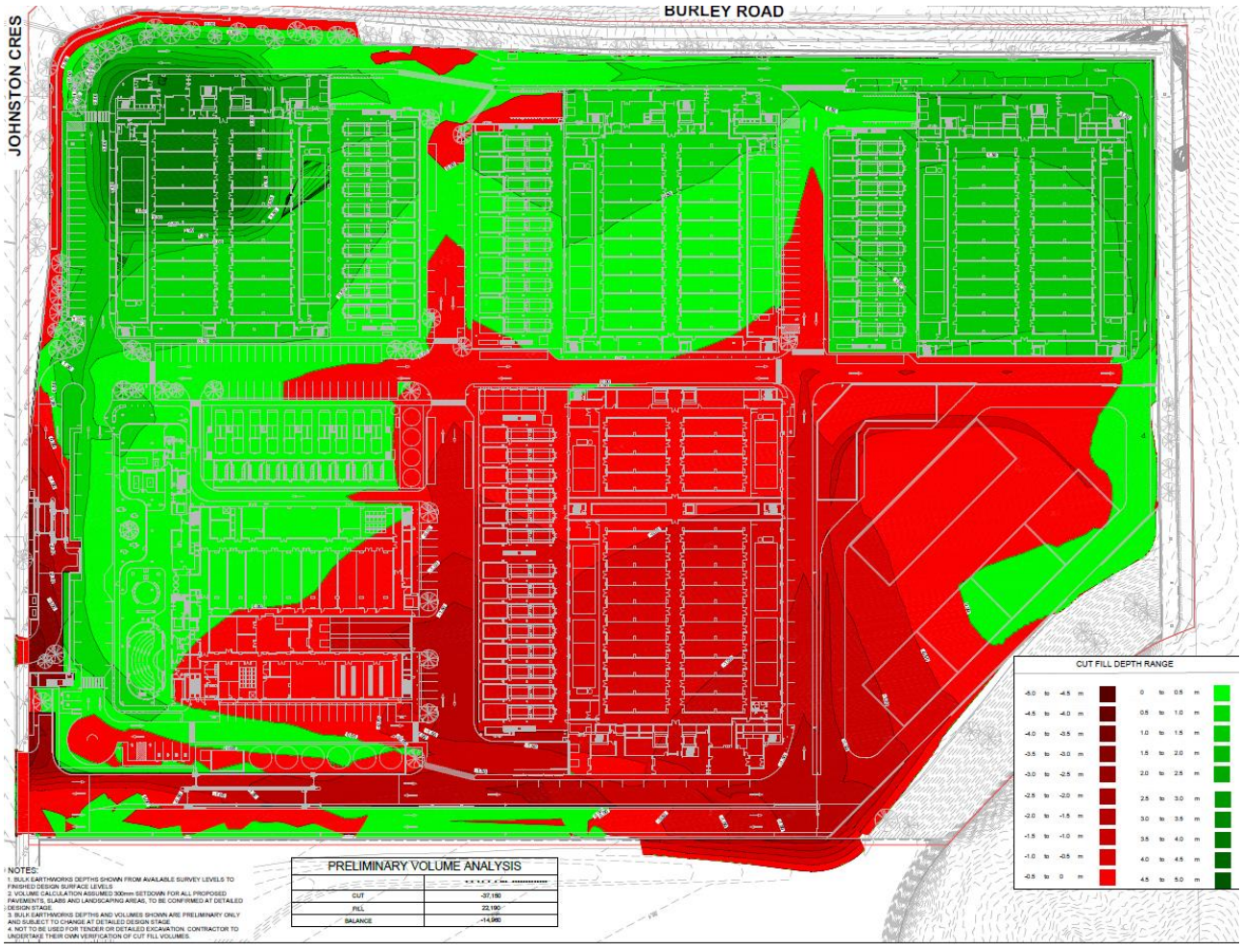
All public domain works will be completed in Stage 1. The scope of civil works to the public domain includes the following:

- Vehicle crossings for passenger vehicles and commercial vehicles to Johnston Crescent to the west of the site, complying with Council's guidelines, Council's engineering specifications and relevant Australian Standards.
- Minor public road footpath amendments on the eastern side of Johnston Crescent, where required, to accommodate the proposed drop-off/pick-up area.
- Proposed in-ground stormwater pit and pipe connections to the west of the site to connect proposed site drainage to the existing road drainage.

3.2.8. Bulk Earthworks

Site preparation works will include additional bulk earthworks to establish five building pads with a total net cut (excavation) of 16,040m^3. As shown in **Figure 23**, most of the cut is within the centre of the site, with a maximum cut level of between three to four metres. All works will be undertaken in accordance with the Preliminary Construction Traffic Management Plan and Waste Management Plan lodged with the SSDA.

Figure 23 Cut and Fill Plan



Source: TTW, 2024

3.2.9. Tree Removal

A total of six trees located on the Council street verge adjoining the site will need to be removed to accommodate the development. The Proposal will offset the required tree removal through the planting of additional street trees.

3.2.10. Development Staging

The Project will be constructed in three stages as detailed below:

- Stage 1: Building A, Building B, Building C and Substation.
- Stage 2: Building D.
- Stage 3: Building E.

Staging Plans have been prepared and lodged with the SSDA.

Figure 24 Staging Plans – Stage 1

Source: HDR Architects ,2024

3.2.11. Construction Activities

Construction of the Project is expected to occur for a total period of **40 months**. The indicative construction staging, and estimated duration of construction is summarised in **Table 12.** The construction timeline will be confirmed once a Contractor has been appointed.

Table 12 Indicative Construction Program

Construction Activities	Duration (months)	Indicative Timing
Excavation and Site Preparation	5 months	June 2025 to October 2025 *dependent on SSDA approval timeframe - assume 9 month timeframe
Construction and Building Works (Stage 1 – Building B) including substation	24 months	October 2025 to September 2027
Construction and Building Works (Stage 1 – Building C)	18 months	October 2026 to March 2028
Construction and Building Works (Stage 1 – Building A)	18 months	April 2027 to September 2028
Construction and Building Works (Stage 2 – Building D)	12 months	October 2028 to September 2029
Construction and Building Works (Stage 3 – Building E)	12 months	April 2029 to March 2030
Total	58 months	June 2025 to March 2030

Construction Hours

It is envisaged that the standard construction work hours will be as follows:

- Monday to Friday: 7am – 5pm
- Saturday: 8am – 1pm
- Sunday and Public Holidays: No works

Any works outside these times will only occur with approval from the relevant authorities prior to the commencement of any works. Such works may include night works and delivery of cranes, large plant or equipment required for the site.

Construction Vehicles and Access

A construction driveway will be established providing connectivity for construction vehicles to enter and exit the site. The construction driveway will link Johnston Crescent and the south-western corner of the site. Connectivity to the broader arterial road network will be via selected routes established to avoid local roads and school zones. This will limit potential, broader reaching impacts resulting from the localised construction works at the subject site. **Figure 25** shows the Construction Vehicle Access Routes.

The largest anticipated construction vehicles to enter and exit the site will be confirmed upon appointment of a contractor. However, it is anticipated that construction vehicles will typically include, vans, utility vehicles and up to 20m long articulated vehicles. Staggering of arrival of construction vehicles will occur during high anticipated construction activity on site to minimise traffic disruptions.

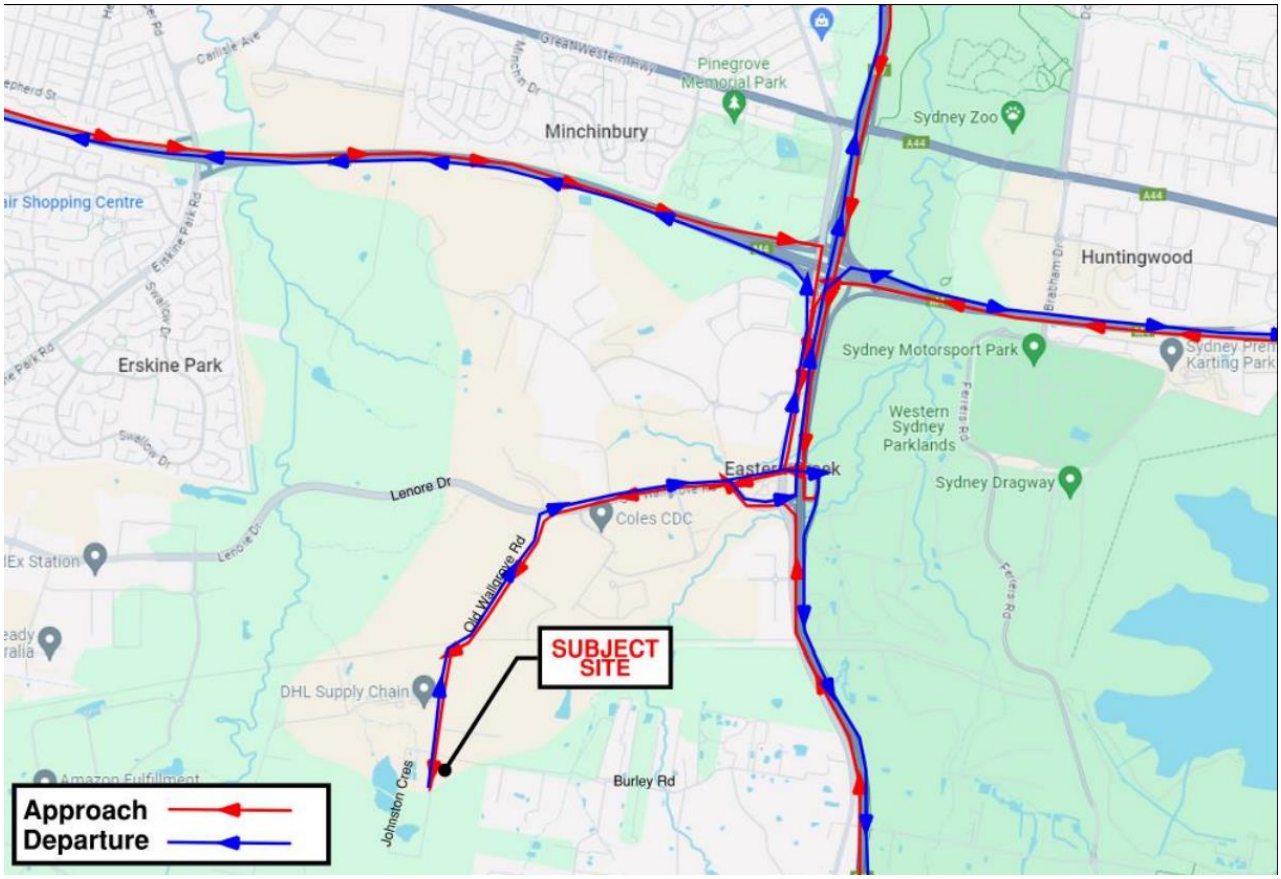
Construction Traffic Generation

It is anticipated that that evenly distributed movements of heavy construction vehicles will be approximately 75 vehicle movements per day. Of this, only 16 anticipated construction vehicle movements will occur during peak hours.

Construction of the Proposal will necessitate the entrance and exit of light vehicles during construction works. In this regard, it is anticipated that 30% of construction works will access the site during peak hours.

Construction vehicle parking will be situated entirely within the boundaries of the site due to an absence of on-street parking. This will remove the requirement for the establishment of 'work zones' as works and deliveries can wholly be accommodated onsite.

Figure 25 Construction Vehicle Access Routes



Source: TTW, 2024

4. STATUTORY CONTEXT

This section of the report provides an overview of the key statutory requirements relevant to the site and the Project, including:

- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**)
- *NSW Biodiversity Act 2016* (**BC Act**)
- *Protection of the Environment Operations Act 1997* (**POEO Act**)
- *Roads Act 1993* (**Roads Act**)
- *Environmental Planning and Assessment Act 1979* (**EP&A Act**)
- *Environmental Planning Assessment Regulation 2021* (**EPA Regulation**)
- *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (**B&C SEPP**)
- *State Environmental Planning Policy (Planning Systems) 2021* (**Planning Systems SEPP**)
- *State Environmental Planning Policy (Resilience and Hazards) 2021* (**R&H SEPP**)
- *State Environmental Planning Policy (Transport and Infrastructure) 2021* (**T&I SEPP**)
- *State Environmental Planning Policy (Sustainable Buildings) 2022* (**Sustainable Buildings SEPP**)
- *State Environmental Planning Policy (Industry and Employment) 2021* (**I&E SEPP**)
- *Fairfield Local Environmental Plan 2013* (**FLEP 2013**)

Consideration is also required to be given to the following non-statutory matters:

- Western Sydney Employment Area – Fairfield Development Control Plan 2016 (**WSEA Fairfield DCP**).

It identifies the key statutory matters which are addressed in detail within the EIS, including the power to grant consent, permissibility, other approvals, pre-conditions and mandatory considerations.

4.1. STATUTORY REQUIREMENTS

Table 13 categorises and summarises the relevant requirements in accordance with the DPHI *State Significant Development Guidelines*. A detailed statutory compliance table for the Project is provided at **Appendix B**.

Table 13 Identification of Statutory Requirements for the Project

Statutory Relevance	**Action**
Power to grant approval	The Planning Systems SEPP identifies development that is SSD, State significant infrastructure and regionally significant development. In accordance with Schedule 1, development for the purpose of a data centre that has a total power consumption greater than 15 megawatts is classified as SSD: ***25 Data centres*** *(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—*

Statutory Relevance	Action
	(a) for development in relation to which the relevant environmental assessment requirements are notified under the Act on or before 31 May 2023—10 megawatts, or *(b) for any other development—15 megawatts.* The proposed data centre has a megawatt capacity of 232 megawatts and accordingly, the Proposal is classified as SSD.
Permissibility	The site is zoned IN1 General Industrial in accordance with the I&E SEPP. The proposed development constitutes a 'data centre' which is defined as following: > ***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 in turn, is considered a type of 'light industry' which sits under the group term of 'industry'. Industries (other than offensive or hazardous industries) are permitted with consent in the IN1 General Industrial zone. The Proposal includes 10,738m^2 of ancillary office space. The office floor space will be used as mission critical space (**MCX**) by customers of NEXTDC. An auditorium and other internal spaces are proposed and will be used by NEXTDC to host industry seminars, conferences and workshops for tenants and clients as well as broader industry partners and stakeholders in government and universities. Planning Circular PS 21-008 ('How to characterise development') outlines that an ancillary use is a use that is subordinate or subservient to the dominant purpose on the land. Accordingly, the office and innovation components are permitted as being ancillary to the data centre as the primary land use. The Proposal includes a café at ground level which will primarily be used by NEXTDC workers and visitors. However, a café is categorised as a 'food and drink premises' and is permitted with consent in the IN1 zone, enabling its approval as a stand-alone/independent land use activity rather than as an ancillary use.
Other Approvals	***Roads Act 1993*** The Project proposes to connect a new driveway to the existing road network via Johnston Crescent. An approval under section 138 of the *Roads Act 1993* may be required.
	Protection of the Environment Operations Act 1997 The *Protection of the Environment Operations Act 1997* (**POEO Act**) sets out the scheduled activities for which a licence is required. Relevant to this Project is clause 9 under schedule 1 of the POEO Act, which relates to 'chemical storage'. For the purpose a scheduled activity, 'chemical storage' includes petroleum products storage, which is defined as 'the storage or packaging of petroleum products in containers, bulk storage facilities or stockpiles.

Statutory Relevance	Action
	The Project includes approximately 3,000 tonnes of diesel to be stored on-site. This is above the 2,000-tonne limit and so the diesel storage will be classified as a scheduled activity for which a license is required. As such, an Environmental Protection License (**EPL**) will be required as per the requirements of schedule 1 clause 9 of the POEO Act. Approximately 455 tonnes of lithium-ion batteries will be stored onsite. This is below the 2,000-tonne limit and so lithium-ion battery storage is not classified as a scheduled activity and a licence is not required.
EPBC Act	Under the EPBC Act 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 Matters of National Significance, it is declared a "Controlled Action" for which formal Commonwealth approval is required. Based on investigations, the Project does not warrant referral to the Commonwealth Minister for Environment. The site has been cleared of all vegetation and no significant impacts on any MNES as a result of the Project are expected to occur.
No requirements for other approvals have been identified at this stage.	

4.2. PRE-CONDITIONS

Table 14 outlines the pre-conditions to exercising the power to grant approval which are relevant to the Project and the section where these matters are addressed within the EIS.

Table 14 Pre-Conditions

Statutory Reference	Pre-condition	Relevance	Section in EIS
EPA Regulation	Part 8 Infrastructure and environmental impact assessment. An environmental impact statement must be prepared in accordance with the SEARs issued for the Project, and contain the relevant information identified in sections 190 and 192 of the EPA Regulation.	This EIS has been prepared in accordance with Part 8 of the EPA Regulation. This EIS addresses the SEARs issued by the Secretary pursuant to section 175 of the EPA Regulation and contains the detailed information identified in section 190	**Signed Declaration** SEARs reference table at **Appendix A.**

Statutory Reference	Pre-condition	Relevance	Section in EIS
		and section 192 of the EPA Regulation. Specifically, this includes a statement prepared by a Registered Environmental Assessment Practitioner. The Proposal is consistent with the principles of ESD as per section 193 of the EPA Regulation as discussed in **Section 7.** This application will be placed on public exhibition on the NSW Major Projects Portal.	
R&H SEPP -section 4.6(1)	A consent authority must be satisfied that the land is suitable in its contaminated state - or will be suitable, after remediation - for the purpose for which the development is proposed to be carried out.	Remediation works were completed by the previous owner CSR prior to the purchase of the site by NEXTDC. A Contamination and Remediation Status Letter was prepared by JK Environments which confirms that the site has been satisfactorily remediated and is suitable for the proposed data centre (high tech industry land use).	**Section 6.2.3** **Appendix B**
B&C SEPP section 8.8(1)	A consent authority must not grant consent to the carrying out of development under Part 4 of the Act on land in the Sydney drinking water catchment unless it is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on water quality.	The Project is located on land within the Sydney drinking water catchment. The nature of this Project and the location of the site are such that there are no specific controls which directly apply, with the exception of the objective of improved water quality. The proposed development has been designed in accordance with the	**Appendix R** and **Appendix S**

Statutory Reference	Pre-condition	Relevance	Section in EIS
		stormwater management scheme for the Council as outlined in the Civil Engineering Report and Civil Plans and is therefore unlikely to result in any significant environmental impacts.	

4.3. MANDATORY CONSIDERATIONS

Table 15 outlines the relevant mandatory considerations to exercising the power to grant approval and the section where these matters are addressed within the EIS.

Table 15 Mandatory Considerations

Statutory Reference	Mandatory Consideration	Section in EIS
Consideration under the EPA Regulation		
Section 193	Consideration of the principles of ecologically sustainable development	**Appendix B**
Consideration under the EP&A Act		
Section 1.3	Relevant objects of the EP&A Act	**Appendix B**
Section 4.15	Relevant environmental planning instruments	**Appendix B**
	Planning Systems SEPP	**Appendix B**
	I&E SEPP	**Appendix B**
	R&H SEPP	**Appendix B**
	T&I SEPP	**Appendix B**
	B&C SEPP	**Appendix B**
	Sustainable Buildings SEPP	**Appendix B**
	FLEP 2013	**Appendix B**
	Relevant draft environmental planning instruments ▪ There are no draft EPIs relevant to the proposed development.	**N/A**
	Relevant planning agreement or draft planning agreement ▪ There are no planning agreements relevant to the proposed development.	**N/A**

	Development control plans ▪ Western Sydney Employment Area – Fairfield Development Control Plan 2016 (**WSEA Fairfield DCP**).	**Appendix B**
	The likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	**Section 6** and **Section 7.5**
	The suitability of the site for the development	**Section 7.6**
	The public interest	**Section 7.7**
Mandatory relevant considerations under EPIs		
R&H SEPP - section 3.7	Departmental guidelines: ▪ Applying SEPP 33 (identify relevant requirements) ▪ HIPAP No.3 – Risk Assessment (identify relevant requirements) ▪ HIPAP No.12 – Hazards – related Conditions of Consent	**Appendix B** and **Section 6.1.7**
R&H SEPP - section 4.6	(1) A consent authority must not consent to the carrying out of any development on land unless— (a) it has considered whether the land is contaminated, and (b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and (c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.	**Section 6.2.3**
B&C SEPP – sections 8.7 and 8.8	Water NSW's current recommended practices and standards. Development consent cannot be granted unless neutral or beneficial effect on water quality	**Appendix R** and **Appendix S**
T&I SEPP – section 2.122	Section 2.122 and schedule 3 of the T&I SEPP identifies 'traffic generating development' which must be referred to the RMS for concurrence. The schedule includes development for the purposes of 'industry' with a site greater than 20,000m^2 or equivalent gross floor area (**GFA**).	**Appendix B**
Sustainable Buildings SEPP – Chapter 3 – Standards for non-residential development	<u>Section 3.2 - Development consent for non-residential development</u> The consent authority must consider whether the development has been designed to enable: ▪ Minimisation of waste from demolition and construction, including by the choice and reuse of building materials	**Appendix B, Appendix N** and **Appendix EE**

	▪ Reduction in peak demand for electricity, including through the use of energy efficient technology. ▪ Reduction in reliance of artificial lighting and mechanical heating and cooling through passive design. ▪ Generation and storage of renewable energy ▪ Metering and monitoring of energy consumption. ▪ Minimisation of consumption of potable water. <u>Section 3.3 - Other considerations for large commercial development</u> 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 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. 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&E SEPP – Chapter 2	Chapter 2: Western Sydney Employment Area: ▪ Part 2.2 Permitted or prohibited development ▪ Part 2.3 Development Control Plans ▪ Part 2.4 Principle Development Standards ▪ Part 2.5 Miscellaneous provisions	**Appendix B**
I&E SEPP – Chapter 3 and Schedule 5	A consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied that the signage is consistent with the objectives of this Chapter as set out in section 3.1(1)(a), and that the signage the subject of the application satisfies the assessment criteria specified in Schedule 5.	**Appendix B**
Considerations under other legislation		
BC Act – section 7.14	The BC Act protects native vegetation, species of threatened flora and fauna, endangered populations and endangered ecological communities and their habitats in NSW. Section 7.9 requires a development application for SSD to be accompanied by a Biodiversity Development Assessment Report (**BDAR**), unless the Planning Agency Head and the Environment Agency Head determines that the proposed development is not likely to have any significant impact on biodiversity values.	**Appendix B**

	A request to waive the requirement for a BDAR was prepared by Narla Environmental and submitted to DPHI on 29 January 2024. A BDAR waiver was subsequently issued by the DHPI for the Project on 29 February 2024.	
Development Control Plans		
WSEA Fairfield DCP	Section 2.10 of the Planning Systems SEPP states that development control plans (whether made before or after the commencement of this Policy) do not apply to SSD. As such, there is no requirement to assessment of the Proposal against the WSEA Fairfield DCP for this SSDA. Notwithstanding this, consideration has been given to the following provisions: ▪ Chapter 3 - Environmental Management ▪ Chapter 4 – Development Controls	**Appendix B**
Development Contributions Plan		
Fairfield City Council Indirect (Section 7.12) Development Contributions Plan 2011	The proposed development will be subject to section 7.12 contributions. The proposed development will also be subject to the Housing and Productivity Contribution of $15 per square metre of new GFA.	**Section 4**

5. COMMUNITY ENGAGEMENT

The following sections of the report describe the engagement activities that have been undertaken during the preparation of the EIS and the community engagement which will be carried out if the Project is approved.

5.1. ENGAGEMENT CARRIED OUT

Community and stakeholder engagement has been undertaken by the Project Team in the preparation of the SSDA. This included direct engagement and consultation with:

- Surrounding landowners, tenants and businesses.
- Registered Aboriginal Parties (**RAPs**), including Metropolitan Local Aboriginal Land Council
- Government, agency and utility stakeholders as listed within the SEARs.

The following actions were taken to inform the community regarding the Project and seek feedback regarding the Proposal:

- Letterbox drop of community newsletter
- Enquiry management
- E-newsletter
- Stakeholder briefings

The community engagement activities were tailored to the site context, having regard to the established industrial precinct, the existing development and the closest residential and sensitive land uses. Other government agencies, utility providers and key stakeholders consulted during the preparation of the SSDA included:

- Fairfield City Council
- Penrith City Council
- Blacktown City Council
- Department of Planning, Housing and Infrastructure (Planning assessment team, Environment and Heritage teams)
- Transport for NSW
- TransGrid
- Sydney Water
- Western Parkland City Authority.

This engagement was consistent with the community participation objectives in the *Undertaking Engagement Guidelines for State Significant Projects* and requirements in the SEARs.

In accordance with the EPA Regulation, the EIS will be placed on formal public exhibition once DPHI 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.

5.2. GOVERNMENT AGENCY VIEWS

Engagement with a variety of government agencies was undertaken through the EIS preparation stage. Responses received were generally for minor clarifications and updated drawings, all of which were provided to the relevant agencies.

Fairfield City Council

A meeting was held with the Fairfield City Council on 10 November 2023 to understand their key issues and matters that needed to be considered in the final siting and design of the Proposal in accordance with the SEARs.

Council acknowledged the required technical documents outlined in the SEARs issued by NSW DPHI (dated 27 October 2023), and requested the Proponent address the following matters as part of the EIS package:

- Potential impacts to amenity for the adjoining rural-residential area
- Visual Impact Assessment
- Air Quality and Odour Assessment
- Noise Impact Assessment
- Community Engagement Plan
- Environmental Management Plans
- Plan of Management
- Traffic and Parking Impact Assessment
- Landscaping and biodiversity.

Council advised that as part of the EIS, the design must comply with the WSEA Fairfield DCP.

Transport for NSW

TfNSW advised that a staged approach to traffic modelling should be taken. They requested that specific traffic modelling scenarios be included in the Traffic Impact Assessment (**TIA**) and indicated that an Agreement in Principle would be required if the Proposal involves the creation of a traffic control signal.

Sydney Water

Sydney Water advised current planned infrastructure could not accommodate peak load demands for water services. Sydney Water is completing further modelling of the network to evaluate options to enable final capacity of the Proposal.

TransGrid

Lumea and TransGrid have issued NEXTDC with Australian Energy Market Operator (**AEMO**) requirements for 'Large Customers'. Lumea has offered a Network Asset as a potential option to meet capacity requirements.

5.3. COMMUNITY VIEWS

The Community and Stakeholder Engagement Outcomes Report outlines the responses received from the community and surrounding stakeholders. Several potential impacts were raised by the community. These included but are not limited to:

- Visual impacts of the Proposal
- Changing character and impacts on the environment
- Noise impacts
- Increased traffic flows

The above issues have been addressed through the EIS and the EIS (including supporting plans and reports) show that these issues can be mitigated through appropriate management and mitigation measures.

In addition to surrounding community members, more targeted engagement was carried out with direct neighbours and community groups. No responses were received by TAFE NSW (Wetherill Park) or St Narsai Assyrian Christian School.

5.4. ENGAGEMENT TO BE CARRIED OUT

NEXTDC welcomes feedback on the Proposal. NEXTDC will continue to keep stakeholders and the community informed of the Project approval process through the exhibition and determination phases by:

- Continuing to engage with the community about the Project, its potential impacts, and the approval process.
- Enabling the community to seek clarification about the Project through the two-way communication channels.

6. ASSESSMENT OF IMPACTS

This section describes the way in which the key issues identified in the SEARs have been assessed. It provides a comprehensive description of the specialist technical studies undertaken regarding the potential impacts of the proposed development and recommended mitigation, minimisation and management measures to avoid unacceptable impacts. Further detailed information is appended to the EIS, including:

- SEARs compliance table identifying where the SEARs have been addressed in the EIS (**Appendix A**).
- Statutory compliance table identifying where the relevant statutory requirements have been addressed (**Appendix B**).
- Proposed mitigation measures for the Project which are additional to the measures built into the physical layout and design of the Project (**Appendix C**).
- Community engagement table identifying where the issues raised by the community during engagement have been addressed (**Appendix D**).

The detailed technical reports and plans prepared by specialists and appended to the EIS are individually referenced within the following sections.

6.1. DETAILED ASSESSMENT IMPACTS

This section of the report provides a detailed assessment of the key issues which could have a significant impact on the site and locality. It provides a comprehensive assessment of the relevant issues and the mitigation measures required to avoid, mitigate and/or offset the impacts of the Project.

6.1.1. Built Form and Urban Design

An Architectural Design Report has been prepared by HDR and is provided at **Appendix F**. The Architectural Design Report provides details of the built form and urban design approach to the proposed S4 Data Centre facility.

6.1.1.1. Existing Environment

The site comprises vacant land which does not contain any existing built form structures and has been cleared of all vegetation. The site is within an emerging employment precinct and is surrounded by a variety of land uses including industrial to the north and west, rural-residential to the east and environmental conservation land to the south east. There are various industrial land uses that surround the site including manufacturing, warehouse and distribution centres and extractive industries.

Existing retaining walls are located along the site boundary and are up to 10 metres high in some locations. The existing retaining wall along the western site boundary is to be replaced or modified to accommodate proposed vehicle and pedestrian accessways. Other retaining walls will be retained where possible.

6.1.1.2. Design and Layout

The Project involves a campus style data storage facility which includes five separate buildings and a network of internal roads and pedestrian links. The key design principles have been carefully developed to manage the potential built form impacts.

The individual buildings are highly articulated with the internal road layout establishing individual blocks. The design and layout respond to both the functional and spatial requirements of the data centres. In addition to the data halls, the facility integrates various elements including a cafe, concierge, auditorium, kitchens, leisure and respite spaces, meeting and training rooms, high quality MCX spaces, roof terraces and end of trip facilities.

Ancillary offices in each building are oriented to the street to activate the frontage and streetscape. This allows for the signature red and black façade of the offices to contrast against the pre-cast concrete façade of the data hall and provide greater visual interest from the surrounding public domain.

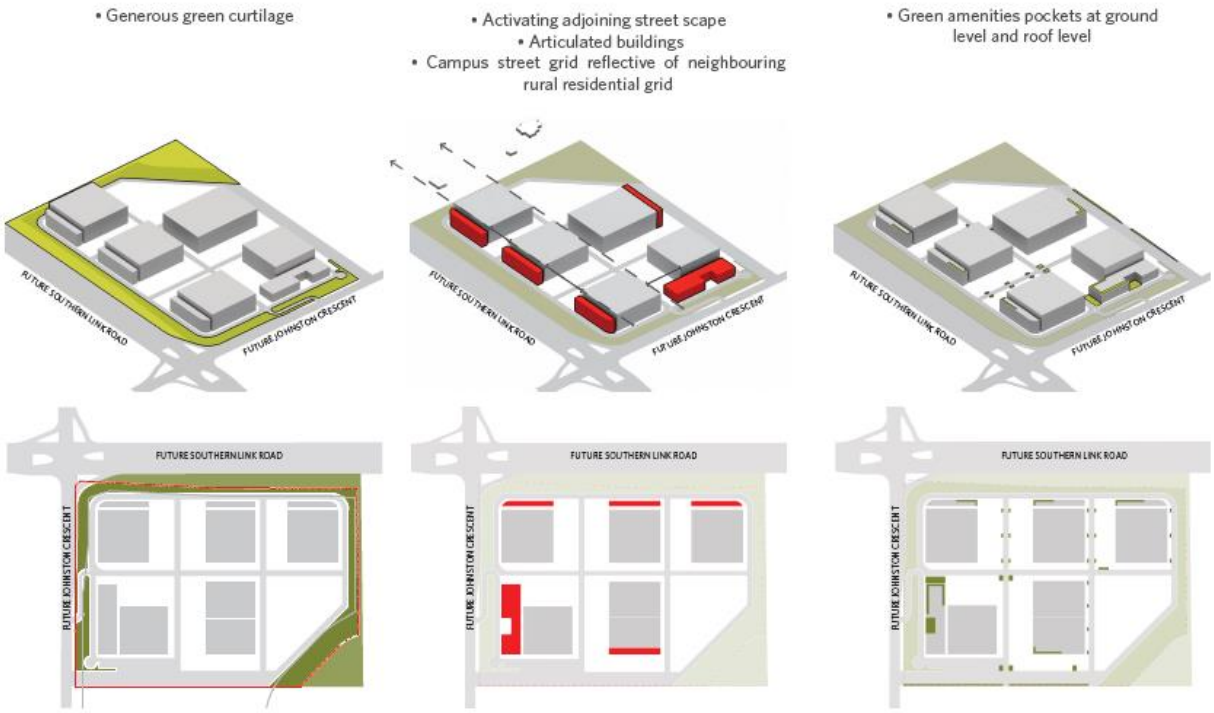
Building A is distinguished from the other buildings, providing an arrival experience to staff and visitors. The design integrates green spaces within and around its base, to encourage a seamless connection to the surrounding landscape and separates the front-of-house from the data hall building.

As shown in **Figure 26**, significant setbacks are provided to the external boundaries of the site and to the internal perimeter roads to allow for deep soil zones and landscaping opportunities. The design proposes a generous green curtilage, pockets of planting and green roof terraces to restore flora and biodiversity to the currently cleared site and this in turn will soften the visual appearance of the development from the surrounding public domain.

The Proposal integrates modular and sustainable elements which seek to reduce consumption and maximise efficiency. The office building facade is engineered to shield the interior from the western sun, reducing the need for cooling and minimising energy consumption. Additionally, solar panels on the roof, will provide renewable energy to offset power needs, embodying a commitment to environmental responsibility while ensuring a comfortable and eco-friendly workspace.

Overall, the proposed design and layout is compatible with the existing and future character of the locality which consists of majority industrial lands with extensive warehousing.

Figure 26 Key Design and Built Form Principles



Source: HDR Architects, 2024

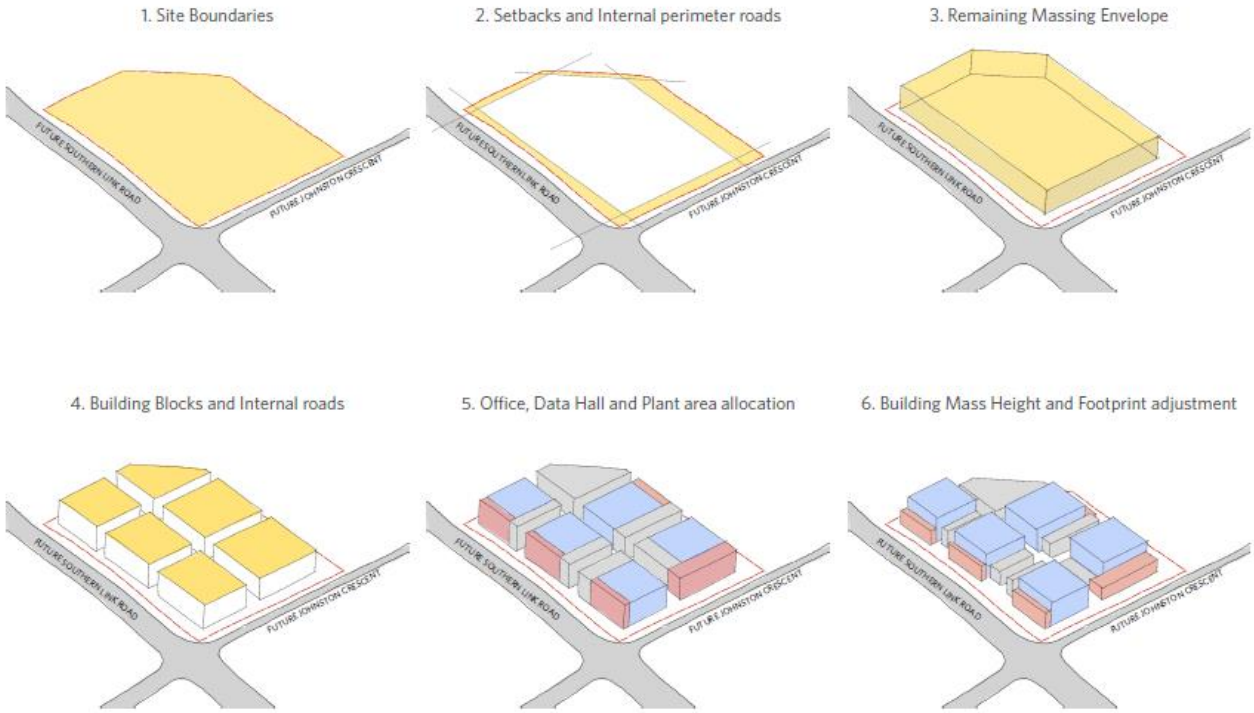
6.1.1.3. Bulk and Scale

The Proposal includes the construction of five separate buildings, with heights ranging from 32 metres for Building A to 39 metres for Buildings B to E. The built form provides variation and visual interest, with five data halls that are compatible with the scale of surrounding industrial development.

As shown in **Figure 27**, the massing of each of the buildings have been broken up to provide a more considered urban scale. The office components which front onto the streets are lower in height and this provides a change in scale from the taller data centres located behind. This variation in height provides visual interest and reduces the perceived bulk of the development. Horizontal sections are provided to the external facades to further break down the facade height. Light-coloured elements at the roof aim to reduce the building bulk and reduces heat load, contributing to a visually balanced composition that aligns with the Project's overarching principles of sustainability.

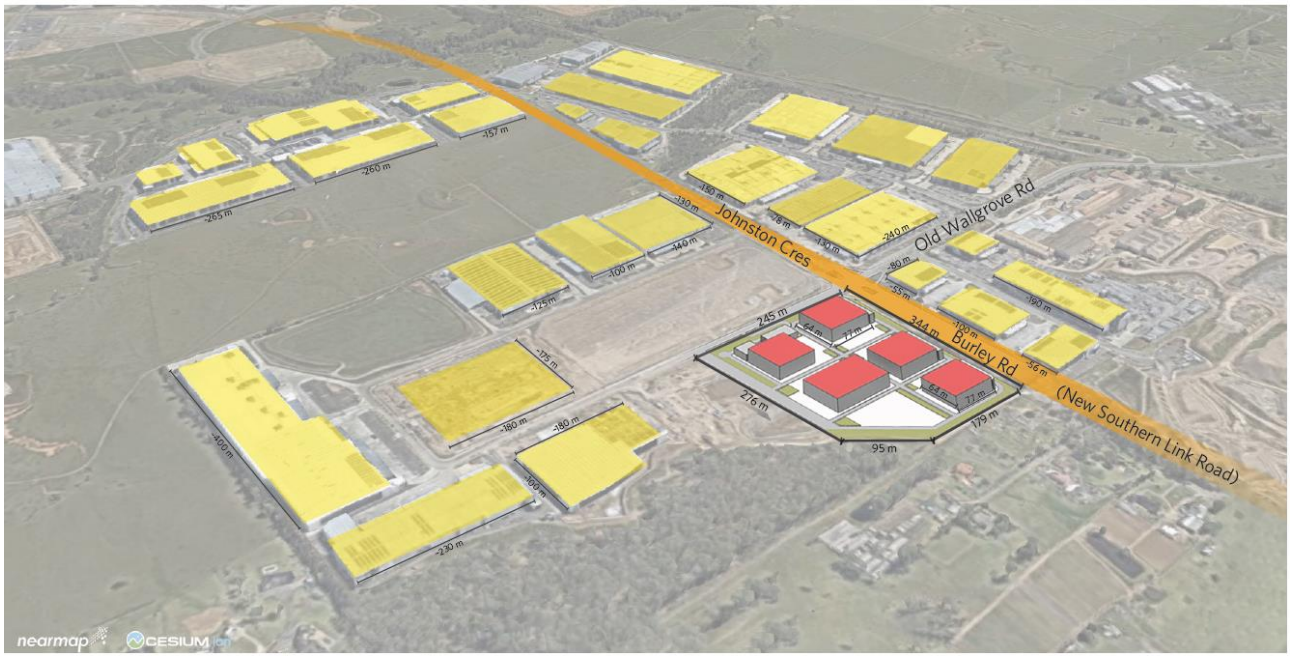
The site is located within a rapidly developing employment precinct. Building setbacks are as per the relevant planning framework to provide development which is compatible with the existing and approved developments in the locality. The setbacks also seek to maintain existing street trees, improve pedestrian connections around the site and minimise potential visual impact.

Figure 27 Evolution of Proposed Massing



Source: HDR Architects, 2024

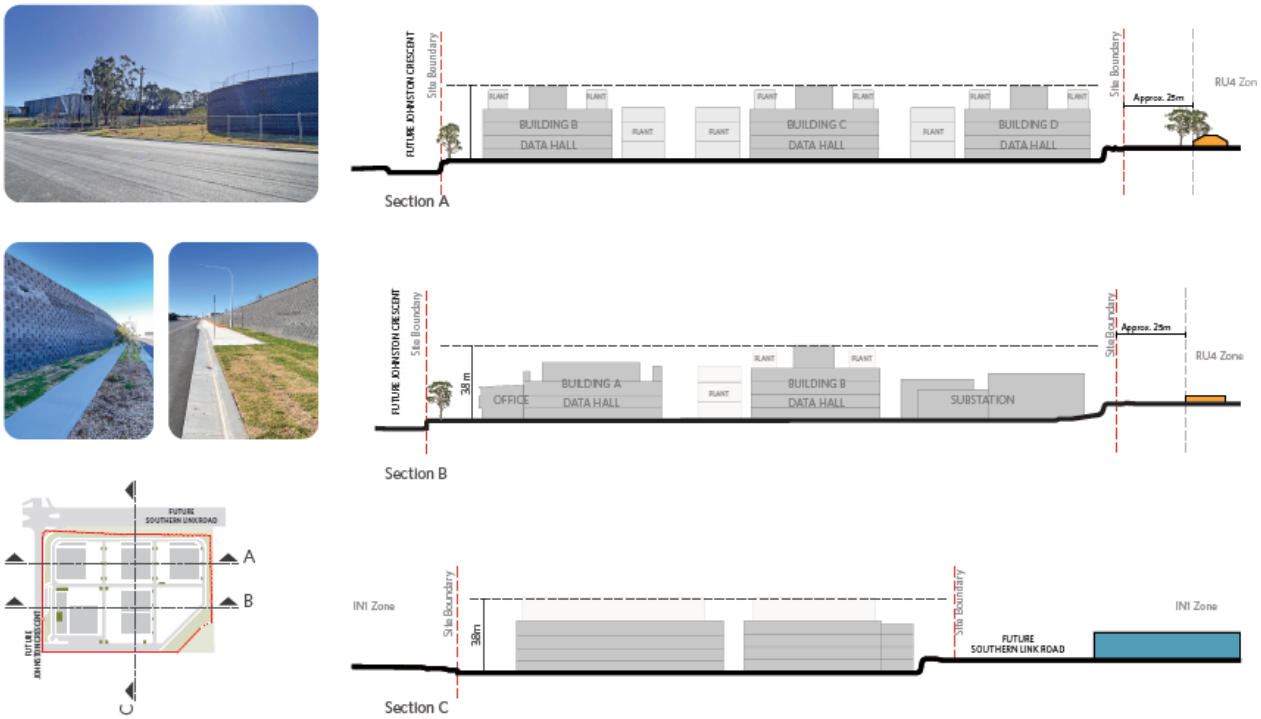
Figure 28 Surrounding Built Form



Source: HDR Architects, 2024

As shown in **Figure 29**, the closest residential dwelling within RU4 zoned land to east is approximately 25 metres from the site boundary. The Proposal provides an 18-metre setback to the property boundary in this location, which results in a total building separation of 43 metres. The setback to the RU4 land minimises potential amenity impacts, including overshadowing, visual privacy and noise. Further, as the site slopes downwards from east to west it means that when viewed from the RU4 zone, the perceived height of the development is reduced.

Figure 29 Height Relationship Diagram



Source: HDR Architects, 2024

6.1.1.4. Façade Design, Material and Finishes

The facade design strategy integrates red and black hues with pockets of greenery for the administration office components, contrasting against a precast concrete facade for the data hall blocks. The offices comprise a distinct patterning treatment and colour tone selection, creating a welcoming atmosphere for visitors. The façade design emphasises separation from the main data centre, ensuring a dedicated and inviting front-of-house experience.

The ancillary office components in each of the data halls face outwards to create a sense of cohesion and provide visual interest. The data hall facades will comprise concrete finishings, metal cladding, and metal louvres which creates a differentiation of uses across the site. As shown in **Figure 30,** the office building employs soft corners at both its main entrance and building corners, fostering a welcoming and organic atmosphere for its users. This design strategy enhances comfort and flow, prioritizing user comfort and enhancing the overall architectural harmony.

Figure 30 Façade Design

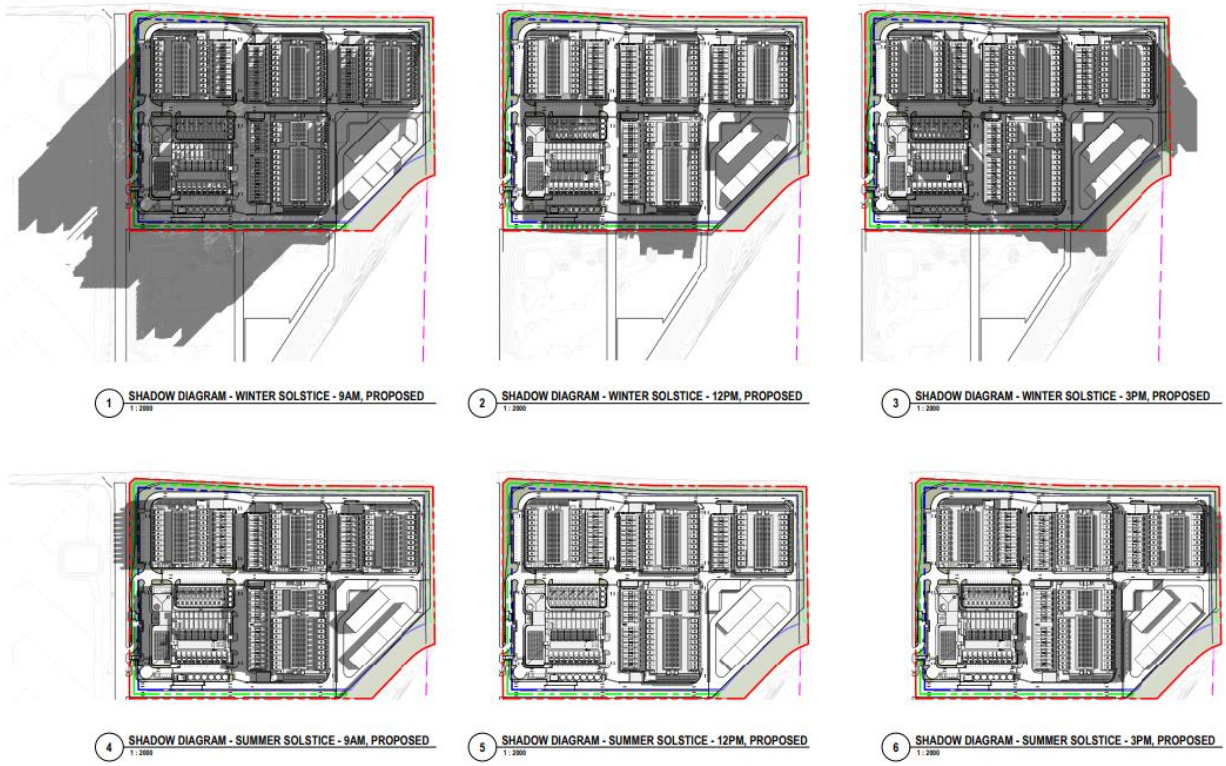
Source: HDR Architects, 2024

6.1.1.5. Overshadowing

The proposed data centre will be a maximum of 39 metres for the main data hall buildings and 32 metres for Building A. An overshadowing analysis has been undertaken by HDR, with an extract provided at **Figure 31.** Importantly the analysis shows that the Proposal will not result in any discernible shadow impacts to the adjoining RU4 zone land to the east apart from a brief period after 3pm during the winter solstice.

As demonstrated, overshadowing will occur to the south west during the winter solstice. However, by 12pm, the overshadowing to that area will end. The area to the south west of the site is industrial zoned land which is vacant land. The overshadowing is deemed acceptable as it does not have significant impacts between 10am and 2pm during the winter solstice.

Figure 31 Shadow Diagrams



Source: HDR Architects, 2024

6.1.2. Trees and Landscaping

A Landscape Design Report has been prepared by Site Image and is provided at **Appendix K**. It outlines the landscaping strategy, including the mix of native and endemic plant species, shrubs, trees and grasses to provide on-site amenity and deliver an attractive streetscape.

In addition, an Arboricultural Impact Assessment (**AIA**) has been prepared by CPS and is provided at **Appendix MM**. The AIA was prepared to assess the impacts to street trees adjoining the site, identifying tree species for removal in accordance with Australian Standard AS4373-2007 – *Pruning of Amenity Trees* and Council's DCP controls.

Existing Environment

The site is cleared of all vegetation including trees. The site was formerly used for quarrying and manufacturing. Works to date have resulted in a reasonably flat site with level changes to boundaries. Existing retaining walls are located along the site boundary and are up to 10 metres high in some locations.

Potential Impacts

The Proposal will require the removal of six trees (with a low retention value) within the on the Council street verge adjoining the subject site based on impacts to their Tree Protection Zones (**TPZ**). These trees will be replaced with supplementary street trees.

As shown in **Figure 32,** new tree plantings are proposed along the boundary setbacks to enhance the site and add visual appeal, improve streetscape amenity and provide a visual buffer to the development. The new tree plantings will provide a green buffer to the surrounding environment, providing shade and improving air quality.

The Proposal provides a total deep soil area of 9,900m^2 which equates to 12.1% of the site area and complies with DCP requirements. The thoughtful placement of trees and shrubs will act as visual screens to plant and equipment. Rooftop gardens will assist will reduce heat absorption.

Planting of native canopy trees and massed understory planting will soften the scale of the existing retaining walls at the boundary while adding texture and variety as an entry gateway. Landscaping proximate to

external facades of buildings will provide visual softening. Sightlines for vehicle movements will be maintained through low understory planting.

Overall, the Proposal will significantly increase tree canopy over the development site which will assist in negating urban heat island effect, improve amenity for users and assist in the Proposal's integration into the surrounding rural-residential context. The proposed landscaping will create a protective vegetation buffer between the development site and the biodiversity exclusion zone. This 25-metre buffer is required to be maintained as per the specified APZ.

Figure 32 Tree Canopy Coverage

Source: Site Image, 2024.

Mitigation Measures

The AIA recommends the following mitigation measures to protect the retained trees during the construction phase as summarised below:

- All tree removal work is to be carried out by an experienced Arborist with minimum AQF Level 3 qualifications in accordance with AS4373-2007 - Pruning of Amenity Trees, Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016) and other applicable legislation.
- It is recommended that replacement planting of new street trees is carried out as part of the development works to offset and compensate for the removal of Council Street trees and to provide for future urban forest in line with Fairfield City Council objective to enhance the City's urban canopy. Replacement planting should be directed by Council to ensure compliance with any street tree masterplans.

6.1.3. Visual Impact

A Visual Impact Assessment (**VIA**) has been prepared by Urbis and is provided at **Appendix L.** The VIA has been prepared to analyse the visual effects of the proposed built form on nearby sensitive visual receivers and public domain views from key locations surrounding the site. The VIA has been prepared in accordance with the SEARs and the Land and Environment Court Practice Direction.

Existing Environment

The site is zoned IN1 General Industrial, and the surrounding development is predominantly characterised by a wide range of industrial and warehouse land uses. To the east and south of the site is RU4 zoned land, which is characterised by large, rectangular lots of between approximately 1-6ha. These lots have been extensively cleared. Dwellings are typically single storey with large setbacks provided.

The VIA involved an analysis of a range of viewpoints from which the proposed development may have a potential visual impact. An extract of the viewpoint location map is provided at **Figure 33**. Existing and proposed viewpoints are provided from **Figure 34** to **Figure 40**, comprising views likely to have the most significant potential visual impacts.

In accordance with the viewpoint location map, the specific locations are noted as follows:

- **View 01:** View west from residential access road east of the site.
- **View 02:** View south-west from western end of Burley Road.
- **View 03:** View west from Burley Road.
- **View 04:** North-east view from Johnston Crescent.
- **View 05:** View south along Old Wallgrove Road.
- **View 06:** View north along Horsley Road.
- **View 07:** View west along Arundel Road.
- **View 08:** View west along Delaware Road.
- **View 09:** View west along Walworth Road.

Figure 33 Viewpoint Location Map

Source: Urbis, 2024

Figure 34 Viewpoint 1 – Existing Environment - View west from residential access road east of the site

Source: Urbis, 2024

Figure 35 Viewpoint 2 – Existing Environment - View west from residential access road east of the site

Source: Urbis, 2024

Figure 36 Viewpoint 4 – Existing Environment - North-east view from Johnston Crescent

Source: Urbis, 2024

Figure 37 Viewpoint 4 – Proposed Environment - North-east view from Johnston Crescent

Source: Urbis, 2024

Figure 38 Viewpoint 5 – Existing Environment - View south along Old Wallgrove Road

Source: Urbis, 2024

Figure 39 Viewpoint 5 – Proposed Environment - View south along Old Wallgrove Road

Source: Urbis, 2024

Figure 40 Viewpoint 9 – Existing Environment - View west along Walworth Road

Source: Urbis, 2024

Figure 41 Viewpoint 9 – Proposed Environment - View west along Walworth Road

Source: Urbis, 2024

Potential Impacts

The VIA methodology identifies objective 'visual baseline' information about the site and surrounds, analyses the extent of visual effects or quantum of change using visual aids from key locations, and considers the importance of that change.

The VIA method takes into consideration other relevant factors such as the underlying strategic planning intent of the site, its immediate or wider setting. The methodology adopted also distinguishes and places 'weight' on key factors such as view place and viewer sensitivity, and physical absorption capacity, and considers impacts on unique settings near the site that could be potentially affected, including for example heritage items, conservation areas, views to icons and areas of high scenic quality.

A visual effects analysis was undertaken to determine the extent of the visual change based on the seven representative modelled views (photomontages). In determining the base visual analysis, the following factors were considered:

- Visual character of the site
- Scenic quality
- View place sensitivity
- Viewer sensitivity

Urbis then applied relevant weighting factors to determine the overall level of visual impacts or importance of the visual effects. The factors have been considered in relation to the visual effects to provide up-weight or down-weights and to determine a final impact rating. The weighting factors include sensitivity, visual absorption capacity and compatibility with urban features. A summary of the overall visual impacts for each of the selected viewpoints is provided below.

Table 16 Summary of Overall Visual Impacts

Viewpoint	Visual effects of Proposal	Overall
View 01 View west from residential access road east of the site	The Proposal introduces new contemporary built form to the mid-ground composition. The height, bulk and scale of the Proposal is greater than other built form currently visible from this location, however views from within the property from elevated positions along the western boundary would likely include views of existing commercial and distribution warehouses on Johnston Crescent west of the site. Boundary and frontage planting is proposed and includes trees along the eastern boundary which as they mature over time will filter views of the Proposal. The Proposal does not block views to any heritage items or areas of unique scenic quality.	Medium
View 02 View south-west from western end of Burley Road	The Proposal introduces new contemporary built form to the mid-ground composition which is partially filtered by intervening vegetation outside of the site. The height, bulk and scale of the Proposal is greater than other built form currently visible from this location. Boundary and frontage planting is proposed and includes trees along the eastern boundary which as they mature over time will filter views of lower and mid sections of the Proposal. The Proposal blocks views of open sky beyond the site but does not block views to any heritage items or areas of unique scenic quality.	Medium
View 03 View west from Burley Road	The foreground and mid-ground composition are unaffected by the Proposal. Filtered views of the Proposal are possible through large trees within residential properties. Proposed frontage and boundary planting, when it matures, will likely increase the filtering effect of the existing	Low

Viewpoint	Visual effects of Proposal	Overall
	vegetation. The Proposal does not block views to any heritage items or areas of unique scenic quality.	
View 04 North-east view from Johnston Crescent	The foreground composition is unaffected by the Proposal. The Proposal introduces new contemporary built form to the mid-ground composition. The height, bulk and scale of the Proposal is greater than other built form currently visible from this location due to the clearing of the site. Johnston Crescent planting is proposed and includes trees and massed planting which as they mature over time will filter views of the Proposal. The Proposal blocks views to distant vegetation along Burley Road and existing commercial and distribution warehouses within the Oakdale East Industrial site. The Proposal does not block views to any heritage items or areas of unique scenic quality.	Low
View 05 View south along Old Wallgrove Road	The foreground composition is unaffected by the Proposal. The Proposal introduces new contemporary built form to the mid-ground composition. Boundary and frontage planting is proposed and includes trees and massed planting which as they mature over time will filter views of the Proposal. The Proposal blocks views to a small section of an existing warehouses south of the site and open sky beyond. The Proposal does not block views to any heritage items or areas of unique scenic quality.	Low
View 06 View north along Horsley Road	The foreground composition is unaffected by the proposal. Most of the proposal is impacted by intervening topography, built form and vegetation so only a minor portion of the upper section is visible. At this distance and in the context of other built form, the proposal is difficult to distinguish. Boundary and frontage planting, including trees and massed planting, will mature over time and further filter views of the proposal. The proposal does not block views to any heritage items or areas of unique scenic quality. The overall character of the view remains unchanged.	Low
View 07 View west along Arundel Road	The proposal is not visible in this view. The character and composition of the view remains unchanged. The proposal does not block views to any heritage items or areas of unique scenic quality.	Low
View 08 View west along Delaware Road	The foreground composition is unaffected by the proposal. The proposal introduces new contemporary built form to the central mid-ground composition, most of which is blocked by existing vegetation where only the middle and upper most sections of the proposal are visible. The proposal blocks views to a small section of existing warehouses south of the site and open sky beyond. Boundary and frontage planting is proposed which includes trees and massed planting which will mature over time and further filter views of the proposal. The proposal does not block views to any heritage items or areas of unique scenic quality.	Low
View 09 View west along Walworth Road	The foreground composition is unaffected by the proposal. The proposal introduces new contemporary built form to the central mid-ground composition, blocking views to rural residential development. Boundary and frontage planting includes trees and massed planting which will mature over time and further filter views of the proposal. The proposal	Low - Medium

Viewpoint	Visual effects of Proposal	Overall
	does not block views to any heritage items. The proposal will block a narrow section of the Blue Mountains, however, remains below the line of the horizon where the range can still be understood and appreciated. The long, horizontal forms of the roofline are visually consistent with linear vegetation patterns and distant ridgelines of the Blue Mountains.	

The VIA makes the following conclusions regarding the potential visual impacts:

- The Proposal is visually compatible with the anticipated and likely visual character of the site and surrounding context.
- Visual effects of the Proposal with regard to viewing periods from the public domain are low, typically from moving viewing situations and experienced for shorter periods.
- Views of the Proposal from significant public recreation spaces are not possible.
- The visual impact for the assessed viewpoints ranges from Low to Medium.
- The Proposal does not block views to any heritage items or areas of unique scenic quality.
- Views to the site and the Proposal from private domain dwellings in the wider visual catchment are limited due to intervening built form and vegetation.
- Clear views of the Proposal are possible from dwellings immediately east of the site along a residential access road off Burley Road.
- Visibility of the Proposal from dwellings further east decrease due to intervening vegetation and topography.
- Where views from dwellings east of the site are possible, they do not include the Proposal and scenic or highly valued features in the same composition.
- The Proposal is visually compatible with the overall visual character of the area given existing and under construction industrial estates to the north, south and west.
- The Proposal can be supported on visual impact grounds.

6.1.4. Noise and Vibration

A Noise and Vibration Impact Assessment (**NVIA**) has been prepared by Aurecon and is provided at **Appendix P.** The assessment considers the potential noise and vibration impacts that may result from the construction and operation of the proposed development.

Existing Environment

The surrounding development comprises a mix of industrial to the north, west and south and residential receivers to the east. While the site is within the IN1 zone, the site adjoins RU4 zoned land to the east and the two closest residential receivers are located 21 metres and 35 metres respectively from the boundary of the site.

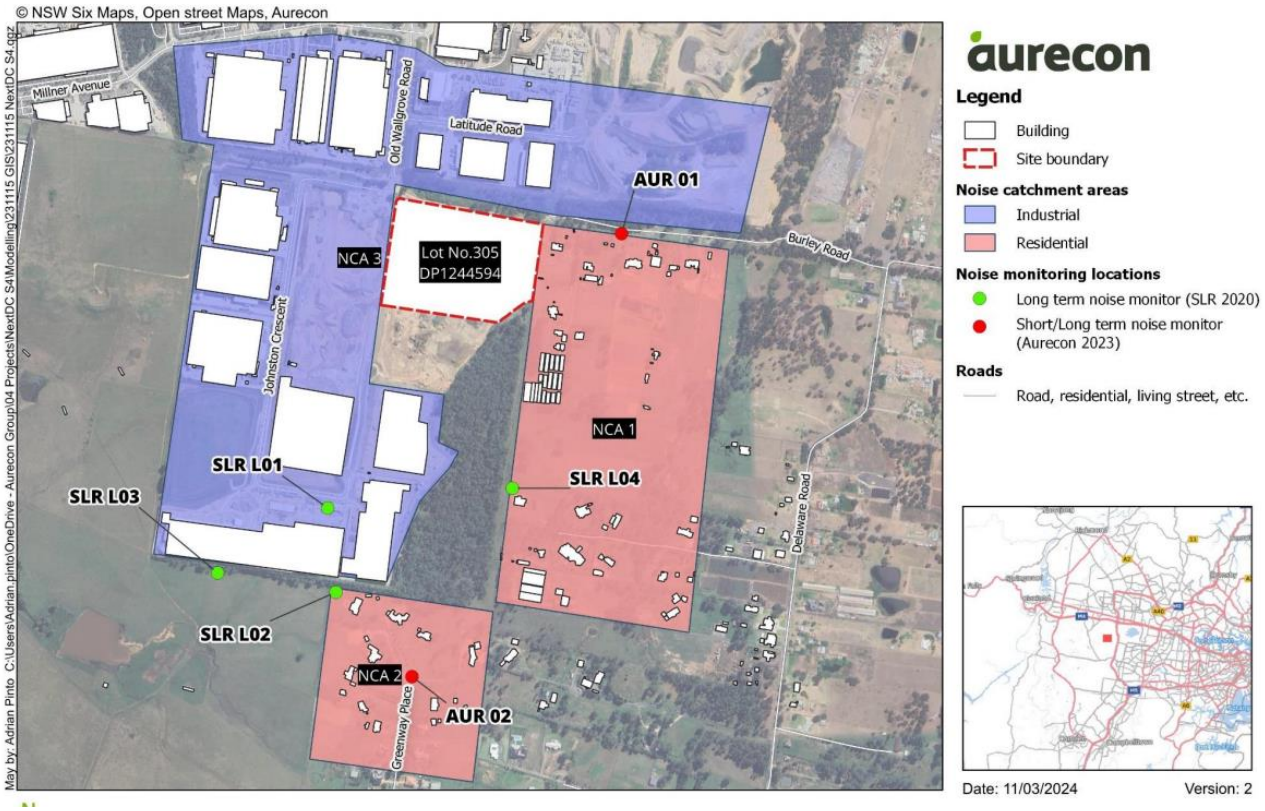
A map showing the location of sensitive receivers subject to noise monitoring is provided in **Figure 42**. Four long term and two short/long term monitors monitored ambient noise to establish operational noise criteria as shown in **Figure 43**. Both short term and long-term noise monitoring were conducted during the day period on Tuesday 5 December 2023 and Monday 18 December 2023 with long-term monitoring including day, evening and night measurements and short-term monitoring at different times.

The short-term measurements confirmed background noise levels are typically only affected by occasional traffic movements and noise levels do not vary significantly across the site. Each measured background noise level (LA90) varied within a range of 4dB excluding the measurement affected by lawnmower noise. The long-term measurements measured during the daytime periods align with the ranges measured during the short-term measurements.

Figure 42 Noise and Vibration Assessment Locations

Source: Aurecon, 2024

Figure 43 Short- and Long-Term Ambient Noise Measurement Locations



Source: Aurecon, 2024

6.1.4.1. Construction Noise and Vibration

Potential Impacts

Construction noise was modelled for the assumed construction phases and assessed for the standard working hours, outside standard hours (day) and outside standard hours (evening) assessment periods as appropriate with all construction equipment assumed to be operating continuously and simultaneously over a 15-minute period.

These predictions were worst-case as they assumed that all equipment will be in use simultaneously and continuously during the assessment period. In addition, these predictions were made with the construction activity at the closest location to the receiver. Noise levels are therefore likely to be reduced when activities occur further away, and less equipment is in use.

The findings of the NVIA concluded that:

- Predicted noise levels from construction activities were below the impact criteria for the industrial receivers, however, they exceeded the residential noise criteria during most phases of construction. At the nearest residential receivers to the east of the site i.e., R1, R2, R3, R4 & R5, an exceedance above the highly affected level is predicted.
- Predicted construction noise levels do not represent a constant noise emission that would be experienced by the community on a daily basis throughout the Project construction period. In reality, predicted noise levels will vary in intensity and would only be experienced for limited periods of time when works are occurring.
- The highest exceedances will be during the site preparation and foundation laying phases of the Project. This is due to the nosiest equipment being utilised during this time such as pile drivers, jackhammers and excavators.
- Vibration from impact piling is predicted to exceed criteria for activities very close to receivers. Safe working distances will be difficult to achieve and alternative, less vibration intensive, construction approaches may be required to reduce the impact of vibration on residential receivers.

Mitigation Measures:

To mitigate the potential construction noise and vibration impacts, the NVIA has recommended the following:

- A Construction Noise and Vibration Plan will be required to be implemented by the contractor to reduce noise levels at the residential receivers as much as is feasible and practical. In addition, regular communication between the contractor and the community will be required regarding activities and expected noise levels.
- A summary of safe working distances for construction activities to reduce the likelihood of disturbance and damage is provided in Table 5-11 of the NVIA. These should be used where practical.

In addition to the above, the following additional standard construction noise and vibration mitigation measures are recommended:

- All works – avoid simultaneous operation of noisy plant within discernible range of a sensitive receiver. Ensure noisy plant schedules are clear in Works Plan.
- Any time: high noise and vibration generating activities (includes, but not limited to, jack and rock hammering, sheet and pile driving, rock breaking and vibratory rolling) – Only carry out in continuous blocks, not exceeding 3 hours each, with a minimum respite period of one hour between each block ("continuous" includes any period during which there is less than a 60 minutes respite between ceasing and recommencing any of the work).
- All works – Schedule deliveries to nominated hours only.
- Fabrication work involved – Carry out noisy fabrication work at another site (for example, within enclosed factory premises) and then transport to site.
- Generators to be used on site – Use mains power supply rather than use generators. Switch off generators when not in use, particularly during out of hours work / peak customer use for station works. Locate generators away from residences and behind structure that could provide acoustic shielding. Use one larger generator to power multiple plant items (ensuring safe cabling). Use mobile noise curtains around generators. Mark location of Mains power and generators on Site Plan.
- Reversing alarms ("beepers") on site (including entry/exit from site) – Install less annoying non-tonal broadband 'quacker' reversing.
- Small or handheld plant – Use mobile noise curtains to shield from sensitive receivers.
- Metal chutes to be used – Reduce noise from metal chutes and bins by placing dampening material in the bin.
- Delivery vehicles – Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.
- All works, particularly plant ≥80 dBA at 10m – Investigate and implement alternative "quiet" plant and / or methods. Example: use smallest excavator that can carry out the local task.
- All works requiring road or rail vehicle material transportation – Minimise disturbance arising from delivery of goods to construction sites.
- All works requiring road vehicle material transportation – Reduce the number of vehicle trips to and from the site – organise amalgamated loads rather than using a number of vehicles with smaller loads. Show material transport plans in Works Schedule. Loading and unloading of materials is to occur as far as possible from sensitive receivers. Loading/unloading areas to be shielded if close to sensitive receivers. Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site, such as by including drive-through for parking and deliveries. Show traffic flow, loading/unloading areas on Site Plan. Select site access points and roads as far as possible away from sensitive receivers.
- All works requiring road truck access – Nominate an off-site truck parking area away from residences, for trucks arriving prior to gates opening.

6.1.4.2. Operational Noise and Vibration

Potential Impacts

Table 17 identifies the Project Noise Trigger Levels (**PNTL**) for the Project based on the noise monitoring undertaken and considering the Project amenity and intrusive noise levels.

Table 17 Project Noise Trigger Levels for the nearest sensitive receivers

Receiver ID	**Project intrusiveness noise level**			**Project amenity noise level**			**Project noise trigger levels**		
	$L_{Aeq\ 15\ minute}$ dB			$L_{Aeq\ 15\ minute}$ dB			$L_{Aeq\ 15\ minute}$ dB		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Residential receivers NCA 1	42	41	42	48	43	38	42	42	38
Residential receivers NCA 2	40	40	40	48	43	38	40	40	38
Industrial receivers NCA 3					68			68	

Source: Aurecon, 2024

Maintenance testing of the back-up power system (including operation of generators and load banks) during day-time hours (7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays as per the NSW Noise Policy for Industry (**NPfI**)). Back-up power testing will also occur during the day-time hours and as follows:

- Bi-monthly, no-load test – 10 mins
- Quarterly, 70% load – 30 mins
- Annual, 100% load – 60 mins

Up to two generators can be tested at any one time. As per the generator testing regime, there will be 153 hours of testing per year. Criteria have been set to address both normal operation and maintenance testing for back-up power systems.

To assess potential noise impacts during operation, ARUP adopted the following three scenarios:

- Normal Operation – this assumes the following will be in operation:
  - Mechanical equipment within the datacentre & on rooftop
  - Electrical equipment such as step-down transformers and substation transformers
  - Onsite traffic (light and heavy vehicles)
- Back-up power system testing – this assumes the following will be in operation:
  - Mechanical equipment within the datacentre & on rooftop
  - Electrical equipment such as step-down transformers and substation transformers
  - One backup generator being tested with a load bank to simulate typical datacentre loads (day period only)
  - Onsite traffic (light and heavy vehicles)

- Emergency critical power failure – this assumes the following will be in operation:
  - Mechanical equipment within the datacentre & on rooftop
  - Electrical equipment such as step-down transformers and substation transformers
  - All back-up generators operational
  - Onsite traffic (light and heavy vehicles)

Operational noise emissions from the site were assessed in accordance with the NPfI, which is primarily concerned with controlling intrusive noise impacts in the short-term for residences and maintaining long-term noise level amenity for residences and other land uses.

The NVIA found that for industrial receivers the noise criterion is less onerous and predicted noise levels comply in all cases. As demonstrated in **Table 18**, noise is predicted to be equal or below the criteria if the recommended mitigation and management strategies provided in the NVIA are implemented for the site.

Based on the above, the standard operation and generator testing scenarios do not exceed the night-time criteria and will not result in significant noise impact on the community. All predicted levels achieve or are below the Project trigger levels for all stages of operation.

Table 18 Predicted noise levels at receivers - with mitigation - Stage 3

Receiver	Criteria LAeq 15min dB			Back-up power testing LAeq15min dB		Standard operations LAeq15min dB			
	Day	Evening	Night	Day (3m/s winds) D Class Temperature inversions	Compliant?	Evening (3m/s winds) D Class Temperature inversions	Compliant?	Night (3m/s winds) F Class Temperature inversions	Compliant?
I1	68	68	68	48	Yes	45	Yes	44	Yes
I2	68	68	68	40	Yes	38	Yes	38	Yes
I3	68	68	68	49	Yes	47	Yes	46	Yes
R1	42	42	38	38	Yes	37	Yes	37	Yes
R2	42	42	38	35	Yes	33	Yes	33	Yes
R3	42	42	38	38	Yes	38	Yes	38	Yes
R4	42	42	38	41	Yes	38	Yes	36	Yes
R5	42	42	38	41	Yes	37	Yes	36	Yes
R6	42	42	38	34	Yes	33	Yes	33	Yes
R7	40	40	38	33	Yes	32	Yes	32	Yes
R8	40	40	38	33	Yes	33	Yes	33	Yes

Source: Aurecon, 2024

Mitigation Measures

To mitigate potential noise and vibration impacts during operations, the NVIA has recommended the following:

- Substation transformers – Fire walls are required surrounding the transformers for safety reasons. These will provide some acoustic screening to the residential receivers. Fire/noise walls at least 10 metres in height should be installed around the substation transformers.
- Building C, D, E – Cooling Towers – Install a 9m noise wall above the chiller plant located on the Eastern side of Buildings C, D & E to block the line of sight between the cooling towers and the eastern residential receivers. The barrier must be continuous along a row of cooling towers and include a sound absorbing finish on the side facing the cooling tower intakes.
- Install discharge attenuators on all fans from cooling towers: on Building A, on east side of Building C, 2 southern most cooling towers on west side of Building C, on east side of Building D, 3 southern most cooling towers on west side of Building C, on east side of Building E.
- Chiller plant louvres – All buildings – 1.2m long rectangular attenuators are required to attenuate noise breakout from ventilation openings at the chiller rooms.
- CRAH intake louvres – Building A – 1.2m long rectangular attenuators are required to attenuate noise breakout from the CRAH intake louvres.
- FWU intake louvres – Buildings B, C, D, and E (eastern and western façade) – 1.2m long rectangular attenuators are required to attenuate noise breakout from the FWU intake louvres.
- Generators – All buildings – Enclosed in custom acoustic enclosures such that noise levels do not exceed: SPL for intake at 1m – 62 dBA. SPL for hot air discharge at 1m – 65 dBA. SPL for exhaust gas discharge at 1m – 67 dBA.
- Exhaust chimney – A 5m parapet on eastern side of Building 5. Internal 50mm thick acoustic lining will be required at the walls and roof of the exhaust chimney to control noise emissions.
- Car park - Ensure there are no car parking locations adjacent to the Eastern Façade of the Buildings D & E.
- Heavy vehicle movements - Ensure there are no heavy vehicle movements occurring between 10 pm and 7 am (i.e., during the night-time period)

6.1.5. Access, Traffic and Parking

A Traffic Impact Assessment (**TIA**) has been prepared by TTW and is included at **Appendix M.** The purpose of the report was to identify and analyse the potential traffic related impacts associated with the Proposal.

Existing Environment

Vehicular access to the site is currently provided from Johnston Cresent with a temporary internal access road. The site is well serviced by an existing regional road network. Johnston Crescent connects to Old Wallgrove Road which links to the M4 Western Motorway and M7 Westlink. Future planned roads will further connect the site, including the future Southern Link Road which will upgrade Burley Road to a dual carriageway connecting to Mamre Road in the west and Wallgrove Road to the east.

Given the site is located within an emerging industrial estate, public transport is limited. Bus routes along Old Wallgrove Road further north connect the site to Mount Druitt and Penrith. There is limited pedestrian infrastructure with no pedestrian footpaths or safe road crossing points within 350 metres of the site. Old Wallgrove Road to the north includes a shared path and footpaths are provided along both sides of Millner Avenue to the west.

Potential Impacts

The Proposal provides 200 at-grade car parking spaces. This includes six accessible spaces and 10 EV spaces. These spaces will be distributed across the site adjacent to building entries to enable easy access to each of the offices and data halls within the site. Five motorbike and 24 bicycle spaces are proposed.

A summary of the parking requirements against the DCP rates is provided in **Table 19**.

Table 19 Parking Rate Assessment

DCP	Land Use	Parking Rate	Required Parking
Fairfield Citywide DCP	Commercial Space (based on 5,072m^2 of gross lettable area)	1 space per 40m^2 gross leasable area	126.8
	General Industry (52,916m^2 of gross lettable area)	1 space per 70m^2 gross leasable area	755.94
	Total		883
WSEA Fairfield DCP	IN1 (General Industrial) (57,988m^2 of gross lettable area)	1 space per 70m^2 gross leasable area including ancillary plus 1 space per unit for factory units.	828.4

Based on the DCP rates for 'general industry', the proposed development requires between 829 to 883 parking spaces. However, a maximum of 196 people is expected to be on-site at any given time (refer to Appendix 5 of the TIA for the Staffing Occupancy Schedule prepared by NEXTDC). As such, application of the DCP rates would result in a significant oversupply of parking compared to demand and predicted occupancy. It is therefore considered that strict application of the DCP parking rates do not necessarily provide a reasonable indication of the parking needs of the development.

Demand for parking is more appropriately assessed based upon a first-principles approach. If one parking space is provided for each person expected to be on-site at any given time (including permanent staff and maintenance contractors) were applied, a parking requirement of 196 spaces would apply. The proposed development includes 200 spaces, which is considered satisfactory to accommodate staff/contractors and visitors, also noting the management procedures for visitors to the site.

Visitors will need to obtain approval to attend site at a scheduled date and time using an on-line booking system. This system will effectively manage parking demand for visitors and ensure parking is available. Visitors will only be on-site for a short pre-determined time period, resulting in a high turnover of spaces.

The Proposal seeks to provide six DDA spaces, which is considered appropriate complies with DCP requirements. 24 bicycle parking spaces are provided to comply with the NSW Guidelines for Walking and Cycling Guidelines. No motorcycle parking rates are currently provided within the DCP; however, five spaces will be provided which is considered appropriate.

Separate heavy vehicle and passenger vehicle access is provided from Johnston Crescent. Gates and intercoms are provided which are setback from the road to avoid queuing. The internal roadway provides access to the passenger drop off / pick up adjacent to Building A, on-site parking areas and the rest of the internal private road network. Boom gates at internal intersections appropriately restrict access as required. Each loading dock can accommodate up to two 20-metre-long AVs. Swept path plans have been prepared for both heavy vehicles and passenger vehicles to demonstrate the way vehicles can enter and exit in a forward direction.

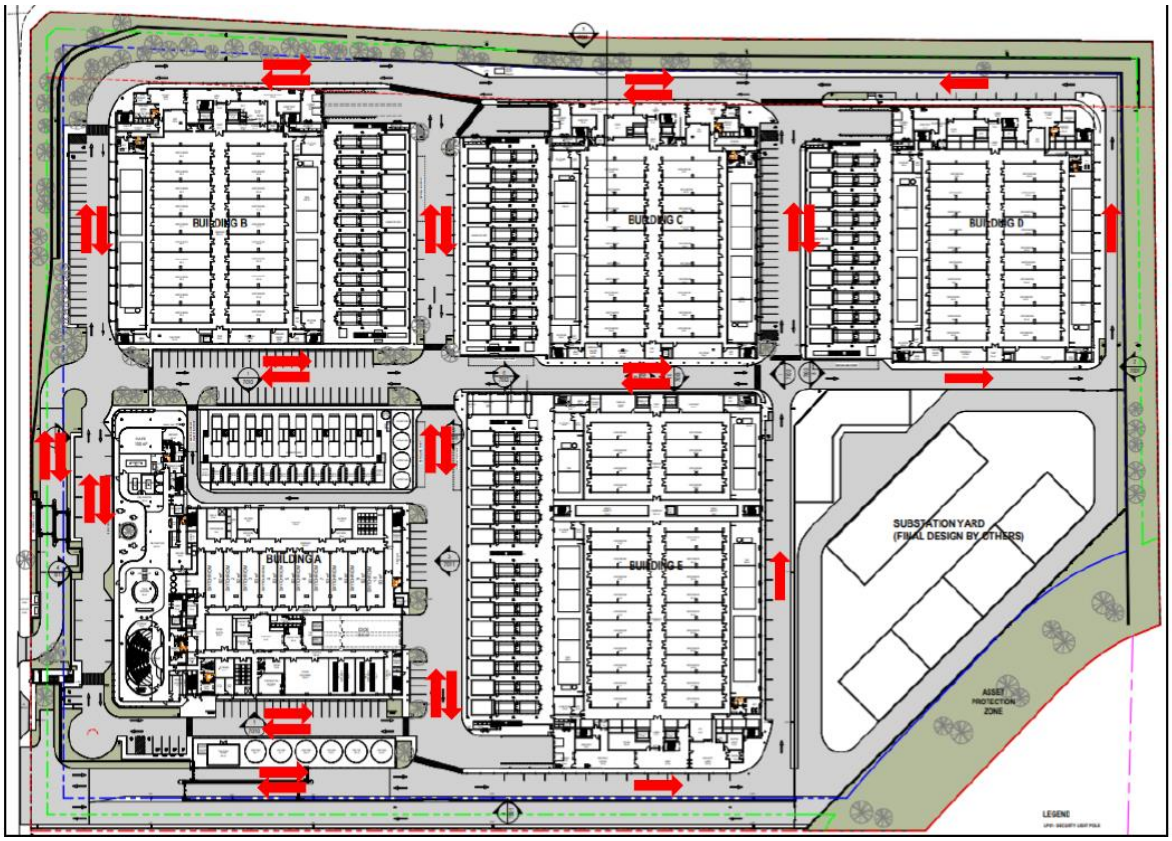
The Proposal is Projected to generate up to 260 peak hour vehicle trips in the morning and afternoon peak hours. The TIA concludes the surrounding intersections are expected to continue to operate under satisfactory conditions. SIDRA intersection modelling indicates a favourable level of service both before and after the development, except for the planned future intersections with the Southern Link Road which are still being developed.

Construction vehicle access driveway will be via Johnston Crescent in the south-western corner of the site. This driveway is to accommodate construction vehicle access to the site during the construction of each

stage, as well as access for substation transformer delivery and substation maintenance as required. Truck types may include vehicles up to and including 20m long Articulated Vehicles.

Approximately 75 construction vehicles per day may be generated during the peak construction phase. Approximately 250–300 workers will need to access the site, generating approximately 90 vehicle trips during the morning peak. Workers will be encouraged to carpool or use more sustainable methods of transport to decrease reliance on single occupancy private trips. The encouraging of carpooling is consistent with the recommendations of the Green Travel Plan as outlined in the Mitigation Measures.

Figure 44 Internal Vehicle Circulation



Source: TTW, 2024

Mitigation Measures

A Green Travel Plan (**GTP**) has been prepared by TTW and is provided at **Appendix CC.** The GTP seeks to reduce the environmental impact on travel to and from the development site and encourage active and public transport, while reducing dependence of private vehicles.

The inclusion of a GTP enhances the environmental credentials of the Proposal by encouraging active and sustainable travel behaviours. Operationally, the measures outlined in the GTP would:

- Reduce congestion and pollution in the local area;
- Reduce greenhouse gas emissions;
- Reduce costs associated with car parking; fleet maintenance and travel;
- Reduce journey times;
- Increase physical activity, leading to greater productivity and improved health and wellbeing;
- Increase accessibility to the site; and
- Improve corporate image.

A Preliminary Construction Traffic Management Plan (**PCTMP**) has also been prepared by TTW to mitigate potential traffic impacts during construction. The PCTMP has recommended the following:

Construction Traffic Management Plan (**CTMP**)

- Once a contractor has been engaged a finalised CTMP shall be prepared. This will include, but is not limited, to the following:
  - Details on the construction staging and the length of each stage.
  - Expected vehicle volumes during each stage of works.
  - Expected number of workers during each construction stage.
  - Site establishment plan showing vehicle entry and exit points and any areas for manoeuvring.
  - Traffic control plans.

Emergency Services

- In the event of an incident related to construction traffic on the public road network it will be the responsibility of the Site Manager to ensure that emergency services are notified. Contact “000” in cases of emergency to advise the relevant emergency service.
- Furthermore, it is the responsibility of the Site Manager to advise the emergency services of any restriction of vehicular access to the public and private areas a minimum of one week prior to its implementation.

Responsibility

The Site Manager is responsible for, but not limited to:

- Implementing the CTMP and Traffic Controls Plans.
- Informing contractors of the requirements of the CTMP.
- Undertaking site inspections to ensure all signage is clearly visible and not damaged.
- Monitoring the Construction Traffic Management Plan.
- Reporting on incidents.
- Obtaining permits.

6.1.6. Air Quality

An Air Quality Impact Assessment (**AQIA**) prepared by Aurecon and Northstar Air Quality Pty Ltd is included at **Appendix O**. The assessment provides an analysis of the air quality impact of the proposed development on surrounding sensitive receivers during the construction and operation of the proposed development.

Existing Environment

The area around the site is primarily zoned for industrial purposes. The land to the east of the site is zoned RU4 with residential receivers. The AQIA identified nearby sensitive receivers, with the closest being residential receivers to the east of the site. A total of 22 residential and 21 industrial receivers were identified.

Data from the nearest two Air Quality Monitoring Stations (**AQMS**) at St Marys and Prospect were used to determine the base line air quality and weather conditions. The maximum monitored pollutant concentrations show that the background concentrations were all below the *NSW Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2022)* (**Approved Methods**) impact assessment criteria.

The short-term measurements confirmed background noise levels are typically only affected by occasional traffic movements and noise levels do not vary significantly across the site. Each measured background noise level (LA90) varied within a range of 4dB excluding the measurement affected by lawnmower noise. The long-term measurements measured during the daytime periods align with the ranges measured during the short-term measurements.

Both ‘discrete’ and ‘uniform’ receptor locations were identified to assess the predicted impacts for air quality. A map showing the location of these sensitive receivers are provided in **Figure 45.**

Figure 45 Sensitive receptors surrounding the Proposal site

Source: Northstar, 2024

6.1.6.1. Construction Air Quality

Potential Impacts

Construction activities have the potential to generate short-term emissions of particulates, typically associated with uncontrolled or fugitive dust emissions. This is generally experienced by nearby receivers as

amenity impacts rather than health-related impacts, however health impacts can be experienced if construction dust remains unmanaged for an extended period of time.

The AQIA prepared a risk assessment for the construction stage air quality impacts. The methodology adapted by Northstar from *IAQM (2024) Guidance on the assessment of dust from demolition and construction* was used to assess construction phase risk. As the site is already cleared, no demolition activities were considered as part of the risk assessment.

The AQIA noted that there are medium risks of dust soiling and low risks of human health impacts associated with all proposed construction phase activities if no mitigation measures were to be applied to control emissions associated with construction phase activities. If the mitigation measures provided in the AQIA are implemented, the fugitive dust emission from the Proposal would be 'negligible'.

Mitigation Measures

To further mitigate the potential air quality impacts during the construction phase, the AQIA has recommended the following:

- Communications: Develop and implement a stakeholder communications plan that includes community engagement.
- Dust Management Plan (DMP): Develop and implement a DMP, interacting with the stakeholder communications plan, and includes procedures with respect to complaints, incidents, inspections, site management, dust suppression, surface/stockpile stabilisation, storage management, water supply, track out measures, and so forth.
- Vehicle/machinery:
  - All on-road vehicles shall comply with the relevant vehicle emission standards.
  - When stationary, vehicles are to switch off engines.
  - Use of diesel or petrol-powered generators to minimised, in preference to mains electricity or battery powered equipment where practicable.
- Waste: Avoid burning of waste materials on site.
- Otherwise as detailed in Enclosure A Appendix D Table D14 of the AQIA.

6.1.6.2. Operational Air Quality

Potential Impacts

The primary source of emissions to air during the operational phase are the standby generators that provide back-up power in the extremely unlikely failure of the primary and secondary power supply. The Proposal (as a data centre facility) is a mission critical facility that if not able to operate 100% of the time could lead to catastrophic impacts for the society, organisations, and businesses that it serves.

The operation of the Proposal is not considered likely to result in additional exceedances of the relevant air quality criteria at any identified receptor location. Scenarios replicating the worst-case and realistic case operations have been considered in detail. The predicted incremental concentrations for all assessed pollutants are shown to be significantly below the relevant criteria under realistic operations where the back-up generators are appropriately operated under the testing schedule.

Short-term emissions of fugitive dust and particulate matter were qualitatively considered for the construction phase dust risk assessment. The pollutants quantitatively assessed for the operational phase, along with their respective short- and long-term impact assessment criteria, are summarised in **Table 20**.

Table 20 Pollutants assessed and relevant criteria

Pollutant	**Relevant Criteria**
Particulate Matter (as PM_{10})	24-hour mean: 50 µg/m3 Annual mean: 25 µg/m3

Pollutant	Relevant Criteria
Particulate Matter (as $PM_{2.5}$)	24-hour mean: 25 µg/m3 Annual mean: 8 µg/m3
Nitrogen Dioxide (NO^2)	1-hour mean: 164 µg/m3 Annual mean: 31 µg/m3
Carbon Monoxide (CO)	15-minute mean: 100 mg/m3 1-hour mean: 30 mg/m3 8-hour mean: 10 mg/m3
Sulfur Dioxide (SO_2)	1-hour mean: 286 µg/m3 24-hour mean: 57 µg/m3
Polycyclic Aromatic Hydrocarbons (PAHs) (as benzo[a]pyrene)	1-hour mean: 0.0004 mg/m3 (0.4 µg/m3)
Volatile Organic Compounds (VOCs), assessed as:	
Benzene (C6H6)	1-hour mean: 0.029 mg/m3 (29 µg/m3)
Toluene (C7H8)	1-hour mean: 0.36 mg/m3 (360 µg/m3)
Xylene (C8H10)	1-hour mean: 0.19 mg/m3 (190 µg/m3)
Formaldehyde (CH2O)	1-hour mean: 0.02 mg/m3 (20 µg/m3)

Scenario 1 – Justified Worst-Case

The worst-case scenario was assessed based on emergency operations with 98 generators (88 x 3MW generators and 10 x 2MW generators) operating at 100% load. This scenario (Stage 3, Scenario 1) reflects a catastrophic failure in the electricity supply system.

A dispersion modelling assessment was performed using the NSW EPA approved CALPUFF dispersion model. This ascertained the air quality impacts at nearby receivers under a highly unlikely worst-case scenario where all generators would be operational (in the rare instance of a full loss of mains power), as well as during routine maintenance/testing (realistic operations). Emissions to the air from the standby generators associated with this Proposal were estimated using manufacturers specification datasheets for indicative pieces of equipment.

Under the justified worst-case emergency back-up generator operational scenario, additional exceedances for pollutants are predicted. With reference to published power supply reliability statistics, the probability of both the interruption to the power supply, the dual redundant power supply, and an exceedance of the relevant air quality criteria occurring were calculated through the multiplication of the probability of each event occurring, with values indicating the chance of an additional exceedance of the air quality criteria during a power outage is low.

The following table presents the maximum 24-hour average PM_{10} and $PM_{2.5}$ concentrations predicted to occur at the nearest receptors, as a result of the assumptions under Stage 3 for Scenario 1, excluding background concentrations.

Table 21 Predicted maximum incremental 24-hour PM10 and PM2.5 concentrations – Stage 3, Scenario 1

Receptor	**Maximum 24-hour average concentration µg/m^{-3}**	
	PM_{10}	**$PM_{2.5}$**
Criterion	50	25
Max. % of criterion	57.5	114.9
R1	17.0	17.0
R2	14.5	14.5
R3	14.8	14.8
R4	12.3	12.3
R5	12.3	12.3
R6	11.7	11.7
R7	11.6	11.6
R8	3.6	3.6
R9	3.4	3.4
R10	5.7	5.7
R11	7.5	7.5
R12	7.5	7.5
R13	12.3	12.3
R14	10.4	10.4
R15	9.8	9.8
R16	4.3	4.3
R17	3.8	3.8
R18	3.3	3.3
R19	4.0	4.0
R20	3.2	3.2
R21	3.1	3.1
R22	5.1	5.1
I1	8.9	8.9
I2	8.4	8.4

Receptor	Maximum 24-hour average concentration µg/m^{-3}	
	PM_{10}	**$PM_{2.5}$**
I3	7.1	7.1
I4	7.4	7.4
I5	20.3	20.3
I6	7.4	7.4
I7	12.1	12.1
I8	15.0	15.0
I9	18.1	18.1
I10	9.2	9.2
I11	6.7	6.7
I12	28.7	28.7
I13	17.5	17.5
I14	15.2	15.2
I15	15.9	15.9
I16	13.1	13.1
I17	7.9	7.9
I18	8.6	8.6
I19	8.3	8.3
I20	9.2	9.2
I21	7.0	7.0

Source: Northstar, 2024

The predicted maximum 24-hour average PM_{10} and $PM_{2.5}$ concentrations resulting from Stage 3, Scenario 1, with background included are presented in **Table 22** and **Table 23**. Results are for those receptors at which the greatest impacts have been predicted (refer to **Table 21**). The left columns show the predicted maximum cumulative impacts (typically the days with the highest regional background). The right columns show the total predicted concentration on days with the highest predicted incremental concentrations.

Table 22 Summary of contemporaneous 24-hour PM10 concentrations – Stage 3, Scenario 1

Date	**24-hour average PM_{10} concentration (µg/m^{-3}) Receptor R10**			**Date**	**24-hour average PM_{10} concentration (µg/m^{-3}) Receptor I12**		
	Incr.	Bg.	Cumul.		Incr.	Bg.	Cumul.
23/01/20	3.8	245.8	249.6	26/10/20	28.7	12.8	41.5

Date	24-hour average PM_{10} concentration ($\mu g/m^{-3}$) Receptor R10			Date	24-hour average PM_{10} concentration ($\mu g/m^{-3}$) Receptor I12		
24/01/20	< 0.1	105.6	105.7	05/01/20	26.7	81.1	107.8
08/01/20	< 0.1	97.8	97.9	25/12/20	25.0	17.1	42.1
05/01/20	< 0.1	81.1	81.2	11/01/20	24.3	58.0	82.3
12/01/20	< 0.1	69.7	69.8	26/03/20	23.8	17.7	41.5
04/01/20	1.0	68.4	69.4	16/03/20	22.9	9.3	32.2
25/01/20	< 0.1	61.5	61.6	11/12/20	22.8	18.3	41.1
11/01/20	< 0.1	58.0	58.1	10/08/20	21.6	14.6	36.2
01/01/20	< 0.1	57.4	57.5	25/10/20	17.8	7.3	25.1
02/01/20	< 0.1	54.0	54.1	04/02/20	17.7	37.6	55.3
29/08/20	1.2	47.6	48.8	10/12/20	17.0	30.8	47.8
These data represent the highest cumulative impact 24-hour average PM_{10} predictions as a result of the operation of the proposal.				These data represent the highest incremental impact 24-hour average PM_{10} predictions as a result of the operation of the proposal.			

Source: Northstar, 2024

Table 23 Summary of contemporaneous 24-hour PM2.5 concentrations – Stage 3, Scenario 1

Date	24-hour average $PM_{2.5}$ concentration ($\mu g/m^{-3}$) Receptor R10			Date	24-hour average $PM_{2.5}$ concentration ($\mu g/m^{-3}$) Receptor I12		
	Incr.	Bg.	Cumul.		Incr.	Bg.	Cumul.
08/01/20	10.5	70.8	81.3	26/10/20	28.7	4.6	33.3
05/01/20	26.7	41.7	68.4	05/01/20	26.7	41.7	68.4
12/01/20	10.9	47.2	58.1	25/12/20	25.0	3.7	28.7
11/01/20	24.3	33.4	57.7	11/01/20	24.3	33.4	57.7
24/01/20	9.7	37.5	47.2	26/03/20	23.8	5.5	29.3
17/01/20	9.1	31.3	40.4	16/03/20	22.9	3.2	26.1
04/02/20	17.7	19.7	37.4	11/12/20	22.8	5.2	28.0
29/08/20	< 0.1	37.1	37.2	10/08/20	21.6	4.1	25.7
01/01/20	11.1	25.8	36.9	25/10/20	17.8	2.1	19.9
02/01/20	5.8	30.4	36.2	04/02/20	17.7	19.7	37.4
07/06/20	4.6	29.3	33.9	10/12/20	17.0	7.9	24.9

Date	24-hour average $PM_{2.5}$ concentration ($\mu g/m^{-3}$) Receptor R10	Date	24-hour average $PM_{2.5}$ concentration ($\mu g/m^{-3}$) Receptor I12
These data represent the highest cumulative impact 24-hour average $PM_{2.5}$ predictions as a result of the operation of the proposal.		These data represent the highest incremental impact 24-hour average $PM_{2.5}$ predictions as a result of the operation of the proposal.	

For PM_{10} the maximum cumulative impact (left columns of **Table 22**) is predicted at receptor R10, and the maximum incremental impact (right columns of **Table 22**) is predicted at receptor I12. **Table 22** indicates that the highest cumulative impacts are driven by elevated background concentrations. It can be seen in **Table 22** that the highest cumulative impacts correspond with background concentrations during early 2020 which are associated with exceptional events including bushfires and intense drought conditions. It is noted that the highest incremental impacts are also predicted to result in exceedances of the relevant criterion, with the addition of background concentrations at I12.

For $PM_{2.5}$, the maximum cumulative impact (left columns of **Table 23**) and the maximum incremental impact (right columns of **Table 23**) is predicted at receptor I12. **Table 23** indicates that exceedances associated with the highest cumulative impacts are driven by elevated background air quality concentrations while exceedances associated with the highest incremental impacts are driven by significant incremental contributions from the Proposal under an emergency scenario.

Scenario 2 - Realistic Operations (Annual Testing)

The on-duty standby generators would undergo routine maintenance and testing to make sure they are operational if required during a power outage. Routine maintenance follows a prescribed testing regime that sets the frequency and duration of testing to minimise emissions to air while undertaking all required maintenance. For the Proposal, it is anticipated that up to two generators would be tested at any one time during the daytime, with a total cumulative testing duration of not more than 153 hours in a year.

Dispersion modelling was undertaken to determine potential air quality impacts at nearby identified sensitive receivers as a result of routine maintenance. Predicted incremental concentrations for a realistic emissions scenario during routine maintenance of the back-up generators show that no exceedances are predicted to occur at any surrounding receptors for all assessed pollutants.

The predicted incremental concentrations for all assessed pollutants are shown to be below the relevant criteria under realistic operations where the emergency generators are appropriately operated under the testing schedule. Therefore, the air quality impact risk from the routine maintenance activity would be negligible.

The predicted annual average particulate matter concentrations (as TSP, PM_{10} and $PM_{2.5}$) resulting from Stage 3, Scenario 2 operations are presented in **Table 24.** It shows that predicted incremental concentrations of TSP, PM_{10} and $PM_{2.5}$ at all receptor locations are low (less than 0.1 % of the annual average TSP, PM_{10} and $PM_{2.5}$ criteria). The proposed operation under the testing regime is therefore predicted to not result in any exceedances of the relevant criteria.

Table 24 Predicted annual average TSP, PM10 and PM2.5 concentrations – Stage 3, Scenario 2

Receptor	**Average annual concentration $\mu g/m^{-3}$**								
	TSP			**PM_{10}**			**$PM_{2.5}$**		
	Incr.	**Bg.**	**Cumul.**	**Incr.**	**Bg.**	**Cumul.**	**Incr.**	**Bg.**	**Cumul.**
Criterion	**90**			**25**			**8**		
Max. % of criterion	< 0.1	46.0	46.1	< 0.1	80.8	81.0	< 0.1	107.5	108.1

Receptor	Average annual concentration µg/m^{-3}								
	TSP			PM_{10}			$PM_{2.5}$		
	Incr.	Bg.	Cumul.	Incr.	Bg.	Cumul.	Incr.	Bg.	Cumul.
Criterion	90			25			8		
R1	< 0.1	41.4	41.5	< 0.1	20.2	20.2	< 0.1	8.6	8.7
R2	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R3	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R4	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R5	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R6	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R7	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R8	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R9	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R10	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R11	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R12	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R13	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R14	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R15	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R16	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R17	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R18	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R19	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R20	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R21	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
R22	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I1	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I2	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I3	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7

Receptor	Average annual concentration µg/m^{-3}								
	TSP			PM_{10}			$PM_{2.5}$		
	Incr.	Bg.	Cumul.	Incr.	Bg.	Cumul.	Incr.	Bg.	Cumul.
Criterion	90			25			8		
I4	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I5	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I6	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I7	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I8	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I9	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I10	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I11	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I12	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I13	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I14	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I15	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I16	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I17	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I18	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I19	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I20	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7
I21	< 0.1	41.4	41.5	< 0.1	20.2	20.3	< 0.1	8.6	8.7

Source: Northstar, 2024

Table 25 presents the maximum 24-hour average PM_{10} and $PM_{2.5}$ concentrations predicted to occur at the nearest receptors, as a result of the Proposal operations under Stage 3, Scenario 2. No background concentrations are included within this table.

Table 25 Predicted maximum incremental 24-hour PM10 and PM2.5 concentrations – Stage 3, Scenario 2

Receptor	Maximum 24-hour average concentration µg/m^{-3}	
	PM_{10}	$PM_{2.5}$
Criterion	50	25

Receptor	Maximum 24-hour average concentration µg/m^{-3}	
	PM_{10}	**$PM_{2.5}$**
Max. % of criterion	1.1	2.1
R1	0.2	0.2
R2	< 0.1	< 0.1
R3	0.1	0.1
R4	0.1	0.1
R5	< 0.1	< 0.1
R6	< 0.1	< 0.1
R7	< 0.1	< 0.1
R8	< 0.1	< 0.1
R9	< 0.1	< 0.1
R10	< 0.1	< 0.1
R11	< 0.1	< 0.1
R12	< 0.1	< 0.1
R13	< 0.1	< 0.1
R14	0.1	0.1
R15	< 0.1	< 0.1
R16	< 0.1	< 0.1
R17	< 0.1	< 0.1
R18	< 0.1	< 0.1
R19	< 0.1	< 0.1
R20	< 0.1	< 0.1
R21	< 0.1	< 0.1
R22	< 0.1	< 0.1
I1	< 0.1	< 0.1
I2	< 0.1	< 0.1
I3	0.1	0.1
I4	0.1	0.1

Receptor	Maximum 24-hour average concentration µg/m^{-3}	
	PM_{10}	**$PM_{2.5}$**
I5	0.5	0.5
I6	0.1	0.1
I7	0.1	0.1
I8	0.2	0.2
I9	0.2	0.2
I10	< 0.1	< 0.1
I11	< 0.1	< 0.1
I12	0.3	0.3
I13	0.3	0.3
I14	0.2	0.2
I15	0.1	0.1
I16	0.2	0.2
I17	0.1	0.1
I18	0.1	0.1
I19	0.1	0.1
I20	0.1	0.1
I21	< 0.1	< 0.1

Source: Northstar, 2024

The predicted incremental concentrations of PM_{10} and $PM_{2.5}$ are demonstrated to be minor at all receptor locations. An assessment of the 24-hour PM_{10} and $PM_{2.5}$ concentrations with background included is not presented, as the concentrations are all driven by background. The addition of the predicted increments presented in **Table 25** do not result in any additional exceedances of the criteria.

Mitigation Measures

Based on the AQIA, no mitigation measures were identified as being required for operations.

6.1.7. Hazards and Risks

A Preliminary Hazards Assessment Report has been prepared by Aurecon and is provided at **Appendix HH.** The report reviewed the quantity of dangerous goods stored on site and associated transport of dangerous goods under the threshold criteria outlined in the R&H SEPP.

Potential Impacts

The Project is proposed to contain the following hazardous materials stored on site:

- 98 diesel generators;
- 54 x diesel storage tanks;

- Total diesel fuel storage: 3,000 tonnes
- Lithium-ion Batteries: 455 tonnes

To support the operation of the site and power supply remains uninterrupted and consistent, both lithium-ion batteries and diesel generators will be located on the site. While diesel is not classified as a dangerous good by the Australian Dangerous Goods Codes (**ADGC**), it is a Class C1 combustible liquid. Lithium-ion batteries have the potential for thermal runaway and are identified as Class 9 dangerous goods. The classes and qualities of dangerous good to be stored on the site is summarised in **Table 26.**

Table 26 Quantities of dangerous good stored within the site

Material	UN number	Dangerous goods class	Proposed Quantity	Storage Threshold	Transport Threshold
Lithium-ion Batteries	3480/3481	Class 9	455 tonnes	N/A	>1000 movements annually
Diesel Fuel	1202	C1/C2 - combustible liquid)	3,000 tonnes	N/A	N/A

A screening assessment was undertaken by Aurecon in accordance with the provisions of the R&H SEPP. As Class 9 dangerous goods and C1 & C2 combustible liquids are excluded, no storage screening is required.

The SEPP screening for transportation only applies to the movement of lithium-ion batteries. The movement of lithium-ion batteries is only expected during the commissioning stage with no movement of lithium-ion batteries expected during operation.

Mitigation Measures

To mitigate risks associated with the storage of potentially dangerous goods at the site, the Preliminary Hazards Assessment Report recommends the following:

- The regulator should be notified of diesel storage exceeding manifest quantities in accordance with Regulation 348 of the WHS Regulations.
- Outer warning placards regarding quantities of diesel stored should be displayed at any entrance where emergency services may enter the workplace in accordance with Regulation 349 and Schedule 13 of the WHS Regulations.
- Placards should be displayed on or near the containers of diesel in accordance with Regulation 350 and Schedule 13 of the WHS Regulations.
- An environment protection licence is required for chemical storage and should be obtained.
- An emergency plan should be prepared for the site and provided in the NSW Fire and Rescue as per the requirements of Regulation 361 of the WHS Regulation.
- Each battery storage room is to be installed with the following measures:
  - A fire resistance level (**FRL**) of 120/120/120 separating the rooms with lithium-ion batteries from the rest of the building.
  - Adequate ventilation to relieve the off gassing of combustible gases from thermal runaway or a gas detection system to ensure the combustible gas generated from a batter fire does not exceed the lower explosive limit (**LEL**).
  - Smoke detection.
  - Double knock pre-action sprinkler system.

- The inclusion of lithium-ion batteries is to be incorporated into the overall fire safety strategy by the Project fire engineer.

- AS 1940:2017 *"The storage and handling of flammable and combustible liquids"* should be followed for safe management of combustible liquids on site. The following key safeguards relevant to diesel storage at the NEXTDC site were identified from this standard:
  - The diesel storage tanks should be designed and constructed to comply with AS1692 or an equivalent Standard. Specifically, the tanks shall comply with the separation distances stated of AS 1940 (AS 1940 clause 5.7.2):
    - To security fences and on-site protected places, Table 5.3.
    - To a protected place beyond the site boundary, Table 5.4.
    - Tank to Tank separation distances as per 5.7.6.
  - The design uses 240-minute fire rated self-contained (double wall) tanks in accordance with 5.9.4. Such tanks halve the AS 1940 separation distances noted above. In addition to the fire rating and secondary containment, multi-hazard tank designs such as *SuperVault* are also rated for some degree of ballistic and vehicle impact protection, significantly reducing the risks associated with fuel storage.
  - Except for generators with belly tanks, the generators will have day tanks not exceeding 1,000 litres. These tanks are installed within the containerised generators, with secondary containment provided inside the enclosure. The containment will be provided with automated leak detection.
  - In addition to containment of tanks, spill containment will be provided around tank fill connections, pumps, and filters; meeting and exceeding the requirements of AS 1940.
  - A fire protection system should be designed and installed according to AS 1940 including measures for detection and suppression.

6.1.8. Infrastructure Requirements and Utilities

An Infrastructure Requirements Report has been prepared by Aurecon and is provided at **Appendix II**. The report assessed the existing and required infrastructure needed to service the site and future data centre.

Existing Environment

The site is currently serviced by all utilities including potable water, electricity, sewerage, gas and internet. There are no backup power sources at scale known to exist at the current site. For the electrical demand, the following on-site infrastructure will be required:

Stage 1: Permanent power supply.

- A power supply is anticipated to be connected to the new 330kV substation fitted with one 330kV/33kV transformer for Building A. Power supplies will be distributed within the development via the customer's owned underground electrical distribution system.

Stage 2: Permanent power supply from Lumea 330kV/33kV substation

- The substation will comprise two 330kV/33kV transformers.
- Stage 2 supply is sufficient to supply the maximum demand of Buildings A, B and C and may supply other development in the proximity.
- HV switching stations will be installed at dedicated switchboard on each building to provide a full flexibility on the control as well as an enhanced electrical protection.

Stage 3: Permanent power supply from Lumea 330kV/33kV substation

- The substation will comprise three 330kV/33kV transformers.
- Stage 3 supply will supply all buildings and may supply other development in the proximity.
- HV switching stations will be installed at dedicated switchboard on each building to provide a full flexibility on the control as well as an enhanced electrical protection.

For other utility demand:

- There is a 450mm potable water trunk main along the Burley Road and a 150mm potable water main at the north-west corner of the Project site.
- There is no existing sewer main within the site boundary. There is a 375mm existing gravity sewer main located near Reserved Road approximately 350 metres away from the site boundary.
- Existing telecommunication services serve the locality. This includes major providers such as Optus and TPG.

Mitigation Measures

To mitigate the potential impacts related to electricity and water usage, the Infrastructure Requirements Report prepared by Aurecon recommends the following:

- High electrical demand impacting the surrounding HV distribution network - Proposals are to have data specific electrical supply. Electrical authorities have confirmed that capacity exists within the network to service the site.
- High noise levels when testing or operating back-up generators - Generators are containerised units which include noise attenuation features. The noise levels of generator testing will be assessed against NSW Noise Policy for Industry.
- Fuel spills when filing generators - Fuel tanks will be designed to comply with AS1940. Fuel tanks will be double walled. Each fill point will have all ancillaries to meet requirements of AS1940.
- Fire and explosion risks associated with the generators - Generators will be designed in accordance with AS1940 which defines minimum clearance from building and separation between fuel storage tanks ("belly tanks"). Generators located behind security fencing/gates meaning only approved personnel can access this area.
- Fire and explosion risks associated with the switching station - HV switching station will be designed by a certified Level 3 ASP designer in accordance with the relevant current version of Australian Standards and Industry Associations Standards and Guidelines. Switching station located behind security fencing/gates meaning only approved personnel can access the site.
- Air pollution when generators are operational - Two separate mains supply routes are proposed, and the probability of mains failure has been investigated for the electrical supply. Failure rates for a supply in this arrangement are extremely low meaning the generators will rarely be used. Generators will include specific emissions control measures and will be Tier 2 certified to Australian EPA requirements.

6.2. STANDARD ASSESSMENT IMPACTS

This section of the report addresses the matters which require a standard assessment. It outlines the findings of the assessment and the key mitigation measures used to ensure compliance with the relevant standards or performance measures.

6.2.1. Aboriginal Cultural Heritage

An Aboriginal Cultural Heritage Assessment (**ACHA**) has been prepared by Urbis and is provided at **Appendix U.** The ACHAR documents the process of investigation, Aboriginal community consultation with locally listed Aboriginal communities and the Registered Aboriginal Parties (**RAPs**) and assessment of potential Aboriginal cultural heritage and Aboriginal archaeology.

Consultation with RAPs was undertaken in the following stages:

- Stage 1 – Notification of Project Proposal and registration of interest.
- Stage 2 – Presentation of information about the proposed Project.
- Stage 3 – Gathering information about the cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

Urbis initiated consultation with the RAPs in October 2023, followed by 76 letters sent to identified Aboriginal groups and individuals in November 2023. A total of 24 groups registered their interest in the Project.

Consultation was undertaken in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*. No issues were raised regarding the ACHA or its methodology.

The potential impacts of the development are discussed in the ACHA as follows:

- No previously identified Aboriginal objects or declared Aboriginal places are located within the subject area.
- Part of the subject area along the western boundary is located within 200m of a first order waterway, while part of the subject area on the eastern boundary is located on a ridgeline, both of which are considered indicative of likely past Aboriginal land use.
- Ground disturbance is assessed to be high across the entire subject area, due primarily to quarrying activities in the subject area beginning in the 1970s and more recent earthworks.
- In view of the high ground disturbance across the entire subject area, the Aboriginal archaeological potential of the entire subject area is assessed to be very low.
- The subject area is assessed as having low Aboriginal cultural heritage significance for its limited social and cultural value, noting that there is no evidence of a specific Aboriginal association with the subject area and the high level of ground disturbance in the subject area is likely to have diminished any social and cultural value.
- As there are no known Aboriginal objects within the subject area and it is unlikely to retain any as yet unknown Aboriginal objects, the proposed physical works are unlikely to cause either direct or indirect harm to Aboriginal objects or negatively impact inter-generational equity.

The following unexpected archaeological finds procedure should be followed in the unlikely event that any archaeological materials, or suspected archaeological materials, are uncovered during any works within the subject area:

- All works within the vicinity of the find must immediately stop and the location cordoned off with signage installed to stop any accidental impacts to the finds. The find must not be moved 'out of the way' without assessment.
- The site supervisor or another nominated site representative must contact either the Project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist.
- The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design and archaeological investigation/salvage methodology and registration of the find with the Aboriginal Heritage Information Management System (**AHIMS**). Any management measures should be decided upon consultation with the RAPs.
- Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken.
- Reporting may need to be prepared regarding the find and approved management strategies.
- Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW.
- The following human remains procedure should be followed in the unlikely event that any human remains, or suspected human remains, are uncovered during any works within the subject area:
- Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW.
- The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555).
- The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist.
- Management recommendations are to be formulated by the NSW Police, Heritage NSW, site representatives and the RAPs.
- Works are not to recommence until the find has been appropriately managed.

6.2.2. Non-Aboriginal Cultural Heritage

A Heritage Impact Statement (**HIS**) has been prepared by Urbis and is included at **Appendix U**. The HIS assessed the site and the surrounding area for any direct or indirect heritage impacts.

The site is not listed as a heritage item and is not within the vicinity of any heritage items or heritage conservation areas. The historical archaeological assessment determined that the subject area has low potential for retaining historical relics. As such, there is no potential for the proposed works to have detrimental heritage impacts.

Although the likelihood of the subject area retaining any historical relics is low, it is recommended that unexpected finds and human remains procedures be implemented as harm mitigation measures.

If any archaeological deposits or features are unexpectedly discovered during any site works, the following steps must be carried out:

- All works within the vicinity of the find must immediately stop. The find must not be moved 'out of the way' without assessment. The find must be cordoned-off and signage installed to avoid accidental impact.
- The site supervisor or another nominated site representative must contact either the Project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist.
- The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design and archaeological investigation/salvage methodology and notification of the discovery of a relic to Heritage NSW in accordance with S.146 of the *Heritage Act 1977.*
- Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken.
- Reporting may need to be prepared regarding the find and approved management strategies.
- Works in the vicinity of the find would only recommence upon receipt of approval from Heritage NSW.

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

- All works within the vicinity of the find must immediately stop. The find must be cordoned-off and signage installed to avoid accidental impact.
- The site supervisor or other nominated manager must notify the NSW Policy and Heritage NSW (Enviroline 131 555).
- The find must be assessed by the NSW Policy, which may include the assistance of a qualified forensic anthropologist.
- Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives.
- Works are not to recommence until the find has been appropriately managed.

6.2.3. Contamination

A Contamination and Remediation Status Letter has been prepared by JK Environments and is provided at **Appendix T**. This letter was limited to a desktop review of information of the following documents prepared for the site:

- A validation report prepared by Environmental Resources Management Australia Pty Ltd in 2023;
- A site audit report (**SAR**) prepared by Enviroview Pty Ltd (Enviroview) in 2023; and
- A site audit statement (**SAS**) associated with the SAR, prepared by Enviroview in 2023.

Based on the above information, JK Environments have confirmed the site has been satisfactorily remediated and is suitable (from a contamination perspective) for the proposed data centre (high tech industry land use).

The Contamination and Remediation Status Letter recommends that following completion of earthworks, an asbestos clearance inspection should be undertaken, and a clearance certificate issued by SafeWork NSW Licensed Asbestos Assessor confirming that no asbestos is visible at the surface.

6.2.4. Ecologically Sustainable Development

An Ecologically Sustainable Development (**ESD**) Report has been prepared by Aurecon and is provided at **Appendix N**. These reports outline the ESD and energy efficiency measures to minimise greenhouse gas and carbon emissions and the predicted operational energy consumption.

Aurecon identified key initiatives to be implemented to minimise consumption and resources. **Table 27** details the relevant ESD initiatives proposed as part of the development. It is expected that these initiatives will be further developed during the detailed design phase and tracked throughout the Project lifecycle.

It is noted emissions associated with the electricity grid are likely to reduce over time as renewables increase and fossil fuel generation is phased out. In the meantime, emission reductions can be achieved through purchasing green power.

An Embodied Emissions Material Form has also been prepared (**Appendix EE**) which addresses the requirements of the Chapter 3 of the Sustainable Buildings SEPP.

Table 27 ESD Initiatives

Category	**Initiative**
Energy and Carbon	▪ The mechanical system is proposed to utilise high efficiency chillers supplying high temperature chilled water to data hall cooling plant to maximise energy efficiency when chillers run, reducing energy consumption. ▪ To further limit lighting electricity consumption, motion sensor control is proposed to limit lighting in occupied spaces, which will also be accompanied by manual local switches for user control. ▪ It is proposed that new lighting provided will be LED type luminaire fittings which provide efficient lighting along with motion sensor controls for occupied spaces.
Water	▪ It is proposed that fixture selection in future design stages must adhere to GREP and Green Star requirements for flow efficiency. ▪ Rainwater from the roof will be collected in rainwater harvesting tanks and to provide tanks to collect cooling tower discharge water for reuse.
Resources	▪ Strategies to reduce embodied carbon as discussed in the integrated design workshop to be implemented in the design. ▪ A construction and demolition waste management plan to be developed in the next phase to inform regarding major waste streams generated, including disposal and diversion rates
Resilience	▪ Plant selection will be based off the energy modelling analysis with climate change factors incorporated in the design.

Category	Initiative
	▪ High SRI Roofing materials in accordance with Green Star Urban heat island requirements will help lower the heat effect. ▪ Increased HVAC monitoring schedule to ensure filters are replaced frequently to maintain fresh airflow in conditioned areas as a measure for bushfire smoke.

Mitigation measures have been included to ensure there are significant reductions across energy and water usage. A summary is provided below:

- Energy Use and Greenhouse Gas Emissions – Designing to a Power Usage Effectiveness (**PUE**) of 1.3, compared to an industry standard of 1.6 will result in a 19% reduction in energy consumption for cooling and other non-IT infrastructure. This improvement in energy efficiency directly translates to lower greenhouse gas emissions.
- Water Use - Designing to a Water Usage Effectiveness (**WUE**) of 1.5 litres per kilowatt-hour (L/kWh), compared to the industry standard of 1.8 L/kWh will result in a significant 17% reduction in water consumption.

Additionally, the development is targeting a 5-star NABERS Energy for Data Centre Infrastructure rating, demonstrating a commitment to sustainable design and operation.

6.2.5. Biodiversity

A request to waive the requirement for a BDAR was prepared by Narla Environmental and submitted to DPHI on 29 January 2024. A BDAR waiver was subsequently issued by the DHPI for the Project on 29 February 2024. This is provided at **Appendix FF.**

6.2.6. Flooding

A Flood Risk Assessment Report has been prepared by TTW and is provided at **Appendix Q.** The report examined the flooding behaviour of the site and proximate context as well as the applicable statutory and non-statutory planning controls and development standards.

The site slopes upwards from Johnston Crescent, at the western end of the site, towards several high points near the eastern site boundary. Site elevation varies between 78m AHD and 99m AHD, rising 21 metres over approximately 295 metres with an estimated average gradient of 7.1%. The Proposal has been identified as “Sensitive Uses and Facilities” by Fairfield City Council. Being critical infrastructure of this nature it is vital that data stored is protected from flood damage.

The available flood information reveals that flooding depths to part of Burley Road exceed three metres in some areas. As such, evacuation in a flood event could be challenging without a Flood Risk Management Plan. Despite parts of Burley Road reaching high flood risk, the subject site does not experience flooding even during the probable maximum flood (**PMF**) scenario and the site is not part of the flood planning area.

The report concludes that as the site is not prone to flooding, even in the extreme PMF event, and that it will not impact hydraulically on external properties. Accordingly, the proposed development is suitable from flood perspective, subject to the preparation of Flood Emergency Management Plan to address management strategies for site response and access and egress routes to the site in the event of a PMF event scenario.

Figure 46 PMP Flood Extents Map

Source: TTW, 2024

6.2.7. Bushfire

A Bushfire Protection Assessment has been prepared by ABPP and is provided at **Appendix AA.** The report examines the measures required to minimise bushfire risk on the Proposal and determine the deemed-to-satisfy bushfire protection requirements in accordance with *Planning for Bushfire Protection 2019* (**PBP**).

The site comprises vacant land which has been cleared of vegetation and does not contain any existing built form structures. As shown in **Figure 47,** a very small portion of the site along the south eastern boundary is identified as bushfire prone land. The C2 zoned land to the south east of the site is identified as Category 1 bushfire prone vegetation.

The assessment included a review of the level of threat and made recommendations based on provision and maintenance of a “defendable space” to the southeast of Building E and north of Buildings B to D. This will increase the protection of these buildings against the potential impact of radiant heat/ember attack. Specific bushfire construction standards have been recommended to Building E and Buildings B, C & D.

To mitigate the potential impacts related to bushfire, the Bushfire Protection Assessment provides the following mitigation measures:

- The BAL 19 construction standards to the southern and eastern elevations of Building E shall be constructed to comply with Section 3 and Section 6 (BAL 19) of AS 3959-2018 - *‘Construction of Buildings in Bushfire Prone Areas’.*
- The remaining elevations of Building E shall be constructed to comply with Section 3 and Section 5 (BAL 12.5) of AS 3959-2018- *‘Construction of Buildings in Bushfire Prone Areas’.*
- The BAL 19 construction standards to the northern elevation of Building B, C and D shall be constructed to comply with Section 3 and Section 6 (BAL 19) of AS3959-2018- *‘Construction of Buildings in Bushfire Prone Areas’.*
- The remaining elevations of Building B, C and D shall be constructed to comply with Section 3 and Section 5 (BAL 12.5) of AS3959-2018- *‘Construction of Buildings in Bushfire Prone Areas’.*
- Note: The construction of Burley Road will remove of the vegetation in the road corridor and remove the requirement to apply bushfire construction standards to Building B, C and D.

- The following additional measures apply to Building E:
  - Access doors to the building shall be fitted with seals that seal the bottom, stiles and head of the door against the opening/frame to prevent the entry of embers into the building.
  - Particular attention shall be given to the gap at the head of the curtain of the roller doors, where mohair type seals shall be used.
  - Any external vents, grilles and ventilation louvres shall have stainless steel mesh with a maximum aperture of 2mm square fitted to prevent the entry of embers into the building or be fitted with a louvre system which can be closed to maintain a maximum aperture or gap of no more than 2mm.
- Fire appliance access is to be provided along the northern side of Building B, C and D, to provide continuous fire appliance access to all aspects of the buildings.
- The fire-fighting water supply to the proposed building shall comply with the Building Code of Australia (**BCA**) and Australian Standard AS 2419.1 – 2021.
- Electricity and gas supplies will be laid underground and therefore address the performance standard of Chater 4 of *Planning for Bushfire Protection 2019.*
- The management of Defendable Spaces within the site shall comply with the recommendations of Appendix 4 of *Planning for Bushfire Protection 2019 and Standards for Asset Protection Zones.*
- Management of the Defendable Spaces within the development shall comply with the following:
  - Maintain a clear area of low-cut lawn or pavement adjacent to the buildings; utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to building;
  - Keep areas under shrubs and trees raked and clear of combustible fuels;
  - Trees and shrubs should be maintained in such a manner that tree canopies are separated by 2 metres and understory vegetation is not continuous [retained as clumps].

Figure 47 Bushfire Prone Land Map

Source: Urbis, 2023.

6.2.8. Water Management

A Civil Engineering Report has been prepared by TTW and is provided at **Appendix R.**

The approved subdivision bulk earthworks have been completed, including a sedimentation basin in the northeast corner to treat the entire site. The basin discharges to a 1350mm pipe connecting to the street stormwater network. The outlet pipe was designed to accommodate outflows from this basin at 2934 L/sec and 4457 L/sec for the critical 20% AEP and 1% AEP storm events respectively.

To appropriately manage potential impacts, all new site stormwater is required to be conveyed by gravity and discharge from the site via Council's existing drainage system and existing catchment conditions should be maintained where practical. On-site detention has been designed to discharge at a rate below the permissible site discharge for the 20% and 1% AEP storm as per the WSEA Fairfield DCP. The governing site storage requirement for the site is 2,378m³ for the 1% AEP storm, with five tanks totalling 2,682m³.

The following mitigation measures are to be implemented in accordance with methodology and findings of the Civil Engineering Report:

- Five on-site stormwater detention tanks to reduce the discharge from the site to below the permissible site discharge as per the WSEA Fairfield DCP.
- A site wide stormwater pit and pipe network to account for stormwater conveyance for the stage 1 and the ultimate stage of the proposed development.
- Water quality treatment measures including proprietary products.
- An erosion and sediment control plan to manage stormwater quality and quantity on site during the construction phase of the development.
- On site stormwater detention to reduce the rate of discharge of stormwater from the site to an acceptable level in accordance with the WSEA Fairfield DCP.
- On site stormwater quality treatment to mitigate the impact of the site on downstream water quality.
- During the construction stages of the Project, an Erosion and Sediment Control Plan (**ESCP**) is to be implemented to prevent sediment laden stormwater from flowing into adjoining properties, bushland, roadways or receiving water bodies.

6.2.9. Social Impacts

A Social Impact Assessment (**SIA**) has been prepared by Urbis and is provided at **Appendix W**. The SIA identifies and analyses the potential positive and negative social impacts associated with the Proposal. Mitigation measures are proposed to minimise the negative impacts.

Positive Impacts

- A high (positive) impact on cybersecurity related to tenants and users.

  Data centres house critical data that are essential for the operation of many businesses, organisations and government services. This data can provide valuable and sensitive information and it is critical to provide robust safety measures against cyberattacks and physical attacks. NEXTDC has established security risk management measures, including six layers of security comprising anti-scale perimeter security, front of house secure access, anti-clone biometric fingerprint technology, ballistic rated security, elite security operations, digital access management, and risk and compliance management.

- A medium (positive) impact on a healthy work environment

  The Proposal includes amenities and design outcomes for a healthy work environment. This includes landscaping treatments, onsite amenity, natural light and ventilation etc.

- A medium (positive) impact on contribution to the delivery of economic opportunities for the Western Sydney community.

  The proposed S4 data centre is well-located to support business, organisations and individuals in the surrounding regional area. It will play a role in the delivery of the greater economic vision for the Western Parkland City, that will significantly benefit the broader Western Sydney community by providing a diversity of new jobs, services, and other opportunities closer to home.

- A medium (positive) impact on employment and training opportunities during construction.

  The construction workforce will include approximately 1,111 direct full-time equivalent workers for the duration of construction (approximately 40 months). These roles will demand a range of qualifications, from TAFE certifications including apprenticeships, certificate level, and diploma level qualifications, to degree qualifications in construction, civil, or engineering. The allows for a range of people to be sourced for employment during the construction phase.

- A medium (positive) impact on local and regional employment during operation.

  The operational workforce is Projected to comprise approximately 411 direct FTE specialised and related full-time roles. The workforce will be essential for the effective functioning of the facility, covering a diverse range of responsibilities. Crucial roles to be filled include facility management, security, customer service, IT professionals, and general business functions. The adoption of the further recommended mitigation measures in the SIA could enhance this potential impact to high (positive).

Potential Negative Impacts

- A low (negative) impact on traffic on the local road network.

  The Proposal is not anticipated to have a significant impact on the traffic in the local area. The traffic is expected to operate under satisfactory conditions until 2026. In 2036, traffic is anticipated to increase due to the change in the road network around the site. The TIA includes mitigation measures, including ongoing consultation with TfNSW to continue to monitor and discuss potential traffic issues and access for future workers and local residents.

- A low (negative) or neutral impact on Aboriginal Culture and Heritage.

  No sites or Aboriginal Objects were detected in the ACHA; therefore, it is unlikely that the Proposal will result in and negative impacts to Aboriginal Cultural Heritage.

- A high (negative) unmitigated noise and vibration impact during construction.

  The NVIA indicates noise and vibration impacts are likely to be experienced during construction. However, a detailed Construction Management Plan (**CMP**), including a CNVMP will be procured prior to the issuing of a Construction Certificate (**CC**). Following preparation and implementation of the CMP, the mitigated impact during construction was assessed as medium (negative).

- A very high (negative) unmitigated noise and vibration impact during operation.

  The NVIA indicates noise impacts may arise from daily maintenance testing of the back-up power system, operational equipment within the data centre and rooftop equipment. During the 'worst-case' scenario noise levels without unmitigated measures could surpass Project noise trigger levels (**PNTL**). However, a Plan of Management (**PoM**) inclusive of an Operational Noise and Vibration Management Plan (**ONVMP**) will be procured prior to the issuing of a CC. Following preparation and implementation of the PoM, the mitigated impact during operation was assessed as low (negative).

- A very high (negative) unmitigated change to visual amenity and privacy.

  Changes to visual amenity may be experienced by nearby residents who have historically experienced rural visual amenity as well as industrial land uses with lower building heights. However, increases to proposed tree canopy coverage and density of vegetation along the eastern boundary of the site and Burley Road frontage will provide a further buffer to potential visual impacts. The resulting impact will be high (negative) mitigated.

- A low (negative) impact on resilience and sustainability related to resource use and environment.

  The Proposal includes an ESD Report and a Bushfire Protection Assessment with recommendations and mitigation measures. Further mitigation measures are contained in the SIA which will bolster the Proposals relationship with resilience and sustainability.

A range of mitigation measures are suggested within the SIA which have been extracted from the respective technical reports. Further mitigation measures below are proposed in the SIA as listed below:

- Local Character

- Increase tree canopy and density of vegetation along the eastern boundary of the site and Burley Road frontage to further buffer and reduce the visual impact of the development for nearby residents.
- Investigate opportunities to sponsor or provide funding to community organisations and groups to utilise for community building activities to develop and strengthen connections with the local community (e.g. community events, programs or other initiatives that benefit the local community).

- Traffic Provisions
  - Undertake ongoing consultation with TfNSW to continue to monitor and discuss potential traffic issues and access for future workers and local residents.

- Noise and Vibration
  - Prepare a detailed Construction Management Plan (**CMP**), including a Construction Noise Vibration Management Plan (**CNVMP**), prior to CC issue which considers amenity impacts associated with construction (e.g. noise, air quality, etc). It should identify and assess any cumulative amenity impacts with other nearby developments and provide for a Community Engagement Strategy which responds to formal complaints and procedures during construction.
  - Prepare a Plan of Management (**PoM**) that includes an Operational Noise and Vibration Management Plan (**ONVMP**), prior to CC issue which addresses operational noise impacts that cannot be assessed at this stage. It should identify and assess any cumulative amenity impacts with other nearby developments and provide for a Community Engagement Strategy which responds to formal complaints and procedures during construction.

- Provision of a Healthy Work Environment
  - The future café should focus on provision of healthy food options. This is particularly important given the lack of food outlets in the immediate area.
  - Implement the recommendations of the GTP to support the health and wellbeing of workers.
  - Consider the development and implementation of a Health and Wellbeing Program (**HWP**) to encourage future staff to engage with healthy lifestyle choices. This could include providing exercise classes (e.g. yoga) in respite rooms before work or during breaks.

- Visual Amenity and Privacy
  - Increase tree canopy and density of vegetation along the eastern boundary of the site and Burley Road frontage to further buffer potential visual impacts.

- Potential Impact on Environmental Values
  - Consider repurposing thermal output by integrating data centres within energy grids.

- Employment and Training Opportunities During Construction
  - Consider developing an employment plan which includes measures to encourage the procurement of local construction companies.
  - Consider establishing ongoing partnerships with local TAFE institutes to connect local apprentices and trainees with placements during construction.

- Diverse Local and Regional Employment and Training Opportunities
  - Consider exploring partnerships with local universities such as Western Sydney University to offer support to students studying and pursuing a career in IT, Project management, and other relevant fields (e.g. internships, placements, traineeships, mentor programs or other support).
  - Consider exploring partnerships with local schools to provide opportunities to introduce students and young people to the field of IT, such as the FY23 programme which included several Year 10 interns spending the week at NEXTDC to gain insight and experience of data centre operations.
  - Consider operation of the proposed café by a social enterprise organisation to provide training and employment experience opportunities, possibly for vulnerable groups.

- Community Engagement
  - Prepare a detailed CMP and PoM including a Community Engagement Strategy to respond to formal complaints and engagement procedures during construction, to ensure effective and ongoing communication with affected residents.
  - Consider providing a direct contact line to local residents to share concerns during pre-construction, construction and operation. This should be documented in the PoM.
  - Consider utilising NEXTDC's Corporate Social Responsibility Program ('Live to Give') to build relationships with the local community. Consideration should be given to initiatives aligned to local community values (e.g. wildlife rescue and bush care).

6.2.10. Waste Management

A Waste Management Plan (**WMP**) has been prepared by Encycle and is provided at **Appendix Z**. The WMP identifies all potential waste likely to be generated during the demolition, construction and operational phases and how the waste is to be handled, processed and disposed of, or reused and recycled as per Council's DCP.

6.2.10.1. Construction Waste Management

In terms of Construction Waste Management, the WMP provides the following:

- Demolition works are limited to perimeter retaining walls due to level differences.
- A licensed waste contractor will service the construction site and manage all waste streams. All construction waste will be placed into skip bins, then sorted at a resource recovery facility.
- A detailed Project specific waste management plan will be procured prior to the commencement of construction.
- Bins, skips and other site receptacles and storage areas will be planned and located around the site according to the construction stage and the material types and quantities being generated. Construction waste storage areas will be provided in the location nominated in the WMP**.**

The contractor will develop a detailed Project specific Construction Waste Management Plan (**CWMP**) for the construction stage prior to commencement of construction.

6.2.10.2. Operational Waste Management

In terms of operational waste management, the WMP provides the following:

- The sustainability objectives include at least 90% diversion of solid waste during operation, with an ongoing commitment to prevention, elimination or reduction of wasteful practices and recycling.
- Bin stores will be located adjacent to the loading bay in each building. The café bin store in Building A, situated next to the collection point for convenient access by staff and waste service providers, while restricting access to the secured parts of the site.
- Private service providers will undertake the waste, recycling and organise waste collections once the Proposal is operational. Access to the site and individual buildings will be facilitated by permanent security staff.

An Operational Waste Management Plan (**OWMP**) suitable for presenting to building users will also be developed and implemented and will include information relevant to both the initial occupation and ongoing management of the building and the strategy for communicating the plan to relevant staff and stakeholders.

6.2.11. BCA

A BCA Compliance Report has been prepared by McKenzie Group and is available at **Appendix I**. The BCA Report has been prepared to:

- Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA.
- Identify matters that require plan amendments in order to achieve compliance with the BCA.

- Identify matters that are to be required to be addressed by Performance Solutions.

Key items have been identified and noted on the architectural plans which require further resolution. These matters will be addressed via performance solutions or plan amendments prior to the relevant CC issue. McKenzie Group conclude that the proposed development can readily achieve compliance with the BCA subject to resolution of the matters identified in the BCA Report.

6.2.12. Accessibility

An Access Review Report has been prepared by MGAC and is provided at **Appendix BB**. The review of the proposed buildings showed that the development can achieve compliance with the relevant accessibility requirements. Some areas require further detail to confirm; however, adjustments can be made during the detailed construction stage to achieve compliance.

The assessment confirms that accessibility requirements, pertaining to external site linkages, building access, common area access, sanitary facilities and parking can be readily achieved. MGAC will work with the Project team as the scheme progresses to ensure appropriate outcomes are achieved in building design and external domain design.

The report identifies that the matters will need to be addressed during detailed design:

- It will be necessary to provide an accessible path of travel from main pedestrian entry points at the site allotment boundary to all building entrances compliant with AS1428.1:2009.
- An accessible path of travel between the 5 buildings (or parts of buildings) that are connected by a pedestrian linkage, within the site allotment boundary, compliant with AS1428.1:2009 is required.
- An accessible path of travel to building entrances (required to be accessible) from associated accessible car-parking bays, compliant with AS1428.1:2009 is required.

It is anticipated that a suitable condition of consent can be imposed on the proposed data centre to ensure the recommendations of the BCA and Access Report are addressed prior to the issue of the relevant Construction Certificate.

6.2.13. Ground and Water Conditions

A Surface Water and Groundwater Condition Assessment has been prepared by JK Environments and is provided at **Appendix KK.** A Geotechnical Assessment was also undertaken by JK Geotechnics and can be found at **Appendix Y**. A summary of the key findings is discussed below.

6.2.13.1. Site Preparation Works

Site preparation works will be necessary to provide several large, flat building pads, internal roads, footpaths and landscaping areas with required set downs from finished levels to accommodate pavement and slab thickness. Temporary batters will be provided at stage 1 for Buildings C and E building pad bulk earthworks, with a maximum slope of 1:4. Site preparation works will include:

- Stripping of topsoil from work areas to be stockpiled for landscape areas. Requirements for the removal of topsoil and any ground improvement will be dependent on the future geotechnical investigations of the site.
- Tyne, water and roll the areas which filing, paving or building slabs are to be placed. Proof roll in accordance with geotechnical advice.
- Placement of acceptable material from cut areas shall be placed in layers of no more than 200mm to the compaction requirements.
- Filled areas and cut areas to be overlain by buildings and pavements are to be protected to maintain constant moisture content in the soil. The protection is to remain in place until construction is complete.

6.2.13.2. Surface Water

The assessment included a review of the surface water conditions. A man-made detention basin is in the north-west corner of the site, with man-made surface water drainage channels around the perimeter of the site, connecting to the detention basin. The surrounding context includes undulating terrain and low hills, with the site cut into the southern face of a low hill. Extensive earthworks have historically occurred at the site.

Considering the site is currently unpaved, there is potential for surface water infiltration to occur at the site which may impact on the groundwater levels. However, underlying soils and rock are of low permeability and that excess surface water flow would be expected to eventuate within the on-site detention basin.

The assessment indicated that the surface water within the dam was impacted by heavy metals and microbial organisms including Faecal Coliforms and E. Coli. The surface water sample encountered heavy metal concentrations (specifically, cadmium, chromium, copper, lead, nickel, zinc and aluminium) above the site assessment criteria (**SAC**). Treatment of the surface water will be required prior to dewatering of the detention basin. Treatment may also be required prior to reuse on the site (such as for dust suppression purposes).

Mitigation Measures

To mitigate the potential impacts related to surface water, JK Environments have recommended the following:

- Additional testing of surface water is recommended to assess the quality and provide recommendations for treatment and/or reuse (such as dust suppression) during the construction works.
- A specialist contractor must be contacted to design an appropriate water treatment program to facilitate the disposal and/or reuse of the collected surface water.
- In the event unexpected conditions are encountered during construction/enabling works that may pose a contamination risk, all works should stop and an environmental consultant should be engaged to inspect the site and address the issue.

6.2.13.3. Groundwater

The Proposal includes excavation to depths of approximately 0.5m to 2m, with localised deeper excavation (up to approximately 5m). The localised deeper excavation is associated with the proposed vehicular access in the west of the site and connection to the existing roadway. Based on the groundwater monitoring data, the groundwater level varies from approximately RL79.1m to RL76.3m.

Groundwater seepage is not expected to occur, and temporary dewatering is not anticipated to be required during the proposed development. As the maximum proposed level of cut is approximately 2m, the groundwater is significantly below the proposed finished levels of the development. As such, groundwater will not be intersected by the Proposal and no water take is expected.

Mitigation Measures

To mitigate the potential impacts related to groundwater, JK Environments have recommended the following:

- In the unlikely event that dewatering of the groundwater is required, treatment of the groundwater will be necessary prior to discharge.
- Should the proposed development details change to likely intersect the groundwater table, a detailed assessment and analysis of likely groundwater inflows into excavations will need to be undertaken.
- The groundwater is saline and is non-aggressive towards buried concrete and steel. JKE has prepared a Salinity Management Plan (**SMP**) for the proposed development. Management measures outlined in the SMP are to be implemented during construction.

6.2.14. Salinity and Acid Sulfate Soils

A Dryland Salinity and Acid Sulfate Soils Assessment has been prepared by JK Environments and is provided at **Appendix NN.** A summary of the key findings is discussed below.

6.2.14.1. Saline Conditions

JKE have identified a moderate to high potential for saline conditions to be encountered during the proposed works. The investigation identified the following salinity conditions:

- The soils are classed as extremely acidic to very strongly alkaline;
- The soils are generally classed as slightly to moderately saline;
- The soils are generally sodic to highly sodic;

- The soils are generally mildly aggressive towards buried concrete. Localised occurrences of soils classed as moderately aggressive towards buried concrete were encountered in the south-west of the site;
- The soils are mildly aggressive towards buried steel;
- The groundwater is classed as saline;
- The groundwater is non-aggressive towards buried concrete; and
- The groundwater is non-aggressive towards buried steel.

Based on the results of the investigation, JKE has prepared a Salinity Management Plan (**SMP**) for the proposed development. Management measures outlined in the SMP are to be implemented during construction.

6.2.14.2. Acid Sulfate Soils

JKE have confirmed there is a very low potential for Acid Sulfate Soils (**ASS**) materials to be disturbed by the proposed works is very low. The investigation identified the following:

- The ASS risk mapping indicates that the site is located within an area of no known occurrence of ASS;
- The borehole logs for the investigation indicate the site is underlain by fill soils and/or residual soils over siltstone bedrock. ASS materials are not usually associated with residual soil profiles;
- The imported clay, siltstone and sandstone fill were sourced from approved properties in Willoughby and Merrylands. These properties were located in areas of no known ASS occurrence;
- No visible or olfactory indications of ASS were encountered during the investigation;
- The regional geological information indicates that the site is underlain by Bringelly Shale; and
- The site is located at approximately 82m to 86m AHD, with excavations to up to approximately 4-5mBGL (i.e. excavations extent to approximately 77mAHD). ASS materials are not usually associated with soil horizons above 5m AHD.

Based on their assessment, further intrusive investigation and/or an ASSMP is not considered necessary for the proposed development.

7. JUSTIFICATION OF THE PROJECT

This section of the report provides a comprehensive evaluation of the Project having regard to its economic, environmental and social impacts, including the principles of ecologically sustainable development.

It assesses the potential benefits and impacts of the proposed development, considering the interaction between the findings in the detailed assessments and the compliance of the Proposal within the relevant controls and policies.

7.1. PROJECT DESIGN

The design of the Project has been carefully considered to ensure any potential impacts of the development are minimised. The development will deliver a state-of-the-art data centre within a strategic site that can help bolster the increasing demand for cloud-based data storage in Australia.

The design of the building and layout has been carefully considered to be optimised for the site. The buildings and associated landscaping will complement the existing and future character of the area.

7.2. STRATEGIC CONTEXT

This EIS has demonstrated that the Proposal is consistent with the strategic framework and has been considered against the key statutory and non-statutory instruments applying to the site including the following:

- *Greater Sydney Region Plan – A Metropolis of Three Cities*
- *Our Greater Sydney 2056: Western City District Plan*
- *Greater Sydney Region Plan: A Metropolis of Three Cities*
- *Our Greater Sydney 2056: Western City District Plan*
- *Fairfield City 2040 Local Strategic Planning Statement*
- *GANSW Better Placed*
- *Future Transport Strategy 2056*

The Proposal is consistent with the State and local strategic planning policies. Consistency is achieved through the provision of employment, and implementation of ESD measures that contribute to create a new and leading-edge form of development, for the purposes of a data centre. The proposed development complements significant government investment in infrastructure, including the future Southern Link Road.

7.3. STATUTORY CONTEXT

The relevant State and local environmental planning instruments are listed in **Section 4** and assessed in **Appendix B**. The assessment concludes that the Proposal complies with the relevant provisions within the relevant instruments as summarised below:

- The proposed development has been assessed and designed in respect to the relevant Objects of the EP&A Act as defined in section 1.3 the Act and addressed in **Appendix B**.
- This EIS has been prepared in accordance with the SEARs as required by sections 190-192 of the EPA Regulation.
- Consideration is given to the relevant matters for consideration as required under the BC Act and the Proposal is supported by a BDAR Waiver and a relevant environmental assessment.
- This SSDA pathway has been undertaken in accordance with the Planning Systems SEPP as the proposed development is classified as SSD.
- An EPL will be required as per the requirements of Schedule 1 clause 9 of the POEO Act.
- Concurrence from TfNSW will be required as per the T&I SEPP for ‘traffic generating development’.

- The Proposal complies with all the relevant provisions under the I&E SEPP as detailed in **Appendix B.** The proposed development is consistent with the objectives of the IN1 zone.
- The proposed development has been assessed in accordance with the R&H SEPP and the development complies with the relevant clauses.
- The Proposal generally accords with the relevant provisions of the WSEA Fairfield DCP as outlined in **Appendix B**.

7.4. COMMUNITY VIEWS

Community and stakeholder engagement has been undertaken by the Applicant and Urbis in preparation of the SSDA. This included direct engagement and consultation with:

- Surrounding landowners, tenants and businesses
- RAPs as part of the ACHAR process
- Government, agency, utility services and other key stakeholders.

This engagement was consistent with the community participation objectives in the Undertaking Engagement Guidelines for State Significant Projects and complied with the community engagement requirements.

Feedback obtained from Government agencies and utility stakeholders have been incorporated into the design and assessment in the EIS. At the time of lodgement of the SSDA, no responses had been received from surrounding landowners, tenants and businesses from the community engagement.

In accordance with the EPA Regulation, the EIS will be placed on formal public exhibition once DPHI 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.

7.5. LIKELY IMPACTS OF THE PROPOSAL

The proposed development has been assessed considering the potential environmental, economic and social impacts as outlined below:

- **Natural Environment**: The Proposal addresses the principles of ecologically sustainable development **(ESD**) in accordance with the requirements at section 194 of the EPA Regulation and as outlined below:
  - Precautionary principle: The precautionary principle relates to uncertainty around potential environmental impacts and where a threat of serious or irreversible environmental damage exists, lack of scientific certainty should not be a reason for preventing measures to prevent environmental degradation.

    This EIS has not identified any serious threats of environmental damage that cannot be adequately mitigated or addressed based on current scientific standards and best practices. In this regard, the proposed development can be considered generally consistent with the precautionary principle.
  - Intergenerational equity: The needs of future generations are considered in decision making and that environmental values are maintained or improved for the benefit of future generations by:
    - Providing new local employment opportunities during the construction and operational phases.
    - Delivering a development that will assist in providing key technology infrastructure that will ensure the economic vitality of a key employment generating corridor and area of Sydney.
  - Conservation of biological diversity and ecological integrity: As demonstrated in **Section 6** and throughout the EIS, the proposed development will not result in any significant impacts on biological and ecological integrity of surrounding land, subject to the implementation of mitigation measures. The planting of native vegetation will facilitate a development that will conserve and support local ecological diversity and integrity.
  - Improved valuation, pricing and incentive mechanisms: This requires the holistic consideration of environmental resources that may be affected as a result of the development including air, water and the biological realm. It places a high importance on the economic cost to environmental impacts and places a value on waste generation and environmental degradation.

The development will not have any unacceptable impacts on the natural environment in relation to air quality, water quality or waste management. The effects of the development will be acceptable and managed accordingly by the proposed mitigation measures as required.

Overall, the Proposal will not have any unacceptable impacts on the natural environment. The ESD report (**Appendix N**) identifies sustainability measures including energy savings, energy efficiency and waste minimisation.

- **Built Environment**: The Proposal has been assessed in relation to the following key built environment impacts:
  - Built form: The Proposal is compatible with the existing and planned future context and provides a scale that is appropriate for the site and the current planning controls. The design of the development reflects a well-articulated design which provides high amenity, and the delivery of significant public domain improvements.
  - Trees and Landscaping: Minimal tree removal is proposed. The Proposal includes new tree plantings to be provided within the site and along the street frontages of Burley Road and Johnston Crescent as highlighted in **Section 6.1.2**.
  - Visual Impacts: The Proposal is visually compatible with the desired future character and land uses within the locality. The visual impacts range from nil to medium-low. The Proposal does not impact on views to any heritage items or areas of unique scenic quality. The Proposal can therefore be supported on visual impact grounds as highlighted in **Section 0.**
  - Traffic: The Proposal is Projected to generate up to 260 peak hour vehicle trips in the morning and afternoon peak hours. The TIA concludes the surrounding intersections are expected to continue to operate under satisfactory condition as outlined in **Section 6.1.5.**
  - Noise and Vibration: The construction and operational noise impacts are generally below the relevant noise criteria. Any exceedances will be temporary during construction and appropriate mitigation measures have been recommended to manage construction noise. Overall, the Proposal has been assessed as appropriate from an acoustic perspective as outlined in **Section 6.1.4**
  - Air Quality: The construction and operational air quality associated with the development is generally below the relevant criteria. Overall, the Proposal has been assessed as being appropriate from an air quality perspective as outlined in **Section 6.1.6.**
- **Social**: The Proposal will have the following positive social impacts:
  - The Proposal includes amenities and design outcomes for a healthy work environment, including landscaping treatments, onsite amenity, natural light and ventilation etc.
  - The Proposal will contribute to the delivery of economic opportunities for the Western Sydney community.
  - The Proposal will provide employment and training opportunities during construction and operation.
  - The Proposal will deliver improvements to the surrounding public domain and streetscape.
- **Economic**: The Proposal will have positive economic impacts as follows:
  - It will facilitate the orderly and economic development of a highly strategic site.
  - The Proposal will provide employment opportunities during both the construction and operational phases of the development.
  - The Proposal will meet the growing demand for data storage space in a highly suitable location.

The potential impacts can be mitigated, minimised or managed through the measures discussed in detail within **Section 6** and as summarised in **Appendix C** to this EIS.

7.6. SUITABILITY OF THE SITE

The site is considered highly suitable for the proposed development for the following reasons:

- The Proposal is consistent with the IN1 zone objectives, is permitted with consent and satisfactorily addresses the relevant provisions in the I&E SEPP and the WSEA Fairfield DCP.

- The site is a large, consolidated land holding which is vacant and has been cleared of all structures and vegetation to accommodate future development.
- There are no significant environment constraints that would limit the Project being developed at the site.
- 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.
- The proposed development will optimise use of a vacant site and deliver strategic objectives located within a developing employment precinct with high amenity and employment outcomes and support business activity that occurs in other nearby established and emerging employment-generating precincts.
- The site is highly accessible to the regional road network and all necessary infrastructure can be accommodated, allowing operations to commence at no cost to Government.
- Given the proximity to residential receivers and the benign nature pertaining to the data centre operations, the site is highly suitable as opposed to traditional industrial land uses, i.e. warehousing and distribution, which would emit much greater noise and traffic output than the Proposal.

7.7. PUBLIC INTEREST

The proposed development is considered in the public interest for the following reasons:

- The Proposal is consistent with relevant State and local strategic plans and complies with the relevant State and local planning controls including the relevant provisions in the I&E SEPP and WSEA Fairfield DCP.
- Subject to the implementation of the recommended mitigation measures, no adverse social or environmental impacts result from the Proposal in terms of traffic, noise and vibration, air quality or views during construction and operation of the development.
- The Proposal directly contributes to the important role that the WSEA plays as an employment generating precinct within the broader Western Parkland City, as identified by the Greater Sydney Commission.
- The Proposal provides critical infrastructure which will support the growth for the digital economy within NSW and more broadly.
- The Proposal will protect and enhance employment lands and increase job numbers.
- No major issues relating to the construction and operation of the development were raised during the pre-lodgement consultation with the local community, Council, Government and agency stakeholders.
- The site will facilitate the orderly and economic use and development of the land.

Having considered all relevant matters, we conclude that the proposed development is appropriate for the site and approval is recommended, subject to appropriate conditions of consent.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

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