ARUP

EIS

Project Echidna

Non-technical summary

Reference: SSD-47320208

Final | October 2022

Job number 288255-02

Arup Australia Pty Ltd | ABN 76 625 912 665

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Non-technical summary

A leading global company is looking to build a second data centre in Eastern Creek on the corner of Eastern Creek Drive and Old Wallgrove Road. If approved, it will support the growing need for cloud data storage in Sydney and our ongoing transition to a digital economy.

The proposal was first considered in 2018, with the developer looking into various locations to build data centres in Western Sydney. The decision to choose the intended site was based on:

- Its industrial zoning, which reflects the area's reduced environmental sensitivity and its suitability to support a data centre
- There being enough space to build two centres next to each other, which means they could share common infrastructure
- Its location near major transport links, which helps support development.

Since buying the site in 2018, Blacktown City Council gave the developer consent to carry out earthworks, install various services and utilities, and build the first data centre.

There were certain factors at the time that meant the developer did not apply to build the second centre. These were resolved earlier this year and it is now looking to secure consent.

The planning rules were different when the developer applied to build the first data centre. The changes mean the State Government would now give consent instead of the Council. The Council still has a say in whether the developer should build the second centre, and any specific terms and conditions associated with this.

Gaining consent

The State's laws define how developers can secure consent. They involve a series of steps under a defined process. This document covers part of the process. It is called an environmental impact statement, or EIS. It documents the outcome of identifying the environmental, social, and economic impacts of the centre, and the overall impact of both data centres operating next to each other.

The EIS assessed a set of specific requirements covering various issues and environmental topics set by the State Government. It provides information on the identified impacts and the ways in which the developer intends to reduce them, called mitigation. It also identifies the actions the developer would take to monitor and manage their effectiveness and how it would deal with any unexpected outcome.

The law also requires development to:

- Be permitted in NSW on a suitable site
- Have a defined planning approval pathway
- Be consistent with detailed planning controls and design guidelines
- Be in the public interest, while accounting for any comments and issues raised
- Be consistent with wider requirements of the State's planning laws.

These issues were also considered in the EIS, with highlights covered in this summary.

The site

The data centre would be built on a 55,800 m^2 lot on the corner of Eastern Creek Drive and Old Wallgrove Road. The site offers a street frontage of about 300 metres along Eastern Creek Drive and 180 metres along Old Wallgrove Road. The centre would only occupy about 9,225 m^2 of the Site's southwestern corner, or about 16 percent.

Eastern Creek Drive provides site access via two entry points built under the Council consent.

The area has long been used for agriculture. It was largely undeveloped until about 2007, after which, the first industrial and commercial developments were built, along with new roads. The area immediately surrounding the site started being developed from 2017. Work onsite started in 2019.

As shown below, the Site is located to the west of the M7 Motorway.

Site character

The developer recently carried out earthworks onsite to support building the data centre. The level of the site was also changed to improve stormwater runoff and utilities were installed. There is no vegetation as a result. There are trees around the site, however they would not be removed. The site is not located in a flood or bushfire risk area.

There is commercial and industrial development locally, with construction taking place on certain lots and companies such as Coles, Fulton Hogan, and Ricoh in the area.

The nearest residents live over 1.5 kilometres away in Horsley Park and Minchinbury.

Strategic support for the proposal

As noted, the data centre supports a transition to a digital economy. This means it is supported by the following policies:

- The *Greater Sydney Region Plan* covers the whole of Sydney, and it promotes the use of vacant land to generate income and provide critical infrastructure to support the growing demand for data storage.
- The *Central City District Plan* focusses on western Sydney and aims to attract innovation into industrial lands. Its Planning Priorities promote the need for digital technology to support a knowledge-intensive economy.
- The *Blacktown Local Strategic Planning Statement* focusses on the local government area. It recognises the need for high-end technology jobs and initiatives to promote employment diversity and economic development, things that the data centre would help deliver.

The *Eastern Creek Precinct Plan* focuses on the immediate area where the site is located. It defines detailed planning controls and design guidelines. The proposal has been designed to these, as detailed in the EIS.

Selecting the preferred proposal

After selecting the site, the developer looked at the best layout based on the landform and features, site access, and the existing infrastructure and character of the surrounding area. It chose a layout that maximises landscape, access, and parking opportunities.

One key issue with data centres is that they need to stay online even when there is a power cut. This is because centres supply data that are used by critical services, industry, and business.

The developer looked at options and concluded the best solution would be to install two power lines to the site. These would be supplied to a substation, which would be built under a separate consent. While this would reduce the risk of the site going offline to around 0.05 percent, it is not fail safe.

The solution was to identify a power source that could be operated and controlled onsite, independent of the grid. Options were considered. They included battery storage or renewable power sources. However, the space needed to provide these is way beyond the available land. Also, despite their environmental benefits, supply cannot be guaranteed. Therefore, the decision was taken to install back-up diesel generators, as these offer the only current practical cost-effective solution that provides guaranteed power quickly. Despite this not meeting the objective of being a minimal impact solution, it would only ever be used in the event of two supplies failing, which would be extremely rare. The decision was also taken to purchase all power from a green tariff.

The data centre

The planned data centre would comprise a single building, which would be about 25 metres high, 135 metres long and 70 metres wide. It would be supported on a piled slab foundation.

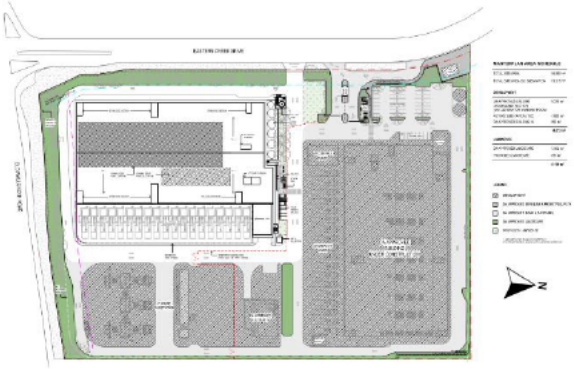
The building would be split across two data floors. IT equipment would be installed on each floor, comprising servers, racks, storage devices,

and other networking equipment. Mechanical, electrical, and cooling equipment would also be installed in the data hall to power and cool the IT equipment.

The other main things built inside the data centre would be an administration area and loading dock. The administration area would include offices, a kitchen, end-of-trip facilities, and toilets. The loading dock would allow larger equipment such as servers and racks to be offloaded and removed.

The back-up generators would be installed in noise-insulated enclosures on a hardstand area (yard) to the west of the main building. The diesel needed to power the generators would be stored in reinforced tanks nearby.

The planned site layout is shown below.



The administration area and loading dock would be in the north-east corner.

The following table provides a fuller picture of what would be built onsite, including some basic technical details.

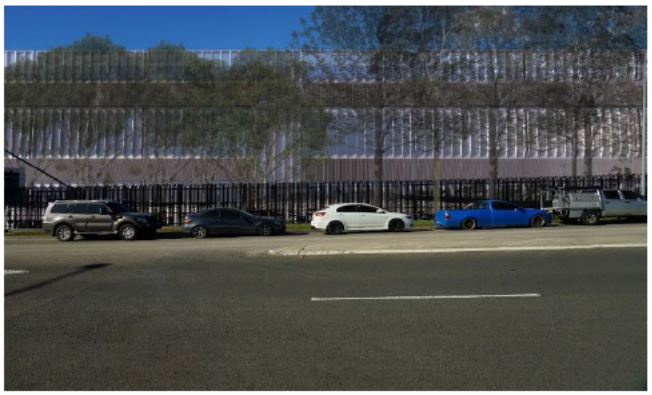
Item	Description
Overview	The centre would comprise data halls, mechanical and electrical equipment rooms, offices, a secure entry, a loading dock, and other ancillary spaces. Rooftop mechanical equipment, external backup generators, and water storage tanks would also support the data centre's function.
Physical layout and design	*Overall dimensions* | A two-storey structure would be built along with associated parking, loading, and landscaping areas, reaching approximately 25 metres above ground. It would be about 175 metres long and about 70 metres wide. *The design response* | has been to respect the area's modern industrial setting, on the traditional lands of the Dharug People, and within the context of the Cumberland Plain, and its characteristic woodland. The response also respects the wider themes across the area, while complementing the second data centre. *Internal fit-out* | would be carried out over time as demand increases. It would comprise servers, racks, storage devices, and other networking equipment. This would be supplemented with additional electrical and cooling equipment. *Vegetation removal* | No tree removal is needed and there is no existing vegetation onsite. *Landscaping* | Mature local trees would be planted at intervals to improve aesthetics and amenity and provide passive cooling. The composition would complement the native Cumberland Plain Woodland and other species on Blacktown City Council's planting list.
Site coverage	The Proposal has a total coverage of approximately 9,225 m^2 comprising two data floors.
Power, back-up power supply, and cooling	*Primary mains power* | would be supplied from the Endeavour Energy network via a private onsite substation which will also support the second data centre. Two feed lines would be provided to the substation to offer redundancy. *Back-up power* would be provided by 19 generators, which would be individually tested for several minutes every fortnight. The testing would total about 162 hours every year across both data centres. The generators would only be used if there was a mains outage. *Battery storage* | Distributed lithium-ion batteries would be installed in the data halls to provide short term "ride-through" power to the IT equipment while the back-up generators start. Small uninterruptible power systems would also provide battery backup to various other critical systems. *Fuel storage* | Approximately 400,000 litres of diesel fuel would be stored onsite

Item	Description
	to power the back-up generators. The storage tanks would be topped-up roughly every six months to replace the diesel used in testing. *Cooling* | would be provided by fresh air in the winter and an evaporative system in the summer.
Access, circulation, and parking	*Access* | would be provided via Eastern Creek Drive and an internal road network being built under the previous consent. *Circulation* | The roads have been built and designed to separate heavy vehicles, light vehicles, and pedestrians. They have been designed to allow heavy vehicles to safely move (circulate) around the site without the need to reverse. *Parking* | would be shared across both data centres. The allocation to this data centre would comprise: 66 shared regular parking spaces and four mobility spaces. Six bicycle parking spaces would be shared across both data centres.
Other infrastructure	The utilities required to service the site have been installed already. This includes the necessary stormwater, wastewater, telecommunications, and electricity infrastructure. Local connections to these are still needed.
Site preparation works	*Earthworks* | There would be some minor localised earthworks to create the final levels, landscaping profiles, and install the local utility connections. The total excavation volume is anticipated to be about 2,200 m^3 and the needed fill would be about 18,900 m^3.
Land uses and activities	The only activity taking place onsite would be the operation of the data centre. There would be occasional maintenance and delivery vehicle movements to support this, supplemented by the workforce arriving and leaving at the start and end of each shift. Most operations would occur during the day, however, given the need to operate continuously, essential site and security staff would be working at night.
Employment	About 100 people would be employed to build the centre and about 50 to operate it.

The following photos show what the centre would look like once built.

From Eastern Creek Drive facing East

From Eastern Creek Drive facing north



From Eastern Creek Drive facing East

From Old Wallgrove Road facing East

From Old Wallgrove Road facing West

Building the data centre

It would take about 18 months to build the centre, with construction expected to start in early 2023. This would allow the IT equipment to be installed on one floor. It would then take about another six months to fully fit out the centre. However, this would only happen as customer demand increases. This means there may be a gap between initial construction and full fit out.

There would be five activities involved in building the centre:

- Site establishment and final profiling
- Foundation work and local utility connections
- Pavement works and external hardstand areas
- Building construction
- Plant installation, connection, commissioning, and testing.

The highest level of activity onsite would be when the main building is being constructed.

Construction work would take place during the week and on Saturday mornings. There is no plan to work over the rest of the weekend, in the evening, or at night. That said, large equipment may need delivering at night when the roads are less busy.

There would be about 50 people needed to build the data centre, but there could be up to 100 onsite during the busiest periods.

The centre would be built using equipment and machinery that is typically used on construction sites. Materials would be supplied locally. The specialist IT equipment is more likely to be supplied from overseas.

A contained area would be identified onsite to store and service equipment and machinery, along with the goods and materials needed to build the centre.

Construction and worker traffic would arrive and leave site every day. Most of this traffic would come from the direction of the M4 and M7 Motorways.

Design flexibility

There are elements of the data centre that are not finalised. This means there is still some flexibility needed.

- The centre's appearance and design would be finalised in consultation with the area's Traditional Custodians and other stakeholders.
- Details of the final mix of plants and trees used onsite will depend on supplies and other factors.
- While the back-up generator testing is scheduled during the day, the developer is considering doing some at night if it does not cause too much noise. The decision whether to do this depends on various factors that are not currently known. The developer will confirm this in the next few months and assess if the relevant noise limits could be met. It they can, this would be documented before the construction certificate is secured.
- The contractor will finalise the construction methods and program, as they may decide to build the centre in a different way. So, while the method described above is based on how data centres are typically built around the world, this would be finalised after the contractor's engagement. This means the EIS has assessed the impact of a reasonable worst-case construction method and program.
- As noted, there may be occasions where it would be safer and easier to deliver big equipment at night. This would depend on final design specifications and delivery schedules. It would also follow consultation with Transport for NSW, Council, and NSW Police. This would be confirmed in a few months, and it would be coordinated under a specific Traffic Management Plan.

People's views

It was important to understand what people thought about the idea of building a data centre. It was also important to hear ideas to make the centre better for the people who work in the area. Therefore, the developer sent an invite to people locally to attend an information and feedback session. Only one person attended, who simply

asked for more information about what the data centre would look like as there was another centre being built in the area.

It was also important to get ideas from the Traditional Custodians about how the data centre could Connect with Country. The two people who attended a session offered various suggestions. They included using native planting around the centre, naming the centre, installing an Acknowledgement of Country onsite, and performing smoking ceremonies and traditional dances as construction starts and once the centre opens.

The Traditional Custodians also offered some other suggestions on employing First Nation staff from the area and using First Nation owned businesses. They also suggested the developer could help employees understand and respect the indigenous culture of the area. The developer has committed to these suggestions.

Finally, the developer also wrote to several Government agencies asking for information to help design the centre and prepare the EIS.

The centre's impacts

The EIS investigated the impact of 13 key issues associated with building and operating the data centre. They were:

- Visual
- Traffic, transport, and accessibility
- Sustainable development
- Biodiversity
- Air quality
- Noise and vibration
- Ground and water conditions
- Stormwater, wastewater, and flooding
- Hazards and risks
- Waste management
- Aboriginal cultural heritage
- Social impacts
- Infrastructure requirements and utilities.

There were also three other issues that were investigated, contaminated land, European heritage, and bushfire risk. However, the site's location and its recent clearing meant there was no potential for these issues to affect or be impacted by the data centre.

Technical studies were carried out to investigate the 13 remaining issues. The following summarises the scale and nature of the identified impacts and benefits that would occur once the proposed mitigation is introduced.

Environmental (construction) | The planned method and activities to build the data centre are typical to most construction work that takes place in Australia. While they present various inherent water, noise, and air pollution risks, there are widespread measures that can be used to avoid any impacts, providing they are effectively implemented. The same is true of erosion and sedimentation risks. Stormwater, wastewater, and waste can also be easily managed during construction.

Environmental (operation) | While the data centre equipment would generate noise and air emissions, these can be managed using effective treatments. The stormwater would also be treated sufficiently to meet the water quality targets set locally.

While batteries and diesel would be stored onsite, both of which can cause a fire, they can be safely housed to avoid any risk. Licenced and skilled contractors would be used to manage the waste and refuel the diesel generators. The site equipment would also be regularly serviced and maintained to reduce the chance of environmental hazards and risks.

Social (construction) | People's amenity working in the area would be affected for periods over about 18-months when building the centre. Importantly, the impacts would be insufficient to affect people's health and wellbeing or way of life.

Critically, the site's location away from residents, means any wider community and accessibility impacts would be avoided, while the local roads and entrance have been designed to cope with the volumes of site-generated traffic.

A key opportunity is the ability to employ around 100 people from the community as there is the need for machinery operators, technicians, and labourers.

Social (operation) | As noted above, the centre would help provide increased data security and reliability for people who live, work, and visit Sydney. The centre's design also promotes staff safety through installing security cameras and lighting, separate pedestrian routes, and a controlled site access. It also includes sufficient parking and onsite facilities to take the pressure off the surrounding area.

Another feature is the design's consistency with the adjacent data centre. This means the centre should fit-in with the surrounding character of the area. There are also a series of measures that would be implemented to help improve the centre's sustainability.

Economic | The data centre offers a series of benefits.

- It would help support the area's growth and development by providing data resilience.
- It offers the ability to build two data centres next to one another. This means they can share common infrastructure. This would reduce the amount of materials and resources needed to build the two centres separately.
- Building the site near major transport links including roads, cycleways, and public transport routes would make it easier for people to travel to and from work via alternative modes. This may attract people to work at the centre who do not own a car.
- The site would offer longer-term employment for construction staff as they could switch to work on the second centre once the first one is built.
- The centre would help promote innovation and stimulate economic investment through elevating productivity within the region.

Building both data centres | The overlapping construction and operation of the two data centres and substation means the people working locally may experience construction impacts for longer than 18-months overall. There could also be occasions where the overlapping construction could generate more noise, air emissions, stormwater, wastewater, and traffic collectively. However, after assessing this, it was concluded that the combined impact could be adequately mitigated to meet various environmental goals. The assessment also confirmed that the infrastructure and utilities have been designed to support the combined demand and impact of both data centres.

Monitoring and management

It is important to monitor the effectiveness of the measures that would be introduced to avoid and minimise the data centre's impacts. These would be used to help confirm where the developer needs to change what it is doing onsite. The following measures would be used to monitor compliance. They would be delivered under separate umbrella construction and operational environmental management plans.

Measure	Purpose
Urban Design and Landscape Management Plan.	Including monitoring and managing the effectiveness of the landscaped or rehabilitated areas.
Construction Pedestrian and Traffic Management Plan	Including a program to monitor the effectiveness of the pedestrian and construction traffic measures.
Sustainable development	Including measures to monitor and manage water and energy use.
Dust and Air Quality Management Plan	Including monitoring the success of the measures introduced to prevent dust generation and propagation.
Biosecurity Management Plan	Including monitoring the success of the controls to dispose of high threat and declared priority weeds and manage pests and pathogens.
Back-up Generator Incident Report	Preparing a report to confirm and demonstrate environmental goals were not exceeded after using the back-up generators in an emergency.
Construction Noise and Vibration Management Plan	Defining when monitoring is needed to confirm noise management level compliance.
If there is an unexpected requirement to work in the evening, at night, or over the weekend.	Ensuring that such work will be managed and monitored in accordance with environmental goals.
If safe working distances cannot be achieved to avoid potential vibration impacts.	Introducing additional mitigation measures, such as vibration monitoring.
Noise Compliance Verification Report	Carrying out noise compliance monitoring before the site's full operation to validate noise impacts.
If a noise complaint is received.	Identifying where additional noise monitoring is needed to investigate a valid complaint.
Construction Soil and Water Management Plan	Including monitoring the success of the erosion and sediment control measures.
Construction Erosion and Sediment Control Plan	Including monitoring potential high-risk events (such as storms) and the effectiveness of specific controls and follow-up measures.
Emergency Spill Plan	Including monitoring the availability, adoption, and awareness in the use of adequate

Measure	Purpose
	emergency and spill control measures.
To maintain site-safety and environmental protection in bad weather	Involving the daily monitoring of weather reports to allow the site to be safely managed.
Fire Safety Study	Confirming the final fire and life safety measures used to protect the back-up generators and batteries.
Waste Management Plan	Including a process for auditing, monitoring, and reporting on the waste volumes, and diversion and resource recovery targets.
An Unexpected Heritage Finds Protocol	Monitoring for unexpected archaeological items and objects, stopping work, and taking corrective actions to avoid impacts.
Construction Delivery and Staging Plan	Finalising the construction delivery plan and setting out the expected utility demand. Also including any unusual or atypical requirements when carrying out high-demand activities and the contingency measures to deal with this.
Infrastructure Delivery, Management and Staging Plan	Finalising the infrastructure staging strategy to understand if the site's utility demand can be supported, and confirming maintenance, testing, and servicing requirements and responsibilities.
Communication Plan	Preparing, implementing, and monitoring measures to provide timely and accurate information to the community and the means to receive and handle complaints.
Complaints Register	Maintaining and monitoring the implementation of a complaints register to ensure corrective action is taken and effective.

Conclusion

The potential impacts have been largely avoided, otherwise minimised in designing the data centre and preparing the environmental assessment. The preferred proposal meets its objectives, and is supported under regional, district, and local policy.

There would still be some temporary and permanent impacts that could not be fully avoided. Measures detailed in the EIS would be used to mitigate or minimise these to an acceptable level, with additional commitments made to manage, monitor, and communicate performance and make changes if needed. Overall, any impacts are considered acceptable when viewed alongside the data centre's benefits.

How to comment

The State Government will exhibit the EIS for a fixed period, providing an opportunity to review the proposal and submit comments. The developer will then prepare a report that responds to these. The State Government will publish this report online before assessing the application and determining if it should be given consent. The Government will also attach conditions to the consent, which the developer must fulfil either before or during construction or once the centre is open.

Declaration by a relevant person

This environmental impact statement (EIS) has been prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* and in accordance with the requirements under Division 5, Part 8 of the Environmental Planning and Assessment Regulation 2021.

It is in the form required under section 191 of the Regulation and complies with the industry-specific Secretary's environmental assessment requirements for data storage centres (version 1.3, 1 April 2022, Department of Planning and Environment | DPE). The content of the EIS is consistent with section 192 of the Regulation and the State Significant Guidelines for Preparing an Environmental Impact Statement (DPE, December 2021).

As a Registered Environmental Assessment Practitioner (Registration Number | 001), pursuant to section 190(4) of the Environmental Planning and Assessment Regulation 2021, I certify that this EIS includes the information required under the Registered Environmental Assessment Practitioner Guidelines (DPE, 2021), pursuant to section 190(3d) of the above Regulation. Specifically, I certify that the EIS:

- Has been prepared:
  - In accordance with the Environmental Planning and Assessment Regulation 2021
  - Having regard to the Department's State Significant Development Guidelines Preparing an Environmental Impact Statement (DPE, 2021)
- Addresses the industry-specific environmental assessment requirements for data storage centres (version 1.3)
- Identifies and addresses the relevant statutory requirements for the proposal, including any relevant matters for consideration in environmental planning instruments
- Contains:
  - No misleading or false information
  - All available information that is relevant to the environmental assessment of the development
  - A simple and easy to understand summary of the proposal as a whole, having regard to its economic, environmental, and social impacts and the principles of ecologically sustainable development
  - An accurate summary of the findings of any community engagement
  - An accurate summary of the detailed technical assessment of the impacts of the proposal as a whole.

This declaration was made on 8 September 2022 on Gadigal Country

Chris Fay

Arup Australia Pty Ltd
REAP | 80001, CenvP-IA, C.WEM, C.SocENV, MSc. (dist), BSc. (hons)
M.EIANZ, M.CIWEM, M.SocENV

Name	Paul Hajjar	Francisco Medina Avina
Qualifications	Bachelor of Chemical Engineering (Honours)	Master of Environmental Planning
Position	Consultant	Senior consultant
Address	Arup Australia Pty Ltd | Level 5, 151 Clarence Street, Sydney, NSW, 2000	
In respect of	Project Echidna Environmental Impact Statement	
Proponent name	Confidential	
Proponent address	c/o Level 5, 151 Clarence Street, Sydney, NSW, 2000	
Proposal	Proposal | construction, operation, and maintenance of a two-storey data centre comprising data halls, mechanical and electrical equipment rooms, offices, other ancillary support spaces, and external/rooftop mechanical and electrical equipment. The data centre would have a total power demand of 35.2 megawatts when fully operational.	
Land to be developed	10 Eastern Creek Drive, Eastern Creek NSW, legally described as Lot 4001, DP 1243178.	
Environmental impact statement	An Environmental Impact Statement is attached that assesses all matters specified in the industry-specific Secretary's environmental assessment requirements published 1 April 2022, in accordance with Division 5.1 of the *Environmental Planning and Assessment Act 1979,* other relevant environmental planning instruments, legislation, and regulation.	
Date	7 October 2022	

ARUP

EIS

Project Echidna

Glossary

Reference: SSD - 47320208

Revision 1 | October 2022

Job number 288255-02

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1. Glossary

Term	Definition
ACHAR	Aboriginal Cultural Heritage Assessment Report
ADGC	Australian Dangerous Goods Code
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal heritage impact permit
BCD	Biodiversity and Conservation Division
BDAR	Biodiversity Development Assessment Report
Blacktown LSPS	Blacktown Local Strategic Planning Statement 2020
BoM	Bureau of Meteorology
BYDA	Before You Dig Australia
CEMP	Construction Environmental Management Plan
CO	Carbon monoxide
Concept Design Approval	A previous DA (SPP-19-00013) was approved on site for the industrial development of a Detailed Design Stage 1 and a Concept Design Approval. The Concept Design Approval included an outline for Stage 2, which is the subject site.
DA	Development Application
DCP	Development Control Plan
DG	Dangerous goods
DPE	Department of Planning and Environment
DPIE	Department of Planning, Industry and Environment
Eastern Creek Precinct Plan	Eastern Creek Precinct Plan (Stage 3) 2005
ECG	Environment and Heritage Group
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPI	Environmental planning instrument
EPIs	Environmental planning instruments
ESD	Ecologically Sustainable Development
GFA	Gross floor area
HC	Hydrocarbon

Term	Definition
Heritage Act	Heritage Act 1977
IN1	General industrial zone
IPA2	International Association for Public Participation
IT	Information Technology
kL	kilolitre
km	Kilometre
LEED	Leadership in Energy and Environmental Design
LEPs	Local Environmental Plans
LGA	Local government area
m	metre
MW	Mega Watts
NABERS	National Australian Built Environment Rating System
NO_x	Nitrogen oxide
NPI	National Pollution Inventory
NPW Act	National Park and Wildlife Act 1974
NPW Regulation	National Parks and Wildlife Regulation 2019
NSW	New South Wales
OWMP	Operational Waste Management Plan
PAH	Polycyclic aromatic hydrocarbon
PHA	Preliminary Hazards Assessment
PM	Particulate Matter
POEO Act	Protection of Environment Operations Act 1997
Proposal area	The building has a total area of approximately 8,996 square metres comprising two data floors (Ground Floor + Level 1).
RtS	Response to submissions report
SEARS	Secretary's Environmental Assessment Requirements
SEE	Statement of Environmental Effects
SEPP	State Environmental Planning Policy
SHI	State Heritage Inventory
SIA	Social impact assessment
SO_2	Sulfur dioxide
SSD	State significant development

Term	Definition
The Central City District Plan	Our Greater Sydney 2056: Central City District Plan
the Minister	NSW Minister for Planning
The Plan	The Greater Sydney Region Plan, A Metropolis of Three Cities
The Proposal	Construction of a two-storey data centre comprising of offices, support spaces, plant equipment rooms, electricity rooms, mechanical galleries and data halls.
The Site	The proposal is located at 10 Eastern Creek Drive, Eastern Creek NSW, legally described as Lot 4001, DP 1243178. The site is situated within the Blacktown Local Government Area.
the Strategy	The Future Transport Strategy 2056
VOC	Volatile organic compound
WHS	Work health and safety
WMP	Waste Management Plan
WSEA	Western Sydney Employment Area

ARUP

EIS

Project Echidna

Chapter 1 | introduction

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Figures

1. Introduction

This Chapter sets the context for the detailed assessment of a proposed data centre at Eastern Creek.

1.1 Purpose of this report

This environmental impact statement (EIS) has been prepared in accordance with the *Environmental Planning and Assessment Act 1979* (EP&A Act) to address the relevant provisions of Section 190 to Section 193 of the Environmental Planning and Assessment Regulation (EP&A Regulation 2021). It also responds to both the industry specific Secretary's Environmental Assessment Requirements (SEARs) for data storage centres as issued by the NSW Department of Planning and Environment (DPE) in August 2022 (SSD-47320208) and the State Significant Development Guidelines – Preparing an Environmental Impact Statement (DPE, 2021).

Table 1-1 provides the Applicant's details.

Table 1-1: Applicant Details

Descriptor	Proponent Details
Full Name(s)	Arup Australia Pty Ltd
Postal Address	Level 5, 151 Clarence Street, Sydney, NSW 2000
ABN	76 625 912 665

This EIS presents an assessment of all potential environmental impacts associated with the proposed construction and operation of a data centre in Eastern Creek (Project Echidna).

This is in accordance with Division 5.1 of the EP&A Act. The community, Government agencies and other interested parties will be provided with the opportunity to comment on the Proposal through public exhibition of the EIS. Feedback will be considered, and responses to raised comments will be provided through the preparation of a Response to Submissions Report. If the comments require any adjustments, refinements, or amendments to the Proposal these would be clarified in the Response to Submissions Report. Chapter 4 provides further detail regarding the assessment process.

The EIS has been structured as follows.

Introduction | Sets the context for the detailed assessment of the Proposal.

The Chapter provides a simple description of the Proposal and its objectives, need, benefits, and capital investment value. It briefly describes the background to the Proposal and the strategies taken to avoid, minimise, or offset impacts. It also describes any related development and why the data centre would be built without the need for voluntary or negotiated agreements or benefit-sharing schemes.

Strategic context | Identifies the key strategic issues that are relevant to the assessment of the Proposal.

The Chapter justifies how the Proposal is strategically supported under Government policies and plans. It describes the key features of the Site and surrounding area that could affect, or be affected by, the Proposal and whether there is the potential to generate cumulative impacts in combination with other developments. Finally, the Chapter describes the feasible alternatives and options that were considered and rejected.

Proposal description | Provides a comprehensive and consolidated description of the Proposal that is the subject of the development application.

The Chapter provides an overview and description of the built form. It describes the planned construction methods and operational procedures. It also outlines those elements that remain flexible and how these have been assessed in the EIS under a worst-case scenario.

Statutory context | Identifies the relevant statutory requirements that the Proposal would be subject to.

The Chapter summarises relevant Commonwealth and State laws, planning instruments, and policies.

Community engagement | Summarises the findings of the consultation carried out when preparing the EIS and planned future engagement.

The Chapter describes the public, stakeholder and Government agency consultation that has been carried out to date and how feedback has influenced the Proposal. It also describes how consultation and participation would continue to have an influence in the future and how complaints and feedback would be managed and actioned going forward.

Assessment of environmental impacts | Provides a detailed summary of the results of the assessment of potential impacts.

The Chapter describes the existing environmental values onsite and locally. It then focusses on the key environmental impacts that are predicted to occur. It describes the measures that would be used to avoid, minimise, or offset these along with their effectiveness. The Chapter also describes the monitoring and additional assessment that would be carried out to verify and validate the uncertainty surrounding elements of the impact assessment.

Justification | Provides a justification and evaluation of the Proposal as a whole.

The Chapter considers if the economic, environmental, and social benefits outweigh its impacts in the short and long-term accounting for the principles of ecologically sustainable development.

References | Provides a list of the documents and reports referenced in the EIS.

The main EIS is supported by 24 Appendices as listed in Table 1-2.

Table 1-2: Supporting appendices

Appendix	Item
Appendix A	SEARs compliance table
Appendix B	Architectural drawings
Appendix C	Statutory and regulatory compliance table
Appendix D	Survey plan
Appendix E	Summary of management and mitigation measures
Appendix F	Biodiversity development assessment report waiver
Appendix G	Aboriginal cultural heritage assessment report consultation letter
Appendix H	Noise and vibration assessment
Appendix I	Traffic and transport impact assessment
Appendix J	Air quality technical report
Appendix K	Geotechnical desktop study
Appendix L	Resilience and hazards SEPP screening
Appendix M	Social impact assessment
Appendix N	Engagement report
Appendix O	Ecologically sustainable design report
Appendix P	Waste technical report
Appendix Q	Stormwater and flooding report
Appendix R	Infrastructure requirements report
Appendix S	Landscape plan
Appendix T	Cost summary report
Appendix U	Australian Building Codes compliance report
Appendix V	Design report

Appendix	Item
Appendix W	Accessibility report
Appendix X	Visual Impact assessment

1.2 Proposal overview

Table 1-3 provides a simple overview of the Proposal.

Table 1-3 Proposal overview

Term	Definition
The Proposal	Construction of a two-storey data centre comprising data halls, mechanical and electrical equipment rooms, offices, other ancillary support spaces, and external/rooftop mechanical and electrical equipment. The data centre would have a total power demand of 35.2 megawatts when fully operational.
Proposal site coverage	The building has a total footprint of about 9,225 square metres comprising two data floors (Ground Floor + Level 1). The building would occupy about 16 percent of the Lot.
The Site	The Proposal is located at 10 Eastern Creek Drive, Eastern Creek NSW, legally described as Lot 4001, DP 1243178. The Site is situated within the Blacktown local government area (LGA). It is on the corner of Eastern Creek Drive and Old Wallgrove Road (see Figure 1-3).
Concept design approval	A previous development application (SPP-19-00013) approved the concept of building two data centres, one on the Site and one on the adjacent Lot. It also approved a series of enabling works including earthworks. Further details are provided below.

1.3 Project background and history

The proposal to build a data centre on the Site was first conceived in 2018. This resulted in the Proponent applying to Blacktown City Council to sub-divide the land and carry out earthworks. The application also covered the concept of building two adjacent data centres in two stages and a private substation to power both centres. Full consent was also given to build the first data centre and it is now under construction (Stage 1/Building 1/1A). Earthworks have also been carried out on the subject Site to facilitate development of the second data centre (Stage 2/the Proposal/Project Echidna). Ancillary infrastructure including, internal roads and utilities, have also been installed onsite to support Project Echidna.

Full consent was never granted for the Proposal. This is now being sought from DPE in the form of this EIS and development application. The following outlines the Site and precinct's development history.

- *DA-18-00196* | Consent was granted for the 'Torrens Title subdivision of one lot into one industrial lot and one residue lot' of Lot 532, DP 1236811 which created the Site.
- *DA-18-00938* | Consent was granted in December 2018 for 'Bulk earthworks entailing cut and fill across the Site to facilitate suitable levels for a future built form (subject to future approval)'. The associated Construction Certificate is CC-19-00320. These earthworks have been completed. The earthworks have created the final levels needed onsite.
- *SPP-19-00013* | This provided full consent to build Stage 1 (Building 1/1A) and concept approval for Stage 2 (Project Echidna).

Since securing concept approval for Stage 2, the NSW legislation around the classification of data centres has changed (see Chapter 4). This means the existing concept approval is no longer valid and a new application is needed. The changes have also affected the Proposal's classification.

The Proposal (SSD-47320208) is intended to supersede all prior development consents, including the Council-approved Concept Design Approval (SPP-19-00013).

The Proposal now classifies as State significant development (SSD) by virtue of meeting thresholds defined under Schedule 1, Section 25 of the State Environmental Planning Policy (Planning Systems) 2021. Specifically, it is classified as a data storage development that would consume more than 10 megawatts in power.

1.4 Related development

The Proposal relies on the above development, some of which has already been installed or built. The remaining element is the need to provide a dedicated substation to service the Site. This, in combination, with the associated completed ancillary development (i.e., the earthworks, utilities, and internal roads), will provide the necessary infrastructure to allow the Proposal to operate without relying on any additional related development. Construction of the substation would be consented under a separate application that is being prepared. The substation would be constructed prior to the commissioning of the Proposal.

1.4.1 Supporting agreements and covenants

Construction of the Proposal is not restricted by any existing covenants that apply to the Site. This is because the Proponent owns the Site, and the previous development applications and consents addressed any existing land use issues and constraints. There are also no voluntary or negotiated agreements needed to support the Proposal. This is because the public infrastructure and utilities provisions have already been installed under the previous consents. Figure 1-1 shows the regional context, Figure 1-2 shows the Site context, and Figure 1-3 shows the Site.

1.5 Proposal objectives

The Proposal's objectives are to:

- Support the ongoing demand for internet usage and data storage for customers, with a particular focus those located in Western Sydney
- Deliver economic benefits and employment generation for the area
- Construct and operate the Proposal in a sensitive and responsible manner, including in relation to the environment and the health and safety of all staff and surrounding locality.

1.6 Proposal needs and benefits

Digitalisation, high-speed wireless networks, data-intensive technologies, home-working, and the demand for cloud data storage have led to an increased need for data centres. Data centres are therefore a critical part of our cities. They underpin our move towards a digital economy as they allow access to enormous quantities of information anytime-anywhere, and they keep people connected to vital services. Their demand is recognised by the NSW Government (see section 2.5.4).

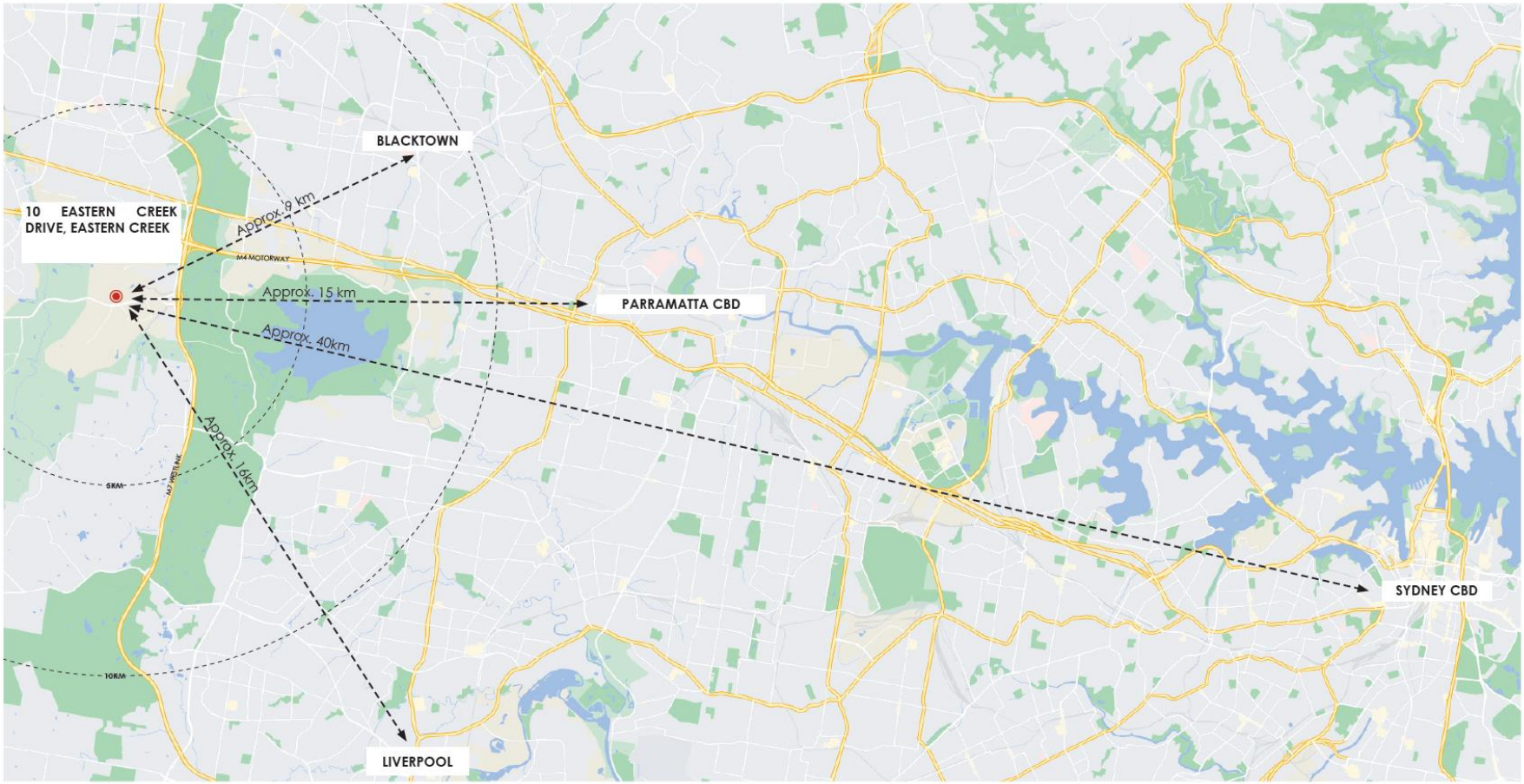
Data centres support all aspects of society and business. This includes commerce and industry, and essential services such as hospitals, schools, energy and utility providers, banking, and transport. Data archiving is fast-growing, and cloud storage is an ideal solution as it is cost effective, easy to access, secure, protected (i.e., backed-up), and available. The COVID-19 pandemic has also increased the demand for data centres as we become more dependent on remote and cloud-based working.

1.7 Proposal capital investment value

The Proposal's estimated capital investment value is about [redacted] (excl. GST), see **Appendix T** for further details.

1.8 Secretary's Environmental Assessment Requirements

A meeting was held with DPE on 8 August 2022 to discuss the Proposal. This followed lodgement of an application to request the use of the industry specific SEARs for data storage centres (DPE, April 2022). DPE confirmed that the EIS could be prepared under these SEARs on 17 August 2022. The full SEARs, along with where and how each item has been addressed, is included as **Appendix A** to this EIS.



The adjacent image indicates the plot proximity to key locations in Sydney.

The site address is:
10 EASTERN CREEK DRIVE, EASTERN CREEK

The plot areas are outlined below:
14.04 acres; 56,850 m2

Note: All areas approximate. Areas obtained from Six Maps.
Image Source: Google Maps

GENTON

ECHIDNA
SITE & CONTEXT

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Figure 1-1: Regional context

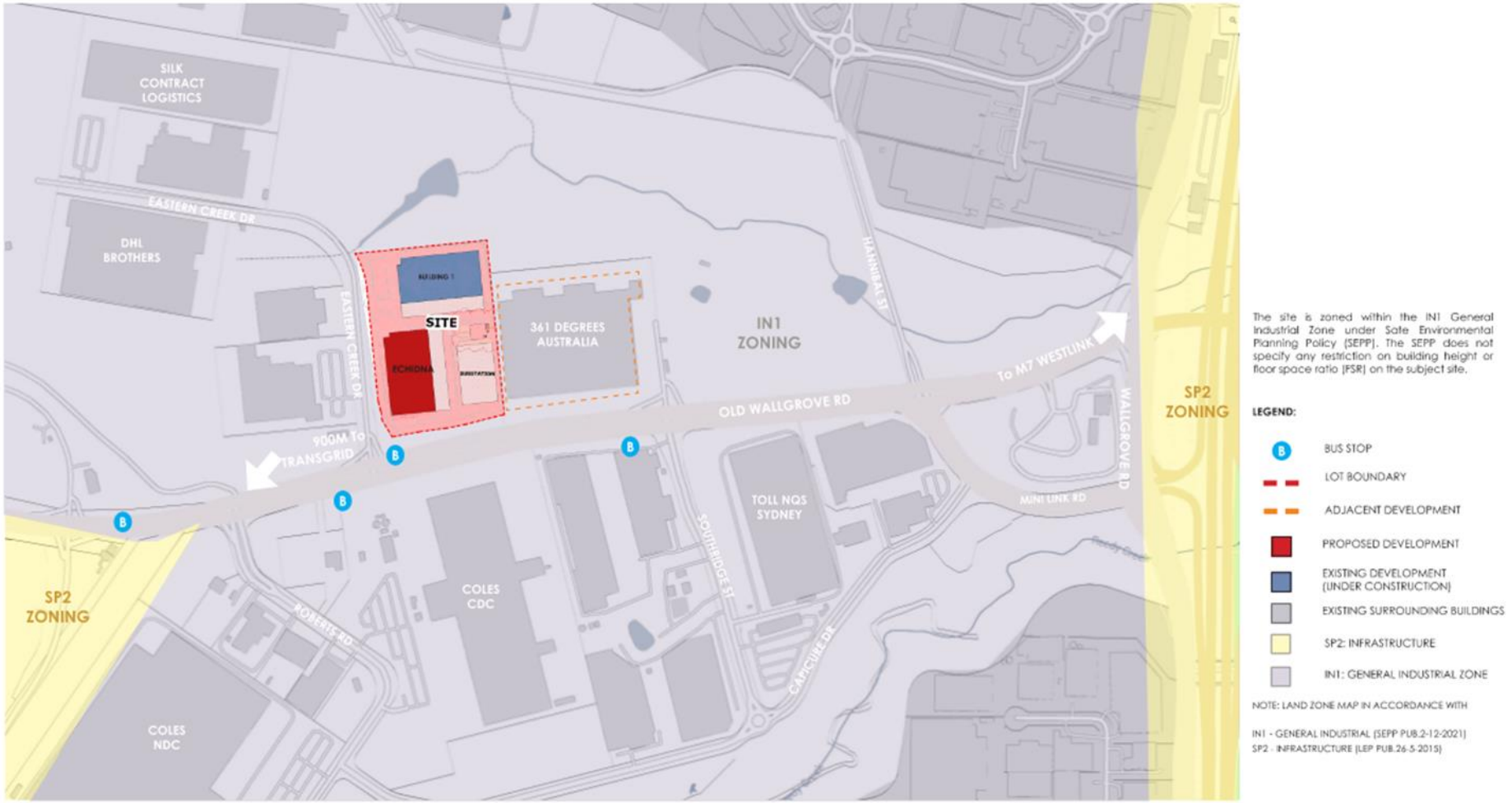

Image Source: SIX MAP

Figure 1-2: Site context

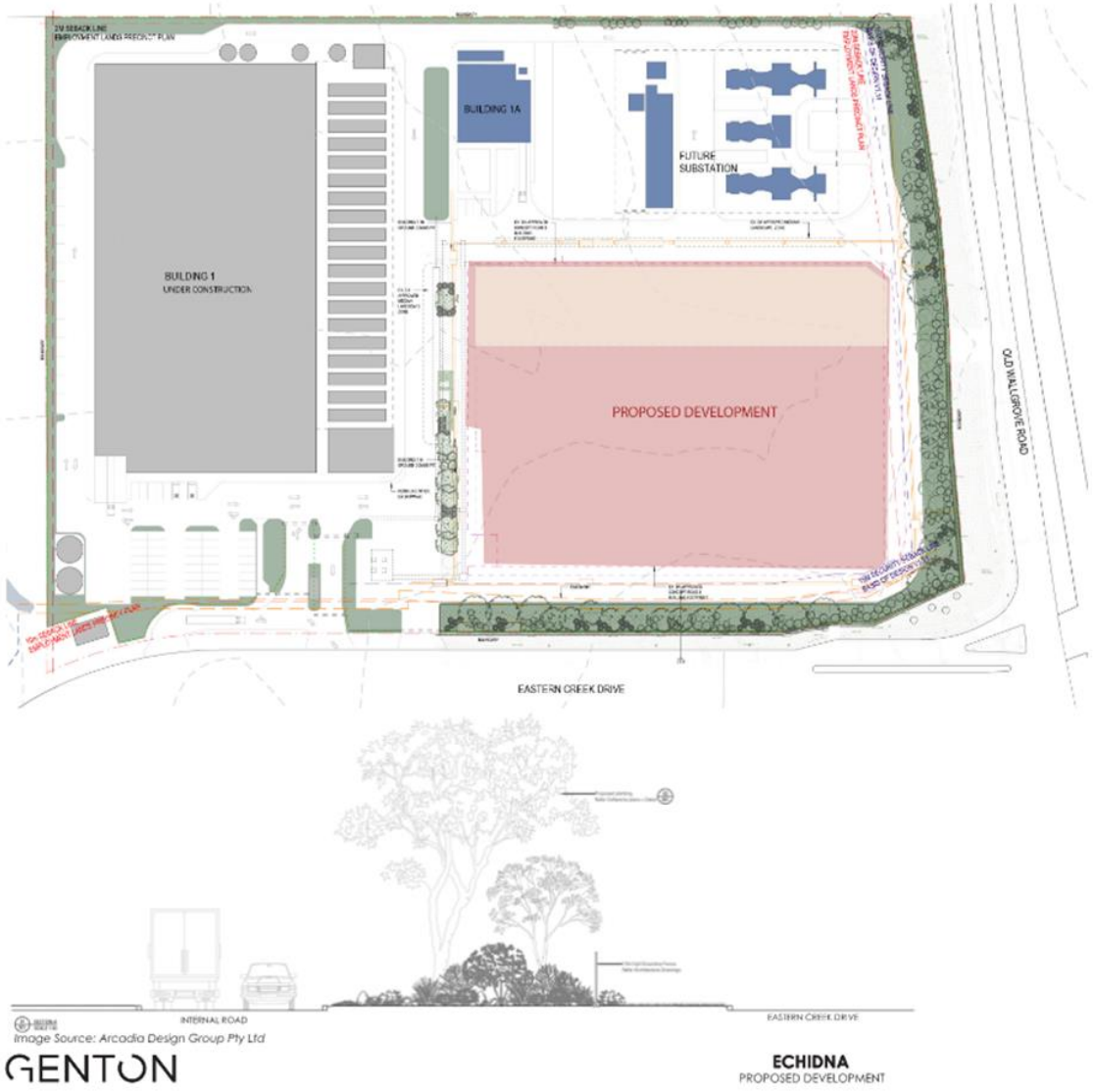

Figure 1-3: Site layout

1.9 Key strategies to avoid, minimise or offset the Proposal's impacts

The overall strategy of avoiding unnecessary impacts was to develop a Site that had been identified and zoned for industrial use in Eastern Creek (see Chapter 2). This meant the Proposal would be built in a location where the sensitivity of the receiving environment would be more favourable and accommodating to support building a data centre. Key is the Site's location away from residential areas and sensitive environmental values, as described in Chapter 6.

More specifically, in terms of the Site context and proposed development, the Proponent has a long history of building similar infrastructure globally. It has standardised equipment schedules and design specifications that offer credible environmental and sustainable performance. **Appendix O** details these. Examples include:

- *Green infrastructure* | Measures to reduce the heat island effect that include planting one evergreen tree every 10 metres that would provide 50 percent shading of the carpark after 10 years.
- *Rainwater recycling* | Measures to minimise water consumption include onsite rainwater harvesting. This is predicted to capture 50,000 litres of rainwater, which would be used for cooling the data halls.
- *Energy monitoring* | The installation of energy monitors would allow targeted management strategies to be implemented to reduce consumption.
- *Refrigerant use reduction* | The use of rainwater harvesting would reduce the need for refrigerants that are used in conventional mechanical cooling.
- *Equipment selection and optimisation* | The equipment installed onsite has been selected from global specifications set by the Proponent based on low-emission technology. This will be complemented by operational performance specifications that require the equipment to be routinely monitored, tested, and serviced. While this is carried out to ensure a continuity of power supply to the Site, it is also used to make sure the equipment operates within manufacturer performance specifications. This optimal performance requirement means it would minimise the emissions from the Site. Appendix R and Appendix V describe this in more detail.

ARUP

EIS

Project Echidna

Chapter 2 | strategic context

Reference: SSD-47320208

Final | 7 October 2022

Job number 288255-02

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Figures

2. Strategic Context

This Chapter identifies the key strategic issues that relate to the Proposal.

2.1 Site location, context, and characteristics

The Site is situated on the corner of Eastern Creek Drive and Old Wallgrove Road on a land parcel approximately 56,800 m^2 in size. It offers a street frontage of approximately 300 metres along Eastern Creek Drive and 180 metres along Old Wallgrove Road. The proposed development only occupies the southwestern portion, with a total area of approximately 9,225 m^2, or about 16 percent. Vehicular access to the Site is provided off Eastern Creek Drive via two vehicle entry points. These were built as part of the wider development described in section 1.3.

2.2 Site context

The Site is located on the traditional lands of the Dharug people, who have a strong Connection with Country from their continuous use of the area over thousands of years. This reflects their care for the land and their connection through making open campsites on higher ground allowing access to water sources such as billabongs, creeks, and wetlands, moving with the seasons to take advantage of plentiful animals and plants.

Historical investigations (see section 4.1 of **Appendix K**) indicate that the wider area remained undeveloped until late 2007 after which the first industrial and commercial developments were established in the area along with upgrades to the public infrastructure including key roads. From 2017, the area immediately surrounding the Site was being developed for various uses, with development starting onsite from 2019.

The Site is zoned for General Industrial development (IN1) under State Environmental Planning Policy (Industry and Employment) 2021. This allows various industries to be built including data storage facilities.

More broadly, the Site is located approximately 40 kilometres west of the centre of Sydney, 15 kilometres west of Paramatta, and 16 kilometres northwest of Liverpool. Its location provides convenient access to the M4 and M7 Motorway interchange. Public transport is facilitated by various bus stops along Old Wallgrove Road, connecting the Site to Mount Druitt, Rooty Hill, St Marys, and Wetherill Park.

As shown below on Figure 2-1, the Site is located to the west of the M7 Motorway and two kilometres from the nearest community infrastructure in the area associated with the Western Sydney Parklands and Prospect Reservoir.

2.3 Site characteristics

Construction of Building 1/1A to the north of the Site is currently underway and scheduled for completion in Q3 2022. The subject Site has been prepared to fall from south to north with ridgelines providing fall to the east and west. Stormwater channels have been installed to allow water to drain from south to north to a temporary sediment basin. Various utilities have been installed to support its future development as a data centre.

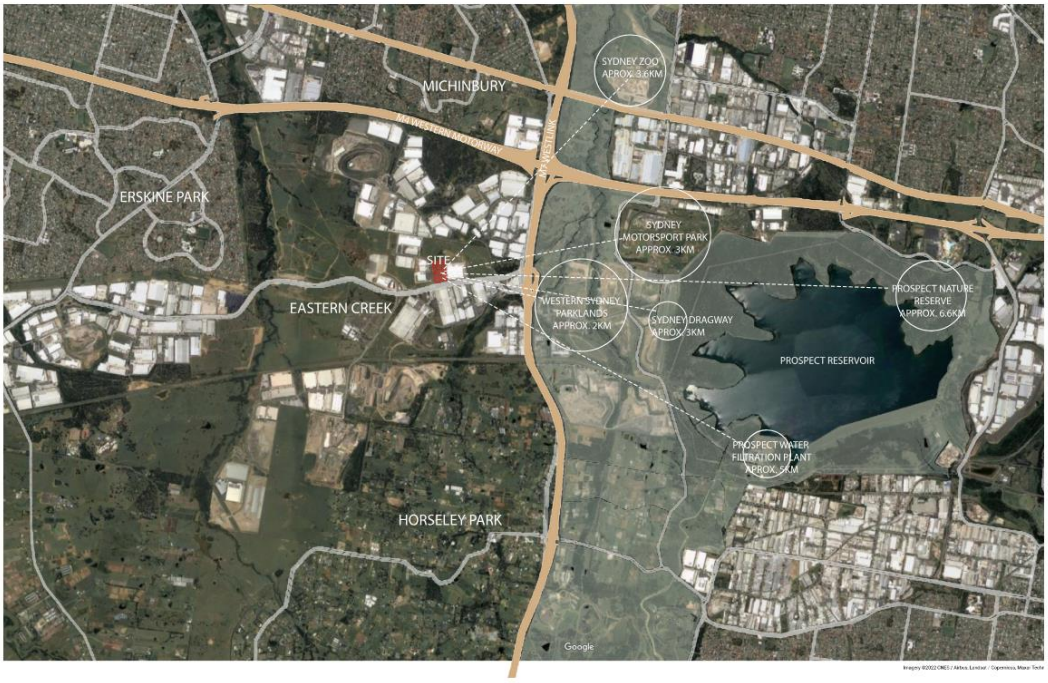
There is a 2.5-metre height difference in the site from south to north. This means there is about a 2.5 percent fall in gradient in this direction. There is about a 1.5 percent fall in gradient either side of the ridgeline to the western and eastern edge of the Site. The Site is not within bushfire prone land or within a flood zone (see section 6.14).

This means the site is cleared of vegetation, levelled, and profiled to support development. Beyond the boundary to the south, fronting Eastern Creek Road, is an existing row of mature planted wattle trees. These would be retained under the Proposal and supplemented through additional landscape planting as described in **Appendix S**.

Minchinbury and Horsley Park are the nearest residential centres to the Site, located over 1.5 kilometres away. The nearest residents are about 1.6 kilometres to the south (Burley Road, Horsley Park) and

1.7 kilometres to the north (Farrington Street, Minchinbury). The key land uses around the Site are all industrial and commercial in nature:

- *North* | Vacant land, with industrial facilities farther north.
- *South* | Old Wallgrove Road, with industrial facilities such as Coles Polar Fresh Distribution Centre.
- *East* | Industrial land use including Fulton Hogan asphalt contractor and Aussie Table Tennis Sydney, and vacant land farther east.
- *West* | Industrial land use (Ricoh office equipment supplier) and vacant land farther west to be further developed.



GENTON ECHIDNA SITE & CONTEXT REV A SCALE NTS PAGE NO. 5 DATE 18/08/2022 © COPYRIGHT AND CONFIDENTIAL

Figure 2-1: Important natural or built features near the Proposal

2.4 Cumulative impacts

While this EIS focuses on the Proposal's impacts, the data centre would be built in an area that is subject to planned future development. This means the existing environment will change over time. It also means that there are other committed and approved developments that are not built, which could result in a different impact outcome than just building the Proposal on its own. These are called cumulative impacts. As noted in section 1.3, this Proposal is one of two data centres that would be built, which would be supported by a substation. Section 6.15 considers the combined cumulative impact of these developments along with those generated from the wider development taking place in the area.

2.5 Relevant plans

The following section describes how the Proposal is strategically supported under Government plans and policies.

2.5.1 Greater Sydney Region Plan | A Metropolis of Three Cities

The Greater Sydney Region Plan, A Metropolis of Three Cities is a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic, and environmental matters. The Region Plan aims to align infrastructure and growth to restructure economic activity and access across three cities. The Proposal is located near The Western Parkland City.

The Western Parkland City is billed as the "economic powerhouse of Greater Sydney". The Region Plan recognises the need for technology industries in this City and the role they play in supporting the digital economy. The Plan therefore supports the Proposal's location to service the Western Parkland City.

The Smart Western City Program (NSW Government, 2021) also supports the Proposal, as the data centre would be part of the "digital infrastructure, services, and resources" needed to ensure "the Western Parkland City is future-focused [and] digitally enabled".

2.5.2 Our Greater Sydney 2056 | Central City District Plan

Our Greater Sydney 2056: Central City District Plan was publicly released with the Region Plan. The District Plan covers the Blacktown LGA and the Proposal site (see Figure 2-2 below). Growth Areas are identified in the Plan as those locations where there is heightened demand for a variety of employment opportunities, infrastructure, and services. While the Proposal is not situated within a Growth Area, it would offer a key role in supporting their development by providing the needed digital infrastructure.

The District Plan recognises Blacktown as providing a diverse mix of business, retail, residential, and administrative land uses. It describes the value of Blacktown's strategic location in contributing to the productivity of the Central and Western Parkland Cities. A key action under the Plan for Blacktown is to "attract significant investment and business activity in strategic centres to provide job growth". The Proposal is strategically supported under Planning Priority C11 as it would bring the needed "digital technologies" to support a knowledge-intensive economy. The Proposal is therefore part of the District Plan's aim to transition the economy into higher-order and productive industries. Planning Priority C12 also recognises that "rapid technological changes and digital advancements are disrupting established business models and workplaces". The Proposal indirectly underpins these needs as it supports the transition to a digital economy.

2.5.3 Future Transport Strategy 2056

The Future Transport Strategy 2056 was released alongside the Region and District Plans. The Strategy sets the 40-year vision, directions, and principles for customer mobility in NSW, guiding long-term transport investment.

The main aim of the Strategy in the Western Parkland City is to promote the notion of people living and working within 30 minutes of one another, and to promote alternative modes including walking, cycling, and public transport. In the case of the Site, it is located with access to alternative forms of active and public transport, as described in Chapter 6. This means the provisions of the Transport Strategy strategically support the proposed Site as it would make it easier for people to travel to the data centre via alternative modes. This may encourage a wider demographic and diversity of people to work at the data centre than otherwise may have been precluded if they did not own a car.

2.5.4 Building Business Back Better

The NSW Government realises that there is a need to build a faster, simpler planning system to support the State's economic recovery after the COVID-19 pandemic. The above initiatives focus on making it easier for businesses to secure a development consent providing they meet specific criteria. The NSW Government has proposed changes to the planning system to facilitate more growth and development of data centres to promote economic recovery. This is recognition by the Government of the wider role data centres have in stimulating investment. The aim to revise the NSW planning system therefore strategically supports the Proposal. Unfortunately, these changes are yet to be made.

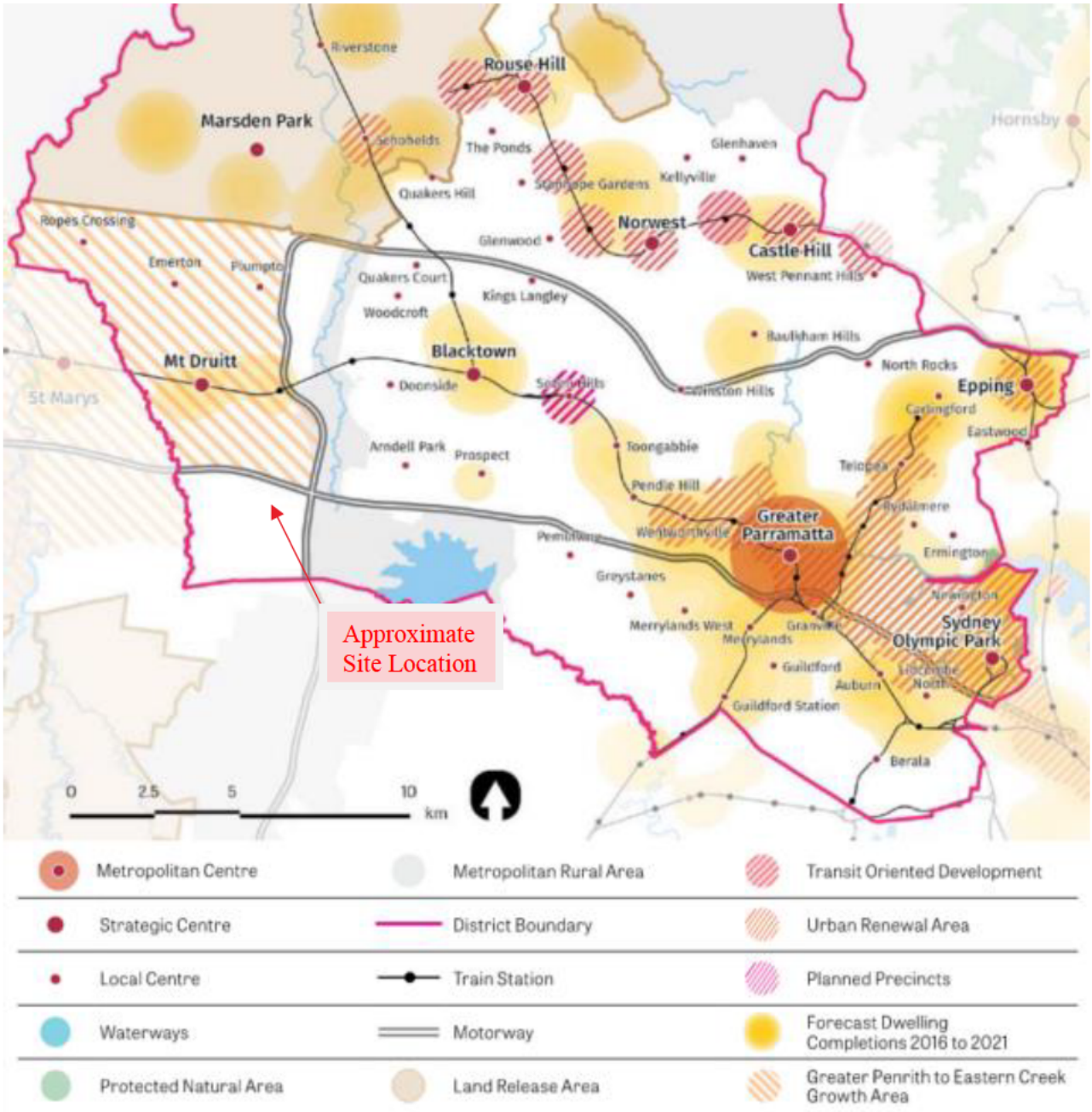


Figure 2-2: Site within context of the Central City District

2.5.5 Blacktown Local Strategic Planning Statement

The Blacktown Local Strategic Planning Statement 2020 is the Council's main strategic planning document. It sets out planning priorities consistent with the Region and District Plans. The Planning Statement provides a 20-year land use vision for the LGA and directs how future growth and change will be managed. It informs changes to relevant environmental planning instruments and development control plans.

The following policies in the Planning Statement support the Proposal:

- *Priority 8 | Growing mixed use, investment, business, and job opportunities in Strategic Centres.* The Proposal would create job opportunities and stimulate wider investment in the area.
- *Priority 14 | Increasing urban tree canopy cover and Green Grid connections*. The Proposal includes landscaping provisions that respond to this (see **Appendix S**). This includes increasing the tree canopy cover to help with urban cooling (see section 1.9).

- *Priority 16 | Reducing carbon emissions and managing energy, water, and waste efficiently*. The Proposal includes efficient methods to manage its energy, water, and waste. These are detailed in **Appendix P, Appendix O** and **Appendix Q,** and summarised in section 1.9.

2.5.6 SEPP 59 - Eastern Creek Precinct Plan (Stage 3) 2005

The Eastern Creek Precinct Plan is the main instrument that controls development in the area. It applies to the Site. Since SEPP 59 has been repealed as of 2021, Part 2, Section 2.18 of State Environmental Planning Policy (Industry and Employment) 2021 consents that development can be delivered under the precinct plans previously prepared under SEPP 59. Relevant objectives of the Eastern Creek Precinct Plan that support the Proposal are:

- *Establishing a high-quality industrial precinct that provides diversity in employment opportunities and economic development to benefit Blacktown and Central Western Sydney*. The Proposal would deliver economic benefits by supporting wider investment (see section 2.5.2). This includes facilitating high-end technology jobs and supporting the digital economy.
- *Ensure the provision of infrastructure and services*. The utilities required to service the Site were installed as part of the Concept Design Approval. This includes the necessary stormwater and wastewater pipes, pits, and conduits. Electrical and telecommunication conduits were also installed as described in section 3.2.2.
- *Ensure the traffic and public transport needs for the Precinct are achieved*. The Site is well connected to public transport in the area, with a bus stop directly adjacent and opposite. These provisions help improve access to the site and offer the benefits described above under section 2.5.3.

2.5.7 Strategic support for the Proposal

The Proposal is critical to support the region, more specifically the wider move to transition to a digital economy. It would promote innovation, stimulate investment, and benefit the economy through elevating productivity within the region.

In summary, the Proposal is strategically supported through the following policies:

- The *Greater Sydney Region Plan* promotes the use of vacant land to generate income and provide critical infrastructure to support the growing demand for data storage across the region.
- The *Central City District Plan* aims to attract innovation into industrial lands while playing a role in supporting the adjacent Penrith to Eastern Creek Growth Area. Its Planning Priorities promote the need for digital technologies to support a knowledge-intensive economy.
- The *Blacktown Local Strategic Planning Statement* recognises the need for high-end technology jobs in the area and wider initiatives to promote employment diversity and economic development.

2.6 Proposal alternatives

Both Clause 192 of the EP&A Regulation 2021 and the State Significant Development Guidelines (DPE, 2021) require the EIS to describe the alternatives and options that were considered and rejected in selecting the preferred Proposal.

2.6.1 Do nothing

This option was not considered further as the objectives of the Proposal would not be met.

Given that construction has commenced for Building 1/1A as part of the Concept Design Approval (see section 1.3), if the Proposal were not to proceed, the Site would remain underutilised, or it would be developed for another industrial-related purpose, which may be less compatible. This would limit the operational capacity of the Concept Design Approval.

Furthermore, this option would hinder the main objective of responding to the demand for data storage centres. It would also be a missed opportunity to support the regional, district, and local strategic plans, which promote the need to invest in digital infrastructure in Sydney to help transition to a knowledge-intensive economy.

2.6.2 Development of an alternative site

The decision to build a data centre on the subject Site was considered as part of the Concept Design Approval. At the time, other sites were considered. However, they were rejected in favour of the subject Site because it offered the most beneficial outcome in terms of the Proposal's objectives for the following reasons:

- It is on land zoned for industrial use. This reflects the reduced environmental sensitivity of the area and its suitability to support a data centre. Specifically, the location would not result in any apparent unjustified or unmanageable environmental or social impacts, as confirmed through carrying out more detailed assessment (see Chapter 6). It therefore offers a favourable outcome.
- It would provide various positive social and economic benefits in helping support the growth and development of the Western Parkland City. The Site is also strategically placed between key urban areas, which would help bolster their data resilience. It therefore provides a good social outcome.
- Offers the ability to locate the two data centres next to one another. This means they can share common infrastructure. This would reduce the need to replicate investment, which in turn would reduce the overall amount of material and resources needed to build the Proposal. It therefore offers a favourable economic outcome.
- Is near major transport links including roads, cycleways, and public transport routes. This would make it easier for people to travel to the data centre via alternative modes. This offers a favourable social outcome.
- Offers longer-term employment-generating opportunities as construction staff can switch to working on the Proposal once Building 1/1A is finished. This offers a favourable socioeconomic outcome.

2.6.3 Alternative site configuration

The configuration of the Proposal was chosen based on the Site's topography, access, and existing infrastructure, as well as the need to respond to the character of the surrounding industrial area. Furthermore, the Proposal has evolved overtime since the Concept Design Approval.

However, an alternative site configuration was considered. This would have resulted in flipping the layout horizontally to partly improve traffic circulation. However, this option was rejected as it provided no real advantage under further assessment and conversely it would introduce various other operational constraints. The final site layout also better integrates with Building 1/1A aesthetically, technically, and functionally.

Finally, the proposed Site configuration maximises opportunities for landscaping, access, and parking. The different site configuration would not have been able to respond as effectively to these opportunities.

2.6.4 Proposed technology and power alternatives

A key limitation of a data centre is its need to remain online as there could be significant social and economic impacts otherwise, especially to essential community services such as the Government, medical, and banking sectors. This forces the need to include power redundancy. Consideration was given to the best way to power the Site. Conventions in data centre design include at least two forms of back-up power.

Options were considered as to the best power supply configuration, balancing supply certainty compared to renewable/non-renewable sources. It was concluded that the site demands a level of power that could only be supplied by the grid. Therefore, there was no main supply alternative, other than the Proponent selecting a green energy tariff. The same conclusion was reached in terms of the main back-up, resulting in the selection of a second grid-supply line to the site.

Despite the above providing a high level of redundancy, it would not offer a fail-safe solution. This meant the Proponent needed to identify a power source it could operate and control onsite, independent of the grid. Options were considered to use battery storage or renewable power sources. However, the space needed to provide and store sufficient power to the Site using these alternatives would be significant, way beyond the footprint of the available land. Also, despite the environmental benefits of using renewable power, supply cannot be guaranteed. Therefore, the decision was taken to install back-up diesel generators, as these offer the only cost-effective solution that provides guaranteed power that can supply the centre in the short time the generators take to start-up. Despite this option not meeting the objective of being a minimal impact solution, it would only ever be used in the event of two supplies failing, which would be extremely rare.

Also, through further assessment, it was confirmed that the emissions from the generators could be managed to avoid any health or amenity-based impacts (see Chapter 6) and the operating time would contribute little to the State's greenhouse gas inventory.

2.6.5 The preferred option and current form of development

From a location perspective, the Site was considered the best alternative as it would be able to accommodate the intended platform and scale of development proposed, while benefitting from the co-location of two data centres next to one another. Accordingly, the Site's locality is considered satisfactory from a strategic standpoint, with the Proposal responding to the industrial character intended for the area.

It is noted, that if the Proposal did not proceed, it would not meet the main objective to provide the necessary IT infrastructure to support the increasing demand for a digital economy.

Considering the above, the Site specifically promotes industrial-related development of the type proposed. The selected layout and technology configurations also provide the means to promote socioeconomic resilience by keeping the Site online yet offer a solution whose environmental impacts can be adequately mitigated, as confirmed through the detailed impact assessment summarised in Chapter 6. The Site also offers the space and context to provide an effective landscape and urban design response, along with various sustainable design components such as rainwater harvesting as described in Chapter 1.

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EIS

Project Echidna

Chapter 3 | proposal description

Reference: SSD-47320208

Final | 7 October 2022

Job number 288255-02

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3. Proposal description

This Chapter provides a comprehensive and consolidated description of the Proposal.

3.1 Proposal overview

The Proposal comprises the construction and operation of a new 35.2-megawatt data centre, next to where another data centre is currently approved and under construction (see section 1.2). The Proposal would be two-storeys, reaching approximately 25 metres above ground level including rooftop equipment. The main building would be about 135 metres long and 70 metres wide. It would be supported on a piled slab foundation.

Table 3-1 provides an overview of the Proposal.

Table 3-1: Proposal overview

Item	Description
Proposed area	A data centre, comprising data halls, mechanical and electrical equipment rooms, offices, secure entry, loading dock and other ancillary spaces. Rooftop mechanical equipment, external backup generators and water storage tanks also support the function of the data centre.
Physical layout and design	*Overall dimensions* | A two-storey structure with associated parking, loading, and landscaping areas, reaching approximately 25 metres above ground. About 175 metres long and about 70 metres wide. Occupying about 16 percent of the Site. *Design response* | Designed to respond to the seven objectives of Better Placed. Key has been respecting the Site's modern industrial setting, on the traditional lands of the Dharug People, and within the context of the Cumberland Plain, and its characteristic woodland. The design response also respects the wider themes across the area, while being complementary to the approved design that is being adopted for Building 1/1A. *Internal fit-out* | Carried out over time as demand increases. It would comprise servers, racks, storage devices, and other networking equipment. This would be supplemented with additional electrical and cooling equipment. *Vegetation removal* | No tree removal is needed and there is no existing vegetation onsite. *Landscaping* | Mature local trees would be planted at intervals to improve aesthetics and amenity and provide passive cooling. The species composition would complement the native Cumberland Plain Woodland and other species on Blacktown City Council's native planting list.
Site coverage	The Proposal has a total coverage of approximately 9,225 square metres comprising two data floors (Ground Floor + Level 1).
Power, back-up power supply, and cooling	*Primary mains power* | Supplied from the Endeavour Energy network via a private onsite substation (subject to a separate DA) which will also support Building 1/1A. Two feed lines would be provided to the substation to offer redundancy. *Back-up generator power* | 19 back-up generators, which would be tested for a total of about 162 hours across Building 1/1A and the Site. The generators would only be used if there was a mains outage. *Battery storage* | Distributed lithium-ion batteries would be installed in the data halls to provide short term "ride-through" power to the IT equipment while the back-up generators start. Small uninterruptible power systems would also provide battery backup to various other critical systems. *Fuel storage* | Approximately 400,000 litres of diesel fuel would be stored onsite to power the back-up generators. *Cooling* | Cooling would be delivered by fresh air free-cooling systems in the winter and evaporative cooling in the summer.
Access, circulation, and parking	*Access* | Would be provided via Eastern Creek Drive and an internal road network being built under the Concept Design Approval. *Circulation* | The roads have been built and designed to separate heavy vehicles, light vehicles, and pedestrians. They have been designed to allow heavy vehicles to safely move (circulate) around the Site without the need to reverse.

Item	Description
	Parking | Parking would be shared across Building 1/1A and the Site. It comprises: • 66 shared regular parking spaces • Four car parking spaces compliant with the *Disability Discrimination Act 1992* • Six shared bicycle parking spaces.
Other infrastructure	The utilities required to service the Site have been installed as part of the Concept Design Approval. This includes the necessary stormwater, wastewater, telecommunications and electricity pipes, pits, conduits, and nodes. Local connections would need installing.
Site preparation works	*Earthworks* | There would be some minor localised earthworks to create the final levels, landscaping profiles, and install the local utility connections. The total excavation volume is anticipated to be about 2,200 m^3 and the needed fill would be about 18,900 m^3.
Land uses and activities	The only activity taking place onsite would be the operation of the data centre. There would be occasional maintenance and delivery vehicle movements to support this, supplemented by the workforce arriving and leaving at the start and end of each shift. Most operations would occur during the day, however due to the need to operate the site continuously, essential site and security staff would be working at night.
Employment	The Proposal would support up to 100 construction jobs and 50 full-time operational jobs.
Timing	Work onsite is expected to start in early 2023 and it would take about 18 months to build the centre and then six months to fully fit it out.
Phases	The Proposal would be built in a single stage (in planning terms); however, it would cover two build phases: *Phase 1* | Initial construction and fit out • Data centre shell • Administration spaces • Initial fit out *Phase 2* | Remaining fit out

3.2 Description

Consent is being sought for the Proposal described above in Table 3-1. This would allow the data centre to be built in two phases (refer to section 3.3 below). The following section describes the Proposal in detail.

3.2.1 Project area

The Proposal would be built on 10 Eastern Creek Drive, Eastern Creek NSW, legally described as Lot 4001 DP 1243178. It would involve the construction of a two-storey data centre comprising data halls, mechanical and electrical equipment rooms, offices, other ancillary support spaces, and external/rooftop mechanical and electrical equipment. The data centre would deliver capacity for approximately 35.2 megawatts of IT equipment. Figure 3-1 and Figure 3-2 below show the Site context and layout.

Figure 3-1: Site context

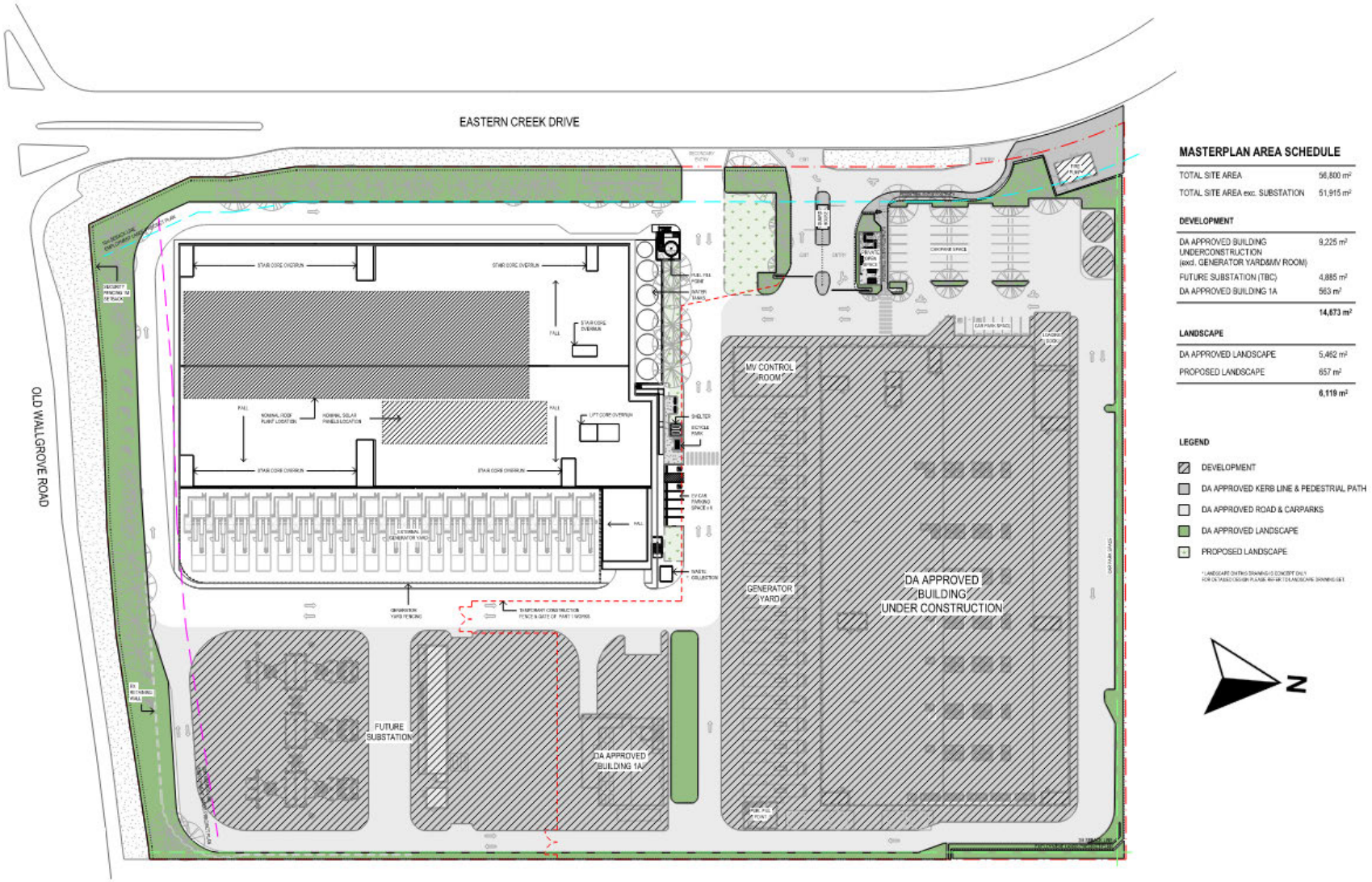

Figure 3-2: Site layout

3.2.2 Physical layout and design

The two-level facility would include data hall space and supporting plant rooms, administrative spaces incorporating secure entry facilities, a loading dock, storage, end of trip facilities, and staff offices. It has been designed to be consistent with the seven objectives for good design in Better Placed: An Integrated Design Policy for NSW. This section describes the detail of the Proposal's layout and design.

Design response

As noted above, the Proposal has been designed in response to Better Placed, which was released by the NSW Government Architects Office in August 2017. Better Placed is an integrated design policy for the built environment. It advocates for sharing the responsibility in delivering processes and outcomes with a focus on 'good design'. Better Placed identifies seven objectives. **Appendix V** includes a detailed appreciation of the corresponding design response. This identifies how the Proposal has been designed to respect its modern industrial setting, on the traditional lands of the Dharug People, and within the context of the Cumberland Plain, and its characteristic woodland. The design response also respects the wider themes across the area, while being complementary to the approved design that is being adopted for Building 1/1A.

The response in **Appendix V** recognises how consultation with the Traditional Custodians (see section 5.3.2) has informed the design, and how this will continue. It also describes the ESD initiatives that have been adopted to improve the Proposal's performance and resilience.

Internal fit out

The split-level data halls would be fitted out with IT infrastructure over time as demand increases. The specifics of the IT infrastructure would vary depending on customer needs. However, it would broadly comprise servers, racks, storage devices, and networking equipment. Additional electrical cabling and conduits would be installed to power the IT infrastructure as it comes online, with additional cooling also provided. This means the power demand onsite would gradually increase.

Administration facilities and loading dock

While the data halls would occupy most of the main building, there would be an area dedicated to the facility's administration and a loading dock. The administration area would include offices, a kitchen, end-of-trip facilities, and toilets. The loading dock would provide the means for heavy vehicles to offload and remove larger equipment such as servers and racks. **Appendix V** and the extract below (see Figure 3-3) show the detailed location of these elements in the north-east edge of the building (bottom right corner).

Figure 3-3: Location of the administration office and loading dock

Landscaping

Landscaped areas would be installed around the data hall. **Appendix S** describes the landscape and planting strategy. The objectives of the strategy are mainly derived from the Eastern Creek Precinct Plan (Stage 3, December 2005). It focuses on planting mature local trees to improve aesthetics and amenity. In summary the strategy:

- Encourages a high standard of landscaping to enhance the streetscape, amenity, and planting of the area
- Ensures that plant species and planting patterns complement and enhance the Cumberland Plain Woodland
- Ensures that the public domain, open space, and outdoor areas are landscaped and maintained
- Enhances the appearance, amenity, energy, and water efficiency of the development through integrated landscape design.

The landscape design incorporates the following features:

- Maximised use of green spaces around the periphery to provide a buffer to the perimeter as screening vegetation
- Selected species that are suitable and in accordance with the Council native planting list
- Native species within mulched planting beds that are drought resistance and have low maintenance and watering requirements
- An increased canopy cover to reduce heat island effects and improve screening to the Site perimeter
- Landscape planting and finishes that are attractive and consistent across the Site and both data centres
- Treatment to the entry and circulation spaces to improve the amenity experience.

Earthworks

Although bulk earthworks have been completed as part of the Concept Design Approval, some localised profiling would create the final levels. Some excavation would also be needed to connect into the utilities and services.

Once installed, imported fill would create the final level across the Site. This fill would be sourced from existing surplus material and used in accordance with the Government's available resource orders and exemptions (EPA, 2022). If required, suitable import material and engineering fill would be sourced to manage any deficit. Given the amount of construction taking place in the area, there is an availability of engineering fill that could be used without having to specifically purchase bulk materials. The Concept Design Approval earthworks plan is shown below. This represents the current baseline, which would be further contoured as described above. The expectation is that the final levels would require about:

- 2,200 m^3 of material to be removed (cut) from the current levels.
- 18,900 m^3 of material to be placed on the Site (fill) to create the final levels.

This means 16,700 m^3 would need supplying from the surplus material on Building 1/1A.

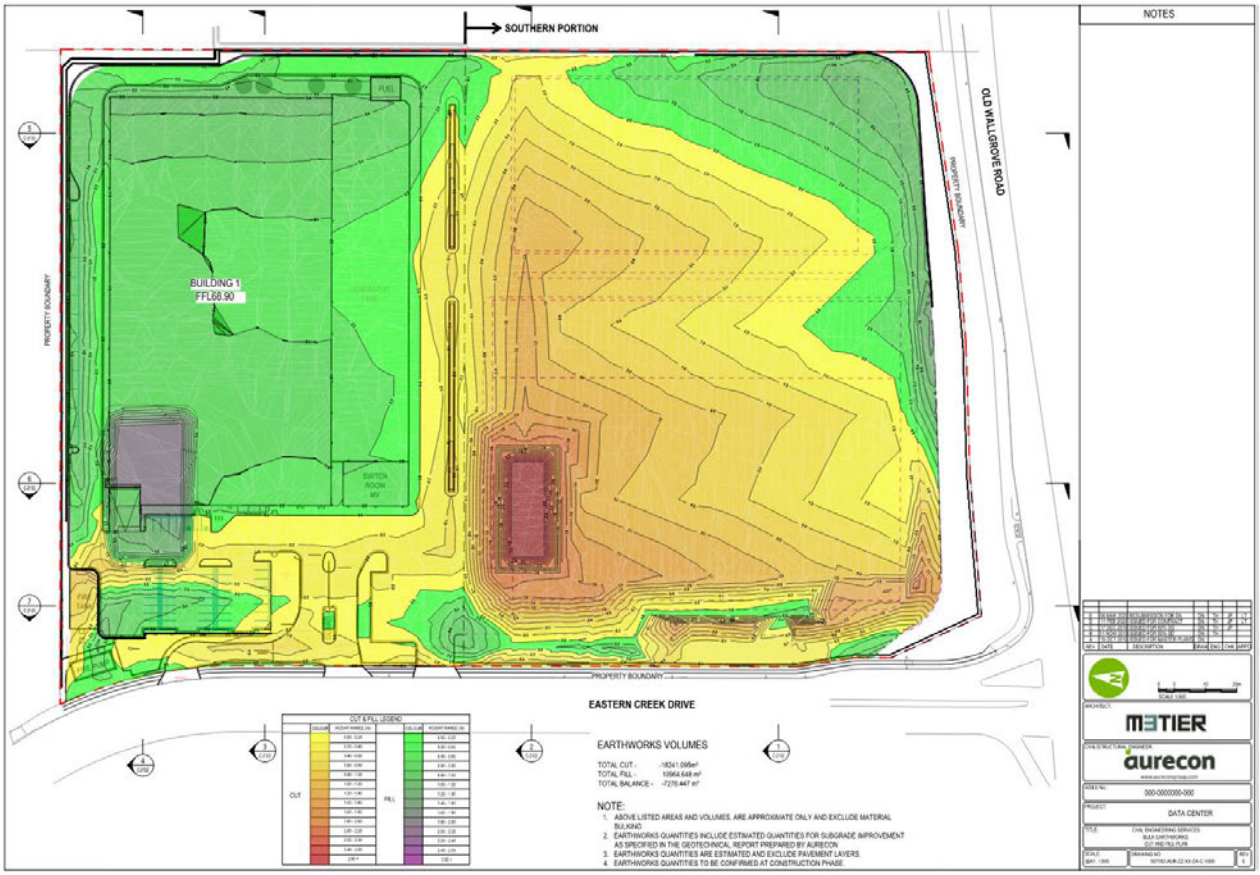

Figure 3-4: Concept Design Approval cut and fill plan

Power, back-up power supply, and cooling

Utility power would be delivered via a dedicated onsite electricity substation, which is subject to a separate development application, with emergency backup power provided by standby generators (see **Appendix R** for further detail).

Grid-supplied power | The proposal is for Endeavour Energy to supply two mains power sources that would feed into the substation. This means if there is an outage in one supply, then the other would be available as a back-up. The back-up diesel generators would only be used in the extremely low probability that both mains power supplies would experience an outage at the same time.

Battery storage | Lithium-ion batteries will be installed within the data halls. Additional spare and exhausted battery units will be stored within separate dedicated battery rooms. The battery storage locations are shown in **Appendix L**. They would be used to keep the data centre online for the short period during a mains power outage until the backup generators come online.

Back-up generators | The Proposal includes 19 low-voltage generators to provide back-up power. All generators would be housed in prefabricated, acoustic rated, generator enclosures with double-skinned belly tanks to store up to 400,000 litres of diesel fuel above ground. All generator enclosures would be free-standing and located in a hardstand 'yard' to the west of the main building, while some mechanical equipment would be located at roof level (see **Appendix L**). The Australian Energy Regulator (AER) estimates the likelihood of an outage being around 0.05 percent each year with the power loss lasting for typically less than an hour[1]. Unlike the scheduled and load testing described below under section 3.2.3, the generators would not operate under heavy loads.

[1] Taken from the System Average Interruption Duration Index (SAIDI)

Cooling | Cooling will be delivered by fresh air free-cooling systems in the winter and evaporative cooling in the summer to ensure energy consumption is minimised as far as practical. Rainwater harvesting would be used to supplement the cooling as described in section 1.8.

Figure 3-5: North and South Elevations (Genton, 2022)

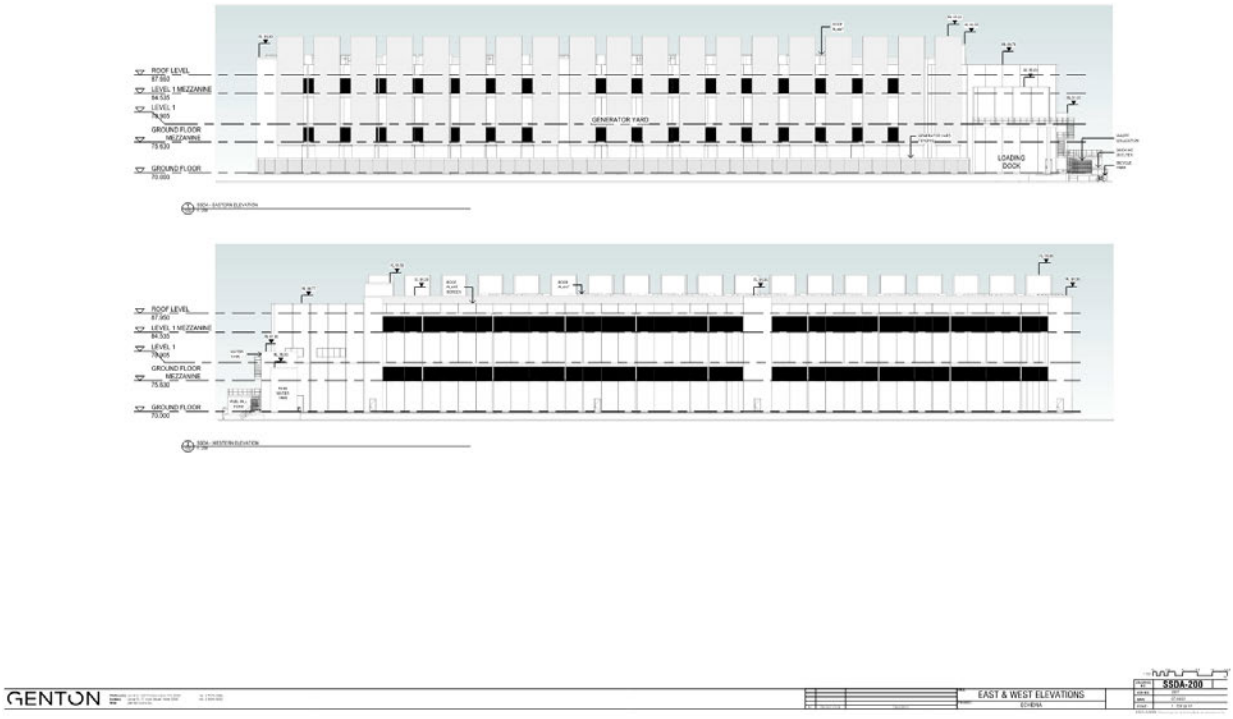

Figure 3-6: East and West Elevations (Genton, 2022)

Access, circulation, and parking

The following section describes the access, circulation, and parking onsite.

Access | Site access is located on Eastern Creek Drive and was constructed as part of the Concept Design Approval. This provides two main vehicle accesses into the Site as shown in Figure 3-7. There is one access route for trucks and material deliveries (shown in blue) and another access for staff vehicles (shown in pink). A protected pedestrian and cyclist entry (shown in red) would be provided to the north of the Site's vehicle entrances, separating pedestrians and cyclists from driveway traffic.

Circulation | Operational traffic is discussed in section 6.2. It shows how traffic would safely move around the Site. Key is that heavy vehicles would be separated from light vehicles and pedestrians. It also shows the route heavy vehicles would take around the site, and how the roads have been designed to allow for their safe circulation without the need to reverse (other than out of the loading dock). This is called a 'swept path' and is shown in **Appendix I.**

Parking | The Proposal provides a total of six bicycle spaces shared between the two data centres and adequate end of trip facilities. Car parking on the Site is located within the area being developed as part of the Concept Design Approval, as shown in red in Figure 3-8. It would comprise 70 spaces, 32 of which would be used by Building 1/1A and the remaining 38 would service the Proposal. Four of the car parking spaces would be designated for accessible parking.

Figure 3-9 shows a safe route for pedestrians to walk between the Proposal and the car park. The traffic report in **Appendix I** concluded that the car parking rate is adequate given the nature of the Proposal and the Concept Design Approval.

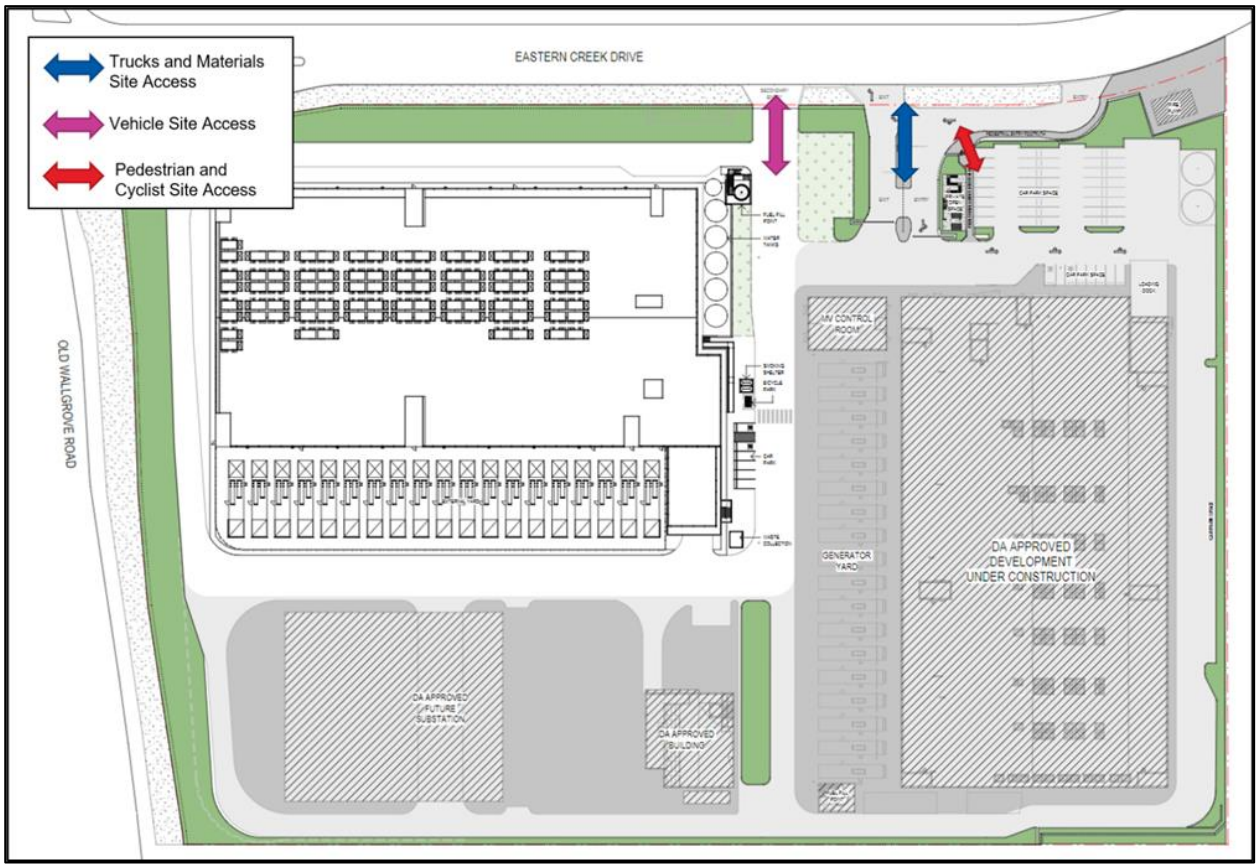

Figure 3-7: Site access

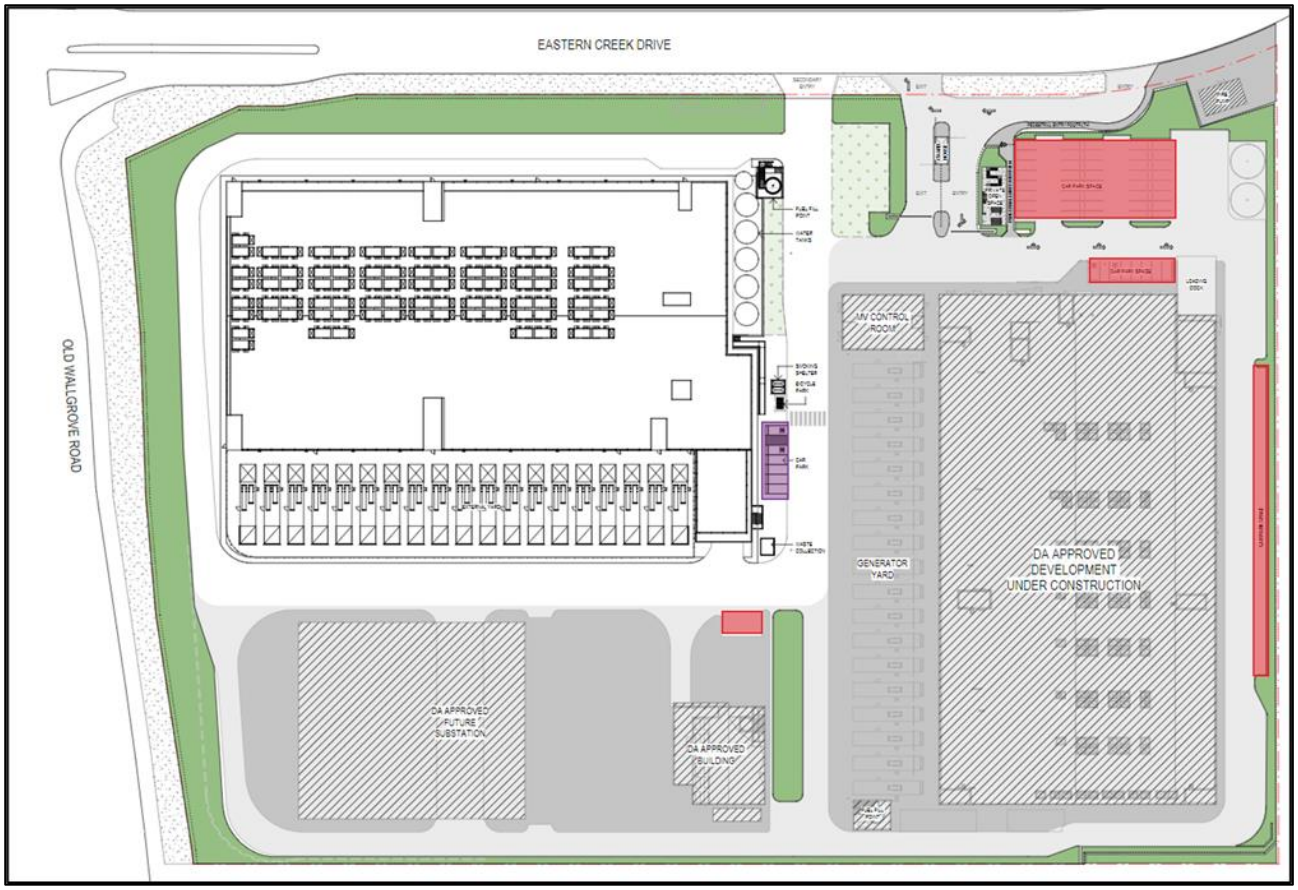

Figure 3-8: Car Parking

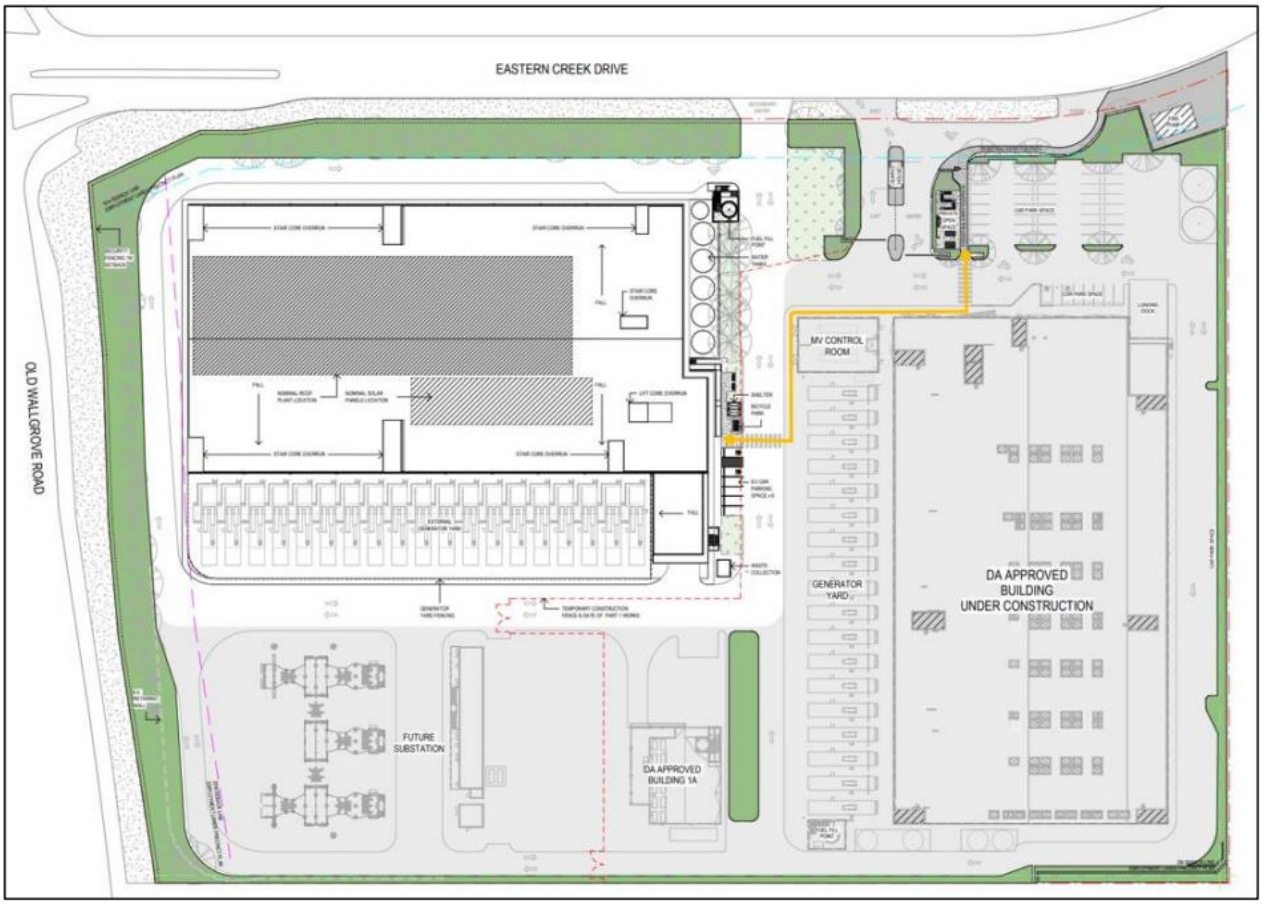

Figure 3-9: Safe route for pedestrians to walk between the Proposal and the car park

Other infrastructure

The following infrastructure would need installing to support the Proposal.

Stormwater | The proposed stormwater drainage consists of pits and pipes designed to drain toward the north, built under the Concept Design Approval works. Local stormwater pipes would be installed under the Proposal to connect into this system.

The stormwater would discharge to the regional detention basin, which would help to regulate flows before entering Eskdale Creek, a tributary of Eastern Creek. The site drainage network would service both data centres and all ancillary infrastructure, such as the access roads, generator yards, and other hardstand areas. Section 5.3.1 of **Appendix Q** provides further details.

Roof drainage | A portion of the Proposal's roof catchment would be diverted to a rainwater harvest tank, located in the northwest of the Site. The rainwater would be used by the evaporative cooling system. It would capture up to 50,000 litres.

Onsite detention and water quality | The Site is located outside of areas in the LGA that require the installation of site-specific detention provisions. Instead, the Site's stormwater would be regulated through the regional detention basin. It would be first passed through gross pollutant traps to screen the water.

Wastewater | The Site's wastewater would drain into the provisions installed to support the wider precinct, including Building 1/1A. It is a gravity-fed system. It would ultimately drain to the Sydney Water sewer network. The toilets and administration building wastewater would drain into this system as would the recirculated water. Demand estimates and further information are provided in **Appendix R**.

Potable water | Potable water (used for drinking and the office amenities) would be supplied from the Sydney Water connection on Eastern Creek Drive to the west of the Site. It would also supplement the rainwater supplies used to cool the centre. The cooling system would recirculate water over three cycles

before discharging it to the wastewater network (see below). Cooling water would be filtered and chemically dosed. Demand estimates and further information are provided in **Appendix R**.

Flood protection | The flood planning level for the Site is set at 0.5 metres above the stormwater drain inlet in the southwest corner. The circulation road around the data centre on the southern and western sides has been designed to allow stormwater to runoff to the west and then to the north. The road grading provides additional protection against runoff during a major storm event or if a drain becomes blocked.

When there is a storm that typically only occurs once every few years, the stormwater would runoff along the internal access road from south to north, ultimately discharging offsite in the northwest corner, after which it would flow overland onto the Building 1/1A site. It would then discharge to the regional detention basin built to service the wider precinct.

Some localised standing water may occur onsite at low points in extreme rainfall events, as was common across large extents of Sydney in 2021 and 2022. However, this would either drain or evaporate over time. Its depth and extent would not be sufficient to present a flood risk or affect the Site's operation.

Other utilities | Utilities such as electricity and telecommunications are described in section 5.3 of **Appendix R.** As described above, the Site would need to connect into the conduits, pits, and nodes installed under the Concept Design Approval.

External security

The Proposal would be located behind security fencing and gates, meaning only approved personnel could access the Site. The Site would be lit with security lighting and designed to prevent crime and promote staff safety.

3.2.3 Land uses and activities

The only activity taking place onsite would be the operation of the data centre. There would be occasional vehicle movements to support this, supplemented by the workforce arriving and leaving at the start and end of each shift (see below).

Most operations would occur during the day. However, the need to operate continuously, means essential site and security staff would be working onsite at night. About 50 people would be needed to operate the data centre. This would drop to a skeleton crew of around five staff out-of-hours.

The routine operations onsite would be:

- General office activities
- Operational traffic movements including deliveries
- Routine equipment testing, including the back-up generators (see section 3.4.2)
- Data storage maintenance and equipment management
- Waste management and removal
- Landscape management and maintenance.

Non-routine operations would involve the occasional replacement of IT infrastructure and supporting equipment.

Operational traffic and deliveries

Operational traffic would be limited to site workers, visitors, and deliveries. There would be about 66 vehicles arriving and leaving site during the day, and five at night. Typical daytime traffic would comprise:

- 19 service vehicles delivering equipment and machinery and removing waste
- 37 employee vehicles
- 10 visitors.

Up to five vehicles would arrive and leave out-of-hours.

Routine testing and maintenance

Equipment and machinery would be routinely tested and maintained as described below.

Routine testing | As noted above in section 3.2.2, the back-up generators would only operate in the event of a mains power outage. To ensure the back-up generators could operate optimally under these exceptional circumstances they would need testing and maintaining.

The operation of each generator would be tested every fortnight. The operational testing would be done in sets of three. Load testing of individual generators would then take place for longer periods every quarter. Finally, each generator would be tested under load as part of a scheduled annual maintenance program (see Table 3-2). This would involve attaching a specific 'load device' to each generator.

Due to the number of generators onsite, it is expected there will be some level of operational testing every week. The testing would be scheduled with Building 1/1A to prevent cumulative impacts. Overall, the testing across Building 1/1A and the Site is predicted to total 162 hours per year on average (see section 5.15 of **Appendix R**).

Table 3-2: Generator testing schedule

Generator Test	Approximate run time	Frequency
Operation test	2 to 5 minutes	Fortnightly
Load test	30 minutes	Quarterly
Load test	60 to120 minutes	Annually

The Proponent has indicated a desire to conduct generator testing at night. This scenario would be assessed during the detailed design. If the night-time noise criteria can be achieved, this would be documented and presented to the relevant authority prior to obtaining the Construction Certificate.

Stormwater maintenance schedule | The Proponent would maintain all stormwater infrastructure onsite. In addition to any specific requirements specified by the manufacturers, the general schedule is summarised in Table 3-3.

Table 3-3: General maintenance schedule summary

O Item	Maintenance task	Frequency	Procedure
Inlet a junction pits	Inside of pits	Six months	Remove grate and inspect internal walls and base, repair where required. Remove any collected sediment, debris, and litter.
	Outside of pits	Four months and after heavy rainfall events	Clean the grate of any collected sediment, debris, litter, and vegetation.
General stormwater system	General inspections of the complete stormwater drainage system	Two years	Inspect all drainage infrastructure recording any dilapidation in structures and carry out repairs that are required.
Gross pollutant traps	Inspect and remove accumulated litter	Three to six months depending on pollutant loads	Remove the lid and inspect the sump. Remove litter with a vacuum hose or mechanical grab.

Waste and recycled material management

Waste and recyclable materials would be removed from the Site by licensed contractors and reused, repurposed, or disposed of at licensed facilities, in line with the NSW Waste Classification Guidelines. **Appendix P** details the waste management requirements.

3.3 Construction details

To suit demand, construction of the data centre would be phased with the internal fit out occurring over time. The utility and service connections would also be installed in phases to complement this.

This section describes the main construction works and timing. The final construction methods and timing would be confirmed during detailed design once a contractor is appointed. The consistency of the final design would be confirmed against the Proposal described in the EIS. If there is a material difference, then a modification to the consent would be sought.

3.3.1 Construction activities

Broadly, the construction work would be scheduled over the following five activities:

- Activity 1 | Site establishment and final site profiling
- Activity 2 | Piling, slab foundations, and utility tie-ins
- Activity 3 | Pavement and external hardstand areas
- Activity 4 | Building construction
- Activity 5 | Plant installation, connection, commissioning, and testing.

Peak construction would occur when the building is being developed (Activity 4).

3.3.2 Phasing

The scheme would be built as a single stage of development, as defined under the EP&A Act. However, Activity 5 would be split across two phases as described below.

Table 3-4: Construction phasing of Activity 5

Built form	Key utility provision
Phase 1 | initial construction and fit out	
Data centre shell Administration facilities Initial internal fit out	Connection to the substation Stormwater and wastewater connections Telecommunication and electricity connections Fire water, potable water, and rainwater harvesting tank installation Installation of the generators to suit fit out staging.
Phase 2 | remaining fit out	
Remaining internal fit out	Installation of the remaining generators to suit fit out staging.

3.3.3 Construction hours and duration

This section describes the time it would take to build the Proposal and the working hours.

Start date and length of construction

The exact construction program would be confirmed during detailed design once a contractor is appointed. However, the total program is anticipated to take about two years, with construction planned to start in early 2023 subject to approval, contractor appointment, and supplies and logistics. Broadly, it would take about 18 months to build Phase 1 (initial construction and fit out) and six months to complete Phase 2 (remaining fit out). Construction would not be continuous meaning there may be a gap between Phase 1 and Phase 2, with the latter phase only being carried out to respond to customer demand.

Working hours

The construction work would be carried out within the following standard working hours:

- 7am to 6pm Monday to Friday
- 8am to 1pm on Saturdays
- No work on Sundays or public holidays.

There are no planned night-works. However, there could be occasions where large over-sized equipment, such as the generators, would be delivered at night, due to road access and safety restrictions. The final decision on this would be confirmed by the contractor and manufacturer, and in consultation with Transport for NSW, Council, and NSW Police.

Coordination with the existing data centre and substation

Construction for the Proposal would not disturb or interrupt the operation or development of Building 1/1A. The subsequent DA being prepared for the substation would need to consider its interface and coordination with the work taking place to build the Proposal.

3.3.4 Workforce

About 100 people would be needed to build the Proposal. However, there would only be typically about 50 workers onsite at any time (see **Appendix I**). This would increase to the full 100-strong workforce when key activities are taking place under Activity 4 (building construction) and Activity 5 (plant installation, connection, commissioning, and testing).

3.3.5 Plant and equipment

The plant and equipment needed to build the data centre would be typical to any major construction site. It would vary depending on the construction activity. The largest and most complex equipment would be needed to build and fit out the data centre during Activity 4 and Activity 5. The most noise intensive activity would take place when establishing the site (Activity 1) and piling the foundations and installing the utility tie-ins (Activity 2).

The following list indicates the likely plant and equipment that would be used to build the Proposal (see **Appendix H**). The final requirements would be confirmed by the contractor:

- Backhoe
- Compactor
- Concrete pump
- Loader
- Roller (smooth drum)
- Roller (vibrator)
- Concrete pump truck
- Crane
- Excavator
- Pavement laying machine
- Scraper
- Truck (>20 tonne)
- Generator
- Grader
- Jack hammer
- Piling rig (impact)
- Truck (water cart)
- Vehicle (light commercial)

3.3.6 Construction compound, materials, and stockpiling

Construction would be contained within the Site. As noted in section 2.1, only about 16 percent of the Site would be occupied by the data hall, meaning there is sufficient space to establish a single compound. The compound would be used to store the equipment, machinery, and vehicles needed to build the Proposal.

The compound would be located away from any environmentally sensitive areas (i.e., ecological, biodiversity, heritage values). It would also be located outside of flood prone land, and it would be over 1.5 kilometres from the nearest residents.

Bulk materials and equipment would be temporarily stored in the compound. The data centre would be built of materials that are commonly used in construction and widely available in Sydney including: aggregate, steel, concrete, glass, metal, landscaping materials, and other prefabricated infrastructure such as signage, lighting, and fencing. The more specialist IT infrastructure would need importing from overseas along with other specialist equipment such as the generators and cooling systems. Small amounts of materials such as oils and fuels would be needed to run and operate the equipment and machinery.

Any potentially contaminating materials would be stored onsite in a secure containment area. This would have sufficient capacity to hold 110 percent of the volume of stored materials, and any spills or discharges would be collected and transported offsite to a licenced facility in accordance with the waste management procedures described in **Appendix P**.

As described above in section 3.3.2, about 16,700 m^3 of fill would be needed onsite, which would be likely supplied from surplus from Building 1/1A. This would either be stored at the site compound or at the compound servicing Building 1/1A. If spoil is stockpiled on the subject Site, it would be in accordance with relevant management guidelines to prevent any leaching, erosion, sediment, and dust dispersion.

Vehicle and equipment maintenance would take place in the compound. This would prevent any containment loss in the event of an accidental spill. Equipment and machinery would not be refuelled onsite.

3.3.7 Traffic management and access

Provisionally, there would be no need to introduce any specific traffic management controls on Old Wallgrove Road or Eastern Creek Drive. However, there may be rare exceptions when large equipment would be delivered to Site, mainly the 19 generators. This would likely take place under escort, via a dedicated route agreed with Transport for NSW, Council, and NSW Police. This may require local roads to be temporarily closed for short periods. It may also require these trips to take place at night when there is less traffic on the road.

During peak construction (Activity 4) about 75 heavy vehicles would arrive and leave site every day. This would be supplemented by around 18 trucks, 50 worker vehicles, and nine smaller construction vehicles arriving in the morning and leaving in the afternoon.

Haul routes

About 70 percent of construction traffic is predicted to arrive from the east via Old Wallgrove Road, from the direction of the M7 Motorway, with the remaining 30 percent heading from the west.

3.4 Design flexibility and potential changes

The EIS has been prepared based on the concept of what would be built onsite and a broad understanding of how it would be built. While there is a degree of certainty in the Proposal, there are elements that would only be confirmed during detailed design or once a construction contractor is onboard. This is typical of most developments and something the NSW Government recognises in its State Significant Development Guidelines (DPE, 2021). Table 3-5 describes those elements of the Proposal where design flexibility has been included. The table also describes how this flexibility has been accounted for in the EIS.

Table 3-5: Design flexibility

Aspect	Why flexibility is needed	How this has been accounted for in the EIS
Operational elements		
External appearance and design	The final form and finish of the data centre needs to account for the availability of materials, costs, and final specifications. This is something that is typically completed as part of the detailed design.	The EIS commits to confirming the final external appearance and design quality of the centre in consultation with Traditional Owners and other stakeholders. It also commits to ensuring the final design is consistent with the Government Architect's Better Placed Guidelines, and other requirements set by the State Government and Council. These finishes would not affect the overall mass, scale, or bulk of the centre, meaning it would not affect the visual impact. If anything, they would achieve the aim of better integrating the Site into its local setting.
Landscape planting schedule	The final planting schedules would be confirmed during detailed design, as this also depends on material availability, cost and final specifications.	The broad landscape design principles are defined in the EIS. They focus on demonstrating how the planting would help improve the visual amenity of the Site, while helping it integrate within the wider area. There is a commitment to ensure the final landscape planting schedules are consistent with the Eastern Creek Precinct Plan.
Routine testing at night	There is a desire to potentially carry out some of the routine generator testing at night as this helps improve maintenance efficiency.	The Proponent has indicated the desire to conduct operational generator testing at night if an acoustic assessment can demonstrate this would comply with the relevant noise criteria. The Proponent would only decide to schedule night-time operational testing during the detailed design, as it is contingent on other factors. If this were the case, the noise impacts would also be assessed at this time. If the assessment confirms that the noise criteria could be adequately achieved, this would be documented and presented to the relevant authority prior to securing the Construction Certificate.
Construction elements		

Aspect	Why flexibility is needed	How this has been accounted for in the EIS
Construction method including timing, material requirements, and equipment schedules	The construction method is based on typical activities and methods used to build data centres. This reflects the Proponent's experience globally.	The final construction methods would only be confirmed once a contractor is appointed. Therefore, the method above has assumed a worst-case scenario, which has been carried through into the impact assessment. This is consistent with the precautionary principle as described in section 6.3.1.
Traffic movement at night	At this stage, it is unconfirmed if any large equipment, and specifically the generators, would need delivering to site at night.	The need to deliver over-sized equipment at night would depend on final specifications and delivery schedules. It would also follow consultation with Transport for NSW, Council, and NSW Police. The need for night-time deliveries would be confirmed during the detailed design and it would be managed under a specific Traffic Management Plan prepared in consultation with the above agencies.

ARUP

EIS

Project Echidna

Chapter 4 | statutory context

Reference: SSD-47320208

Final | 7 October 2022

Job number 288255-02

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4. Statutory context

This Chapter identifies the relevant statutory requirements.

4.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) governs planning and assessment system in NSW. It includes provisions to ensure that potential impacts are assessed and considered when deciding to approve development. The planning pathway for any development under the EP&A Act generally depends on its environmental impact, capital cost, scale, and provisions under other laws and environmental planning instruments (EPIs). The EP&A Regulation 2021, State Environmental Planning Policies (SEPPs), and Local Environment Plans (LEPs) support the EP&A Act.

With specific regard to the Proposal, its planning pathway is governed by the EP&A Act and the following EPIs, which are discussed below in section 4.5:

- EP&A Regulation 2021
- Transport and Infrastructure SEPP 2021
- Planning Systems SEPP 2021
- Industry and Employment SEPP 2021.

4.2 Power to grant approval and permissibility

The permissibility of the Proposal is governed by Schedule 1, Clause 25 of the Planning Systems SEPP. This clause states that "*development for the purpose of premises used for the storage of data and related information technology hardware that has a total power consumption of more than 10 megawatts is of state significance*". Given the Proposal would have a power consumption of more than triple this at approximately 35.2 megawatts, it classifies as State significant development (SSD). This means it is subject to assessment and consent under the provisions of Division 4.7 of the EP&A Act.

Section 4.12 of the EP&A Act states that a "*development application for SSD is to be accompanied by an EIS prepared by, or on behalf of, the applicant in the form prescribed by the Regulations*." Section 192 of the EP&A Regulation sets out the requirements of an EIS (i.e., the prescribed form). It requires that the content of an EIS be "*subject to the environmental assessment requirements that relate to [it]*". These requirements are typically sought through an application for SEARs issued by DPE and are supplemented by the form and content requirements set out respectively under Section 190 and Section 192 of the EP&A Regulation.

As noted in Chapter 1, DPE confirmed the Proposal EIS could be prepared under the industry specific SEARs. These are included in **Appendix A**, showing where each requirement has been addressed in the EIS.

In accordance with section 4.5 of the EP&A Act, the consent authority for the Proposal would either be the NSW Minister for Planning or the Independent Planning Commission (IPC)[1].

SSD applications are evaluated and determined in line with the requirements of Section 4.15 of the EP&A Act. Matters for consideration include likely impacts as defined in the SEARs, relevant EPIs, the site's suitability, submissions made on the application, and public interest (see Chapter 7).

4.3 Other approvals

Section 4.41 and Section 4.42 of the EP&A Act identify authorisations that are not required for an SSD application, and authorisations that cannot be refused if they are needed to carry out the SSD. While certain applications are not required, the EIS must still assess their impact. Table 4-1 lists these authorisations.

[1] The IPC becomes the consent authority if the Proponent has made a public donation, Council makes a submission on the displayed EIS, or there are more than 50 public submissions.

Table 4-1: Approvals not required under Section 4.41 of the EP&A Act

Approval	Relevance in relation to the EIS
A permit under section 201 of the *Fisheries Management Act 1994*	The Proposal would not involve any dredging or reclamation works.
A permit under section 205 of the *Fisheries Management Act 1994*	The Proposal would not impact on key fish habitat as there are no works proposed in waterways.
A permit under section 219 of the *Fisheries Management Act 1994*	The Proposal would not result in the blockage of a fish passage and no works are proposed in waterways.
An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*	There is no heritage record onsite or locally, as confirmed in section 6.14. The nearest heritage item is 300 metres northwest of the Site. This is beyond the limit of impact.
An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*	The application prepared to support the Concept Design Approval included an Aboriginal heritage assessment. This confirmed that there is no heritage record onsite or locally (see section 6.11).
A bushfire safety authority under section 100B of the *Rural Fires Act 1997*	A search on the NSW Rural Fire Service Planning for Bush Fire Protection website in 2022, confirms that the Site is not located on bushfire prone land (see section 6.14).
Water-use approval (section 89), water management work approval (section 90) or an activity approval, other than an aquifer interference approval (section 91) under the *Water Management Act 2000*.	There is no intended water-use onsite that would otherwise need approval, while there is no need to carry out any water management work onsite. Excavations during construction may intersect the shallow groundwater table as noted in **Appendix K**. Any temporary or permanent interaction would be confirmed following further geotechnical studies carried out during detailed design. The key cause of any impact on the groundwater would be due to the installation of the piles needed to support the centre's slab foundation. However, the scale of the impact would not be sufficient to interfere with the aquifer to the extent that it would require an associated licence under the *Water Management Act 2000*.

The following approvals cannot be refused if they are needed to support the SSD.

Table 4-2: Approvals that cannot be refused under Section 4.42 of the EP&A Act

Approval	Comment
An environment protection licence (EPL) under Chapter 3 of the *Protection of the Environment Operations Act 1997* (POEO Act).	An EPL is not needed as the Proposal is not classified as a scheduled activity under the POEO Act for the reasons described below in section 4.7.2.
A licence under section 138 of the *Roads Act 1993*.	At the minute there is no planned activity under this Proposal that would require occupancy of a public road as the associated road works form part of the Concept Design Application. While there may be the need to occasionally transport over-sized equipment to site, this would be subject to a specific agreement with Transport for NSW, Council, and the NSW Police (see section 3.4) and it is not typically done under a road occupancy licence.

4.4 Core mandatory considerations

The Minister or IPC must consider the matters listed under Section 4.15 of the EP&A Act when determining the development application. The table below outlines each matter and the location where it is addressed in the EIS.

Table 4-3: Matters of consideration under Section 4.15 of the EP&A Act

Matter	Reference
Any of the following provisions as they relate to the Proposal, Site, or wider locality:	
Any environmental planning instrument	Section 4.6
Any proposed instrument that is, or has been, the subject of public consultation under the EP&A Act	There are no draft instruments that are relevant to the Proposal, Site, or locality.
Any development control plan	Section 4.6
Any planning agreement	Section 4.5.4
The Regulations	**Appendix C**
The likely impacts of the development, including environmental impacts on both the natural and built environment, and social and economic impacts on the locality	Chapter 6 and **Appendix F** to **Appendix X**.
The suitability of the Site for the development	Chapter 2, Chapter 3, Chapter 6, and Chapter 7.
Any submissions made in accordance with the EP&A Act or Regulations	Chapter 5, and ultimately the content of the Response to Submissions Report (see section 1.1).
The public interest.	Chapter 5, the content of the Response to Submissions Report (see section 1.1), and Chapter 7.

4.4.1 Objects of the Environmental Planning and Assessment Act 1979

The objects are guiding principles that are considered by DPE, when making planning decisions under the EP&A Act. They provide a framework to help DPE assess if the Proposal is consistent with the wider provisions of the Act. A summary of the relevant objects is provided in Table 4-4.

Table 4-4: Assessment against the objects of the EP&A Act

Object of the Act	Comment
To promote the social and economic welfare of the community and a better environment by the proper management, development, and conservation of the State's natural and other resources.	The Proposal would not result in any apparent unjustified or unmanageable environmental or social impacts, as confirmed through carrying out the detailed assessment summarised in Chapter 6. Therefore, the Proposal offers a favourable environmental outcome. As noted in Chapter 2, the Proposal supports Sydney's orderly transition to a digital economy. It helps provide wider access to data both for individuals and for a range of other uses, potentially including institutes that deliver social and economic welfare, such as the health sector. Locating the Proposal on a site designated for industrial use helps conserve other areas of the State that have a higher natural capital value. This means the Proposal would be delivered in an area recognised for its reduced environmental sensitivity and suitability to support a data centre. Finally, the Proposal includes a series of ecologically sustainable development (ESD) commitments, which aim to reduce the impact on the State's natural capital (see section 6.3).
To facilitate ESD by integrating relevant economic, environmental, and social considerations in decision-making about environmental planning and assessment.	The Proposal has considered and facilitated ESD for the reasons described in section 6.3. In summary, it delivers the social and economic benefits of data security across Sydney, and it could achieve this without an unacceptable loss of natural, social, cultural, and economic capital for current and future generations, as described further in Chapter 6 and Chapter 7.
To promote the orderly and economic use and development of land.	The Proposal would be built on land specifically zoned under the Industry and Employment SEPP for industrial use. This land was zoned by the NSW Government as part of the wider initiatives to promote and balance the orderly use of certain land for economic activity, while being careful to protect and enhance areas of higher environmental value, such as the nearby Western Sydney Parklands. By building the Proposal on appropriately zoned land it is inherently consistent with the Government's promotion of the orderly and economic use and

Object of the Act	Comment
	development of land, as managed through the zoning provisions and development controls set out in the above SEPP.
To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities, and their habitats	As noted above, the Proposal would be built on land specifically zoned for industrial use. This reflects its reduced environmental sensitivity and value. The Site is also located away from the important natural values of the Western Sydney Parklands and Prospect Reservoir to the east, while being over 1.5 kilometres from the nearest residential areas. Collectively, this would help maintain the social, environmental, and natural capital of the wider area, including any threatened and native species. There is no biological diversity, ecological integrity, or threatened or native species impacted by the Proposal, as the Site is cleared and levelled. There are also various standard measures available that are proven in being effective to protect the environment during construction and operation. These are described in Chapter 6.

4.5 Environmental planning instruments

As noted above under section 4.1, there are three key instruments that are relevant to the Proposal.

4.5.1 State Environmental Planning Policy (Planning Systems) 2021

The Planning Systems SEPP identifies State or regionally significant development and infrastructure. As noted above, the Proposal classifies as SSD due to it being a data storage facility that would consume more than 10 megawatts of power. This classification was introduced after the Concept Design Application was approved. This is the reason why approval for the second data centre (i.e., the Proposal) is being sought under this planning pathway.

4.5.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

The Transport and Infrastructure SEPP defines what types of development can be built in NSW. It also sets restrictions on whether the development needs consent, or if the development can only be built in certain land use zones. Data centres can be built on industrial land zoned IN1 with consent. As noted, this is the land use zoning on the subject Site. Therefore, the proposal is permissible providing consent is secured either from the Minister or IPC in this case (see section 4.2).

4.5.3 State Environmental Planning Policy (Industry and Employment) 2021

The Industry and Employment SEPP 2021 identifies planning provisions that apply to employment land in Western Sydney. The Site is located within the land covered by the SEPP (see Figure 4-1). The above SEPP is therefore the main instrument that defines the planning requirements and development controls onsite. It prevails over any other instrument. Key is that the SEPP maintains the provisions and controls that were developed for the Site under SEPP 59, the Eastern Creek Precinct Plan.

State Environmental Planning Policy 59 – Eastern Creek Precinct Plan (Stage 3) 2005

The SEPP includes various principles, objectives, and development controls that are relevant. Table 4-5 summarises these, highlighting the technical appendices where the detailed controls are fully considered.

Table 4-5: Eastern Creek Precinct Plan (Stage 3) principles and objectives

Key principles	Select objectives	Summary
Section 10 | traffic and transport		
Recognise the need to integrate all transport modes.	Establish transport infrastructure that serves the needs of the precinct and integrates and improves the operation of the regional transport network. Provide transport infrastructure that integrates with all modes. Develop measures to mitigate potential development-generated transport impacts.	In summary, the Proposal supports walking and cycling by including six bicycle spaces and initiatives to promote an active lifestyle amongst the workforce (see section 6.2.4). It also provides immediate access to two bus stops that are on routes that service the adjacent residential areas. The Site includes end-of-trip facilities. Finally, the parking allocation reflects the number of people that

Key principles	Select objectives	Summary
		would be working across Building 1/1A and the Site at a given time plus an allowance for visitors. The controls are fully considered in **Appendix I.**
Section 11 | urban design		
Achieve the best possible urban design outcome including landscape and visual character.	Ensure there is substantial perimeter planting and landscaping. Protect and enhance significant existing vegetation. Achieve attractive streetscapes and landscaped settings. Use setback areas for landscape provisions. Ensure the buildings are of an acceptable bulk and scale. Encourage innovative building design, quality and consistency of the façade and external finishes, and ensure the height is compatible with development in the wider precinct. Enhance the area's visual quality through the selection of appropriate materials and colours, while using materials with a low environmental impact. Integrate ancillary facilities into the urban design.	Section 3.3.2 explains how the landscape and urban design strategy has been developed to respond to the objectives, principles, and controls of the above SEPP. Broadly, the data centre would occupy about 16 percent of the Site. This means there is sufficient room to accommodate the required landscape planting and setbacks. A key aim is to retain the mature wattle trees fronting the Site, while improving planting onsite to help screen and improve the centre's amenity. This would have the secondary benefit of providing passive cooling. The Site façade and design also replicates the Council-approved design of Building 1/1A to provide the needed continuity and consistency across the Site. Finally, the overall mass, scale, and height of the Proposal replicates Building 1/1A, which in turn is consistent with the development occurring across the wider precinct. The controls are fully considered in **Appendix V**
Section 14 | landscaping		
Provide an attractive and sustainable setting for development that reflects the physical and cultural context of the precinct.	Encourage a high landscaping standard to enhance the streetscape and amenity of the area. Select species and planting patterns that complement the characteristics of the Cumberland Plain Woodland in the area. Landscape and maintain outdoor areas. Enhance the appearance, amenity, energy, and water efficiency of the development.	Building on the above, section 3.2.2 describes how the Proposal's landscaping and planting strategy adopts the objectives of section 14 of the SEPP. In response, the strategy serves to meet the corresponding controls by maximising green space around the building to create an amenity buffer. It also includes species that are consistent with the Council's planting strategy. This includes drought tolerant species that have low maintenance and watering requirements. Again, the strategy aims to provide consistency across the Site and Building 1/1A. This includes focussing on improving the amenity value and experience of the Site and area. The controls are fully considered in **Appendix S**

4.5.4 Planning agreements

As noted in section 1.4.1, the Proposal is not restricted by any existing covenants. This is because the Proponent owns the Site, and the previous development applications and consents addressed any existing land use issues and constraints.

There are also no voluntary or negotiated agreements needed to support the Proposal. This is because the public infrastructure and utility provisions needed to service the Site have already been installed under the Concept Design Approval.

4.6 Local planning policies

As noted above, while the Site is in Blacktown LGA, its planning and development control is provisioned under SEPP59. This means any of the spatial planning requirements under the corresponding Council LEP and development control plan (DCP) are not relevant to the Site. Notwithstanding this, relevant sections of the DCP have been considered to understand Blacktown City Council's development aspirations in the area. Also, SEPP59 was developed to align with the Council's planning framework. Therefore, by being consistent with the SEPP, the Proposal would be generally consistent with the Council's local planning policy.

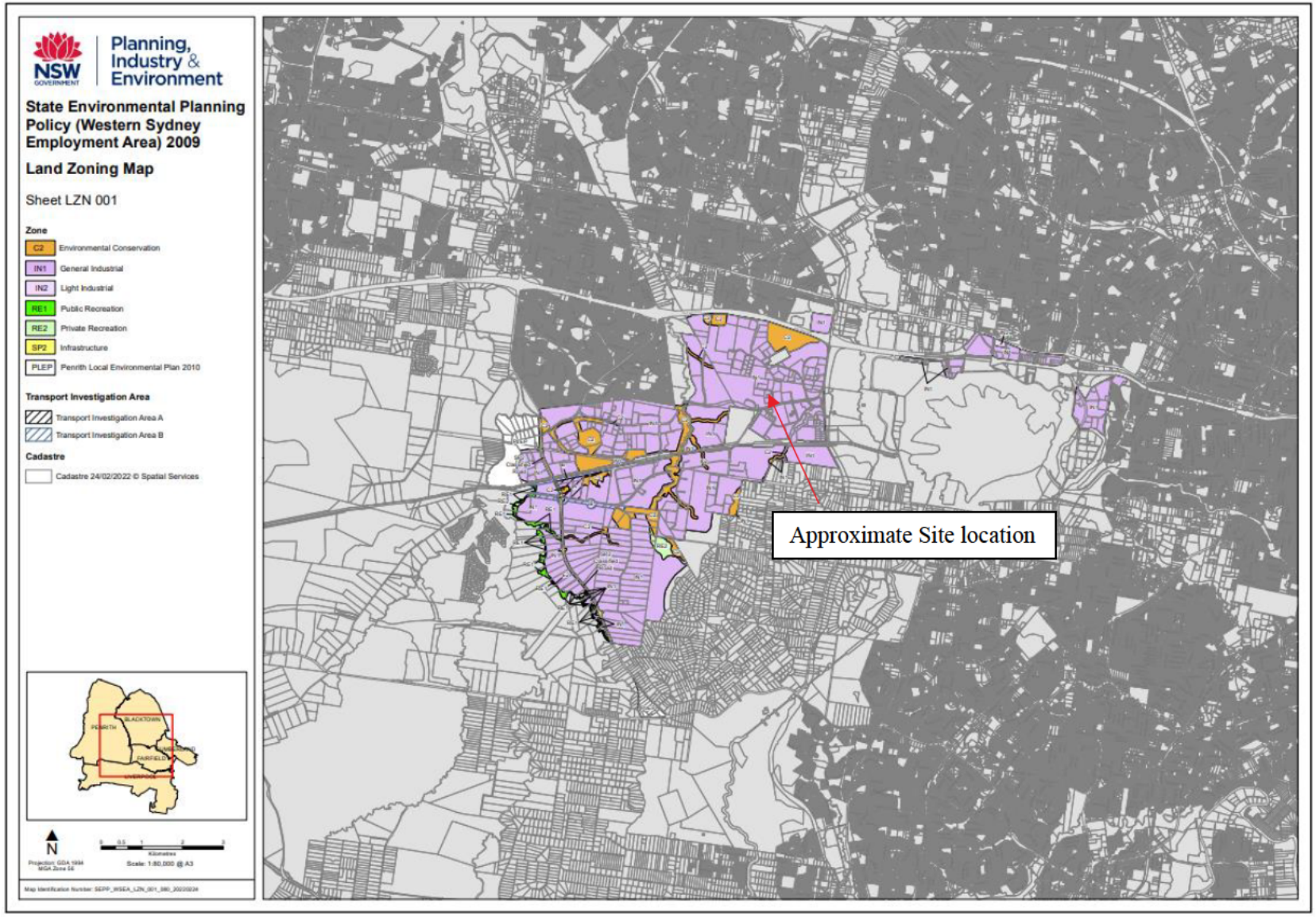

Figure 4-1: Land zoning map

4.7 Other key NSW legislation

This section describes the other applicable legislation.

4.7.1 Biodiversity Conservation Act 2016

The objective of the *Biodiversity Conservation Act 2016* is to maintain a healthy, productive, and resilient environment for the greatest well-being of the community, now and into the future, consistent with ESD principles (see section 6.3.1).

Under section 7.9 of the BC Act, a Biodiversity Development Assessment Report (BDAR) needs to support an SSD application unless the Planning Agency Head and the Environment Agency Head determine that there is unlikely to be a significant impact on biodiversity values. In the case of the Proposal a waiver was requested in July 2022 and granted in August 2022. **Appendix F** includes the waiver.

4.7.2 Protection of the Environment Operations Act 1997

The objective of the POEO Act is to provide environmental protection by minimising pollution, managing waste, and issuing licences for high-risk activities due to their pollution risk and/or they involve complex waste management issues. These licences are activity-based rather than site or Proposal based. The following activities are taking place onsite that are in Schedule1 of the Act; chemical storage and electricity generation. However, neither of them triggers the threshold criteria that require an EPL. Specifically:

Up to 400,000 litres of diesel would be stored onsite (see section 3.2.2). This is about 340 tonnes[2], which is well below the 2,000-tonne chemical storage limit requiring an EPL defined under Schedule 1(9) of the POEO Act.

The onsite diesel generators would be routinely tested, which across Building 1/1A and the Site, would total around 162 hours every year (see section 3.2.3 and section 5.15 of **Appendix R**). Even if there was an outage, the Australian Energy Regulator (AER) estimates that these typically last for less than an hour and have about a 0.05 percent chance of occurring each year[3]. This is below the 200-hour limit requiring an EPL defined under Schedule 1(17) of the POEO Act.

4.8 Additional NSW legislative provisions

The following legislation is considered throughout Chapter 6 and the supporting technical appendices:

- *National Parks and Wildlife Act 1974*, as it relates to the protection of Aboriginal heritage values
- *Heritage Act 1977*, as it relates to the protection of non-Aboriginal heritage values
- *Waste Avoidance and Resource Recovery Act 2001*, as it relates to the need to employ a hierarchy to reduce consumption and to promote recovery and recycling in favour of waste disposal
- *Biosecurity Act 2015*, as it relates to the need to manage pests, pathogens, and weeds
- *Plastic Reduction and Circular Economy Act 2021*, as it relates to the need to promote circular economy principles and reduce plastic use and waste.

4.9 Commonwealth legislation

This section describes the relevant Commonwealth legislation.

4.9.1 Environment Protection and Biodiversity Conservation Act 1999

The Australian Government *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the primary environmental legislation at the Commonwealth level to protect and manage Matters of National Environmental Significance (MNES) and activities on Commonwealth land. Activities that have the potential to significantly impact MNES or Commonwealth land would require a referral to the Australian

[2] Convert diesel [metric ton] to litre - Volume Units Conversion Calculator (gowebtool.com)

[3] Taken from the System Average Interruption Duration Index (SAIDI)

Government. In the case of the Proposal, it is not located on Commonwealth land. A search of the Protected Matters Search Tool in 2022 confirmed there are eight listed threatened ecological communities, 52 listed threatened species and 15 listed migratory species records within 10 kilometres of the Site (see **Appendix C**). Despite this, given the Site is cleared of vegetation and contains no nationally important heritage items, there is no potential impact, or risk of an unexpected impact on MNES. Therefore, the Proposal has not been referred to the Australian Government.

4.9.2 Disability Discrimination Act 1992

The *Disability Discrimination Act 1992* defines the mechanism to ensure public and workplaces can be made fully accessible. Two parking spaces onsite would be allocated to low mobility access. They have been designed to comply with this Act http://www.legislation.gov.au/Series/C2004A04426 and the corresponding Australian Standards. The same is true of the data centre and outdoor spaces as described in **Appendix V**.

ARUP

SSD

Project Echidna

Chapter 5 | engagement

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5. Engagement

This Chapter summarises the findings of the community engagement carried out when preparing the EIS. It also summarises the planned future engagement. The full engagement report is provided in **Appendix N**.

5.1 Engagement approach

Consultation with various stakeholders and community members is an ongoing process. The adopted engagement approach was guided by the Core Values and Public Participation Spectrum (IAP, 2017). The Spectrum defines the public's role in any community engagement program. The "consult level" of engagement was adopted. This was valid over the more "empowering levels" of engagement given the Site's location in a designated industrial area, and it being over 1.5 kilometres from the nearest residents.

The aim of this level of participation is to "*obtain public feedback on the analysis, alternatives and/or other decisions*". This is underpinned by the promise to "*keep the public informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced decisions*" around the EIS and the Proposal.

A mapping and analysis process was carried out to identify key stakeholder and community groups. A summary of the engagement is provided in section 5.3 and section 5.4 below.

5.2 Engagement objectives

The following objectives were applied to support the engagement activities:

- Identify the people or groups who are interested in, or are likely to be affected by, the Proposal
- Use appropriate engagement techniques
- Accord with the Proponent's cultural protocols for engagement
- Ensure stakeholders and the community are provided with safe, respectful, and inclusive opportunities to express their views
- Involve stakeholders and the community early in the Proposal's development to allow their views to influence project planning and design decisions
- Tailor engagement activities to suit the:
  - Context (e.g., sensitivity of the Site and surrounds)
  - Scale and nature of the Proposal and its impacts
  - Level of interest
- Provide clear and concise information about what is proposed, its likely impacts, and how these would be managed
- Clearly outline how and when the community can be involved in the process
- Make it easy for the community to access information and provide feedback
- Identify opportunities for connecting the proposed development to Country.

5.3 Community consultation

The purpose of this engagement was to provide clear and concise information about the Proposal and its impacts, implement activities to encourage community participation, and consolidate community views, concerns, and feedback. The key stakeholder and community groups were:

- Adjoining landowners/leaseholders
- First Nation representatives and Traditional Custodians.

5.3.1 Community engagement

This involved a targeted stakeholder and community information session held on 8 August 2022. An invitation to an online event was sent to landowners and leaseholders via email and post.

The information session introduced the Proposal. It was an opportunity to raise any issues or concerns and provide feedback regarding the Proposal.

A separate consultation session was held with the Traditional Custodians (members of the Dharug Nation) on 9 August 2022. It introduced the Proposal, the Better Placed: Draft Connecting with Country Framework, and identified opportunities and next steps for connecting the Proposal to Country.

5.3.2 Community views

Table 5-1 summarises the views regarding the Proposal raised in these two sessions.

Table 5-1: Key issues raised through community consultation

Consultation	Response received	How this has been considered and addressed
8 August 2022 Targeted stakeholder and community information session	One landowner joined the session. They were interested in the proposed Site layout. They were not concerned about the Proposal, commenting that another data centre was being built farther down the road.	Alternatives for the site-layout were considered (see section 2.6.3). The final layout considered the topography, access, and existing infrastructure, as well as the need to respond to the character of the surrounding industrial area. The proposed configuration was chosen because it would effectively integrate with Building 1/1A aesthetically, technically, and functionally. This information was provided to the stakeholder.
9 August 2022 Traditional Custodian consultation	The two attending stakeholders provided the following suggestions. They noted that the Proposal's design and conceptualisation should include consultation with the Local Aboriginal Land Council, and the Traditional Custodians and Elders who are able to speak on behalf of the Country. They suggested including native plants as part of the landscape and planting strategy to "*bring back something of what was there*" and "*as part of the way to care for the Country*".	Consultation with the Traditional Custodians, and specifically the Elders, will be ongoing. This will allow opportunities to be identified to inform the Proposal's detailed design and delivery, and the ongoing operation of the Site. This will align with the Connecting with Country Framework as discussed further in **Appendix N**. The Proposal incorporates native plants as part of the landscape and planting strategy discussed in **Appendix S**.
	There was the suggestion to perform a smoking ceremony and traditional dance as construction starts and once the data centre opens.	These suggestions have been included as mitigation measures in section 6.11.4.
	There were suggestions to create First Nation employment opportunities, while helping the employees understand and respect the First Nation culture of the Country. The ideas around this were recognising events such as NAIDOC in a meaningful way, supporting both First Nation and non-Aboriginal staff, and being considerate and understanding of cultural obligations, including, but not limited to, supporting Sorry Business.	These suggestions have been included as mitigation measures in section 6.11.4.

5.4 Government agency and key stakeholder consultation

Government agency and key stakeholder consultation was used to develop the concept design and scope the environmental assessment. The following relevant Government agencies and key stakeholders were consulted:

- Western Parkland City Authority
- NSW Department of Planning and Environment (DPE)
- NSW Environment Protection Authority (EPA)
- Blacktown City Council
- Transport for NSW
- Heritage NSW.

5.4.1 Government agency and key stakeholder engagement

Letters and emails were sent to the above. They were used to seek feedback, and identify key environmental issues and opportunities, potential safeguards, and management measures. A scoping meeting with DPE was also held on 8 August 2022.

5.4.2 Government agency and key stakeholder views

Table 5-2 summarises the Government agency and key stakeholder views regarding the Proposal.

Table 5-2: Key issues raised through Government and key stakeholder consultation

Consultation	Response received	How this has been considered and addressed
Government letters and emails	Western Parkland City Authority advised that the Site is not within their area and as such they did not comment on the Proposal. Heritage NSW advised that they do not issue waivers of any kind for Aboriginal cultural heritage but accepted the findings of the Concept Design Approval. EPA requested additional information relating to the amount of diesel stored onsite and the back-up generator testing schedule. This was to understand if an EPL would be needed. Blacktown City Council and Transport for NSW were invited to provide feedback to Arup before 18 August 2022. At time of writing this EIS (7 October 2022) no contact or feedback has been received from Blacktown City Council or Transport for NSW.	Section 6.11 confirms the low heritage risk given that the Site has been cleared and was subject to an assessment of values and impacts as part of the Concept Design Approval. As noted in section 4.7.2, despite storing around 340 tonnes of diesel and testing the back-up generators for about 162 hours per year, these are below the thresholds where an EPL is needed.
Pre-lodgement meeting	DPE requested that the EIS demonstrates how the Proposal relies on the substation and explain that this would be built under a separate development application. DPE also advised on the need to be clear about cumulative impacts. It was suggested that the EIS clearly assesses the Proposal's impact and then the additive impact of both data centres (and potentially the substation) operating together, as per the Cumulative Impact Assessment Guidelines for State Significant Projects (DPE, 2021). DPE specifically requested that the air and noise assessments consider a worst-case, reflecting the exceptionally unlikely scenario of the back-up generators operating at full capacity due to a power outage. DPE recognised that the impact of this is likely to exceed the guidelines but appreciates the frequency and duration of needing to use the back-up generators in an outage would be exceptionally low.	As noted in Chapter 2, the substation would be built to service Building 1/1A and the Site. It would be built before the Site is operational and it would be given consent under a separate development application. Further details are provided in **Appendix R.** Section 6.1 to section 6.14 have considered the Proposal's impacts in isolation of other committed and approved development. Section 6.15 then assesses the combined cumulative impacts of the Site, Building 1/1A, and the substation, and those generated from other development taking place in the area. The air and noise assessments (see section 6.4 and section 6.5 respectively) assess two operating scenarios. The standard scenario considers the Site's normal operation and the operational testing of the back-up generators based on the schedule in section 3.2.3, and an emergency scenario, which assumes all the generators to be operating onsite under a reduced load.

5.5 Ongoing and future consultation

Following the EIS lodgement, we expect DPE to continue to seek comments from relevant agencies and the community throughout the public exhibition phase. Issues raised during this process will be considered by the broader project team and a Response to Submissions Report will be prepared.

Consultation with the wider Traditional Custodians, Elders, and key First Nation stakeholders will be ongoing. This will be with a view to arranging a second consultation session to identify additional opportunities for connecting the Proposal to Country.

Beyond this, the Proposal's detailed design will continue to account for First Nation stakeholder suggestions regarding architectural details.

5.5.1 Response to submissions

This EIS will be placed on public exhibition. It will offer an opportunity forGovernment agencies, stakeholders, and the community to provide comments. Following this, DPE will consolidate any submissions. The Proponent will provide responses in the Submissions Report. If the comments require any adjustments, refinements, or amendments to the Proposal, these would be provided.

The Response to Submissions report will also be published. Those who made submissions will be notified regarding their comments and a community update will be distributed. This update will summarise the process and any relevant actions taken to address these comments.

5.5.2 Construction consultation

The appointed contractor(s) will be required to consult with the community, Blacktown City Council, relevant Government agencies, First Nation stakeholders, and utility providers prior to, and during, construction. This process would be managed under the construction environment management plan (CEMP, see **Appendix E**). The CEMP would include specific consultation and notification processes. It would also include a complaints handling, and reporting, corrective action, and feedback process.

5.5.3 Operational consultation

The Site would adopt an operational environment management plan (OEMP). Consistent with the CEMP, the OEMP would maintain specific consultation and notification requirements along with a complaints handling, and reporting, corrective action, and feedback process.

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EIS

Project Echidna

Chapter 6 | assessment of impacts

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Tables

6. Assessment of Impacts

This section summarises and assesses the Proposal's impacts. The summaries should be read in conjunction with **Appendix F** to **Appendix X**, which include various technical studies and supporting information. Section 6.1 to section 6.14 consider the Proposal's impact, while section 6.15 considers the cumulative impact of both data centres and the substation.

6.1 Visual impacts

This section summarises the potential visual impacts. **Appendix X** includes the supporting technical assessment.

6.1.1 Method

Architectural drawings (see **Appendix B**) and landscape plans (see **Appendix S**) were prepared to indicate what the built Proposal would look like from key viewpoints. The visual impact assessment used this to:

- Establish and clarify the existing character and sensitivity of the surrounding landscape/streetscape
- Define the theoretical area where it would be possible to see the Proposal
- Consider how the Proposal would impact on workers, visitors, and other sensitive users.

The impacts were rated from *negligible-to-high* using a matrix. This considered the sensitivity of receivers to the changes introduced under the Proposal (scale of impact) and the likelihood of visual impacts occurring. The impact ratings are defined in section 4 of the Guideline for Landscape Character and Visual Impact Assessment - Environmental Impact Assessment Practice Note EIA-N04 (Transport for NSW, 2020).

Lighting impacts were assessed against the criteria in AS 4282: 2019 Control of the Obtrusive Effects of Outdoor Lighting (Standards Australia, 2019).

6.1.2 Existing environment

The following section describes the area's visual amenity, while describing the key locations where the Site would be visible, known as viewpoints.

Visual amenity

Eastern Creek Precinct is currently undergoing significant development. The local area is characterised its intended industrial use, with several currently undeveloped parcels of land. The immediate locality of the Site is within an IN1 General Industrial zoned area, and comprises various industrial uses, supplier warehouses, distribution centres, and freight transport facilities. Collectively, these uses shape and frame the area's characteristic industrial and transitionary setting.

The subject Site was cleared and levelled under the previous Concept Design Approval (see section 1.3). This means it currently holds little landscape or amenity value in preparation for the Proposal.

Viewpoints and receivers

Visual receivers are individuals and/or groups of people whose views may be affected. Key receivers for this Proposal are road users in the area (pedestrians, cyclists, motorists), and workers or visitors to the nearby business enterprises. Given the nearest residents are over 1,600 metres from the Site (see section 6.5.2), in an area with a relatively flat topography (see section 6.7.2), the people living in Minchinbury or Horsley Park would not be able to see the centre.

Five viewpoints were chosen to represent the change in views from publicly accessible areas. Table 6-1 below summarises the characteristics of each viewpoint. All viewpoints represent workers and visitors to these premises or road users passing through the area. This means the sensitivity of the visual receivers surrounding the Proposal is generally *low*. Figure 6-1 shows the location of each viewpoint. Note that not all viewpoints included within this figure were assessed as part of this visual impact assessment. This is because the five assessed viewpoints were considered to provide a representative view of the Proposal.

Table 6-1: Visual receivers (viewpoints)

Viewpoint	Description
Eastern Creek Drive	
A | facing east	Nearby business driveway at 46 Eastern Creek Drive
B | facing north	Adjacent business driveway of 45 Eastern Creek Drive
C | facing east	Directly opposite facing the western elevation of the building.
Old Wallgrove Road	
D | facing east	Approaching the intersection between Old Wallgrove Road and Eastern Creek Drive, while travelling east along Old Wallgrove Road.
E | facing west	Approaching the intersection between Old Wallgrove Road and Eastern Creek Drive, while travelling west along Old Wallgrove Road.

Figure 6-1: Viewpoints

Ambient light levels at night

The area is lit at night. This includes street lighting along Eastern Creek Drive and Old Wallgrove Road. Also, the existing industrial uses in the area include outdoor site and security lighting. The levels of artificial light are likely to increase over time as the area becomes more industrially developed.

6.1.3 Assessment

The following section assesses the proposal's impact on the area's visual amenity.

Construction

Certain visual impacts would first occur during construction because of the activities taking place onsite. Additionally, visible construction elements would typically include site hoardings, and the introduction of equipment and machinery (see section 3.3.5).

This work would temporarily affect the visual amenity of local road users and people working or visiting the area. The change in amenity would be relatively minor as there is an acceptance that the area is being progressively developed. Based on their temporary nature, the magnitude of the changes at all viewpoints would be *moderate-low*. Therefore, the overall visual impact is rated *low-negligible*, even during the more intensive construction periods (see Activity 4 in section 3.3.1).

The construction work would take place during standard working hours (see section 3.3.3). This would reduce the need to use outdoor lighting other than during the winter months at the start and end of the day, or when light levels are low onsite, such as in dull weather. However, security (motion detection) lighting would be installed during construction. While this lighting would be visible at a distance, there are no sensitive land uses sufficiently close to the Site to have their amenity impacted as defined under AS 4282: 2019. There is also no light sensitive ecology in the area that would be affected by construction lighting.

Operation

The intention to introduce landscaped areas around the data hall would offer a level of amenity. This means, while road users, workers, and visitors would be aware of the Site, it would integrate with the area's industrial character and setting. It is also the case that the Site would be designed in response to the Better Placed policy (NSW Government, 2017). This means the Proposal has been designed to respect its modern industrial setting, on the traditional lands of the Dharug People, and within the context of the Cumberland Plain, and its characteristic woodland. The design response also respects the wider themes across the area, while being complementary to the approved design that is being adopted for Building 1/1A. Section 3.2.2, **Appendix S**, and **Appendix V** provide more details on the proposed design response and landscape and planting strategy.

While there would be a perceived change, and the Site would be clearly visible from all viewpoints, it would be developed to enhance the amenity of the area. The impact of this would be subjective. For those receivers who perceive the introduction of the Proposal on previously undeveloped land, they would rate the impact negatively. Conversely, for those receivers who appreciate that the Proposal is part of the area's wider redevelopment, they would likely perceive the design, landscape, and planting strategy positively. See **Appendix X** for further information.

Table 6-2 below summarises the visual impacts at the specified viewpoints before and after mitigation. The table assumes the worst-case, namely that the Proposal would be perceived negatively. The post-mitigation assessment considers the impact once the planned landscaping has established and matured, and the visual elements of the building have weathered and settled into their landscape setting. Figure 6-2 to Figure 6-6 below show photomontages of the scheme from the viewpoints with the mitigation in place.

Table 6-2: Viewpoint analysis summary

Viewpoint	Sensitivity	Pre-mitigation		Post-mitigation	
		Magnitude	Rating	Magnitude	Rating
Eastern Creek Drive					
Viewpoint A	Low	Moderate	Moderate-Low	Low	Low
Viewpoint B	Low	High	Moderate	Moderate	Moderate-Low
Viewpoint C	Low	High	Moderate	High	Moderate
Old Wallgrove Road					
Viewpoint D	Low	High	Moderate	High	Moderate
Viewpoint E	Low	High	Moderate	High	Moderate

While some of the ratings in the table above remain unchanged, this reflects the contrast of introducing the Proposal relative to the existing undeveloped condition on Site. However, as noted above, the Proposal represents part of an ongoing change in the area. This would fundamentally alter the whole of the area's visual amenity and character. Therefore, over time the Proposal's visual impact would reduce as the rest of the Precinct is developed.

The Site would be lit at night for security purposes. This would contribute to an increase in artificial light in the area. As above, there are no sensitive land uses sufficiently close to the Site to have their amenity impacted as defined under AS 4282: 2019. Also, the lighting would be designed to reduce spill and glare.

Figure 6-2: Viewpoint A | from Eastern Creek Drive facing East

Figure 6-3: Viewpoint B | from Eastern Creek Drive facing north

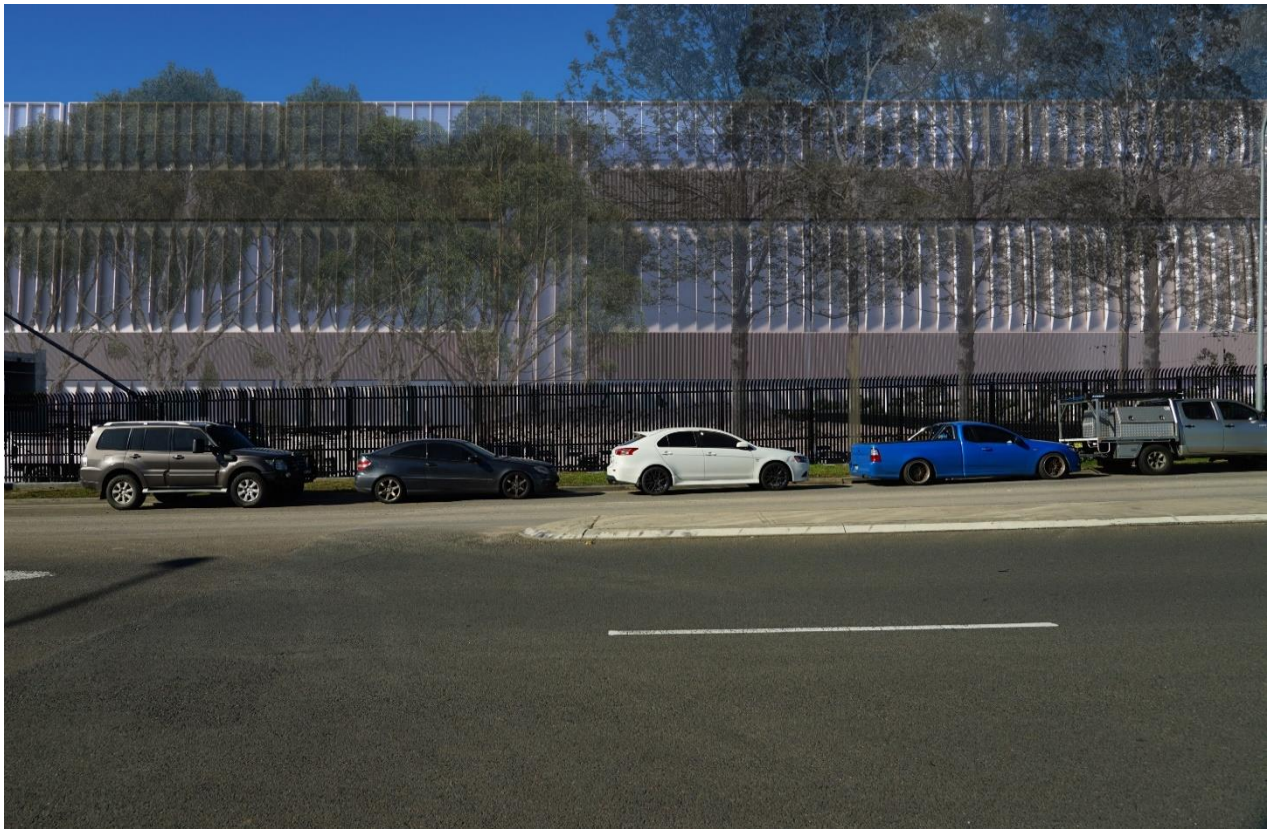

Figure 6-4: Viewpoint C | from Eastern Creek Drive facing East

Figure 6-5: Viewpoint D | from Old Wallgrove Road facing East

Figure 6-6: Viewpoint E | from Old Wallgrove Road facing West

6.1.4 Mitigation and management

Table 6-3 lists the proposed measures to mitigate and manage visual impacts. These would supplement the design response, and landscape and planting strategy described in section 3.2.2.

Table 6-3: Visual mitigation and management

ID	Measure	Owner
Detailed design		
1A	The lighting design specification will be developed to reduce spill and glare. It will also achieve the required standards set out in AS4282: 2019 - Control of the Obtrusive Effect of Outdoor Lighting (Standards Australia, 2019). This may require the use of directional lighting, cut-offs, or filters installed in accordance with AS1158.3: 2020 – Lighting Roads and Public Spaces (Standards Australia, 2020).	Proponent
1B	An **Urban Design and Landscape Management Plan** will be prepared to support the final detailed design. The Plan will be prepared to respond to the Better Placed policy (NSW Government, 2017) and the Connection with Country framework (NSW Government, 2019). It will provide practical detail on the application of the proposed design principles and objectives identified in the environmental assessment. The Plan will include details on the: • Final landscape and planting species mix • Built elements, façade treatments, materials, and palettes • Public domain upgrades in compliance with the Eastern Creek Precinct Plan • Fixtures such as seating, lighting, fencing, and signs • Details of the proposed landscape works • Procedures for monitoring and maintaining landscaped or rehabilitated areas.	Proponent
Pre-construction/construction		
1C	Existing vegetation surrounding the site will be retained and protected where possible: • Any existing vegetation will be identified • Existing vegetation will be marked as a no-go zone • Construction workers will be made aware of these areas when carrying out works • High-risk activities in proximity to these areas will be avoided • The condition of any vegetation will be checked before finishing the works.	Contractor
1D	The vegetation buffer and canopy trees (wattles) will be retained along the Site's southern boundary.	Contractor
Pre-operation/operation		
1E	The site and landscape planting will be managed to maintain its visual and amenity function. This will ensure the area's wider values are protected and the appearance of the site is maintained to reduce the impacts of time, climate, and use, consistent with Objective 6 of Better Placed.	Proponent

6.2 Traffic, transport, and accessibility

This section summarises the potential traffic, transport, and accessibility impacts. **Appendix I** includes the supporting technical assessment.

6.2.1 Method

The traffic and transport assessment presented in **Appendix I** involved the following:

- Identifying different vehicle types and key routes used during construction and operation
- Assessing and modelling future traffic impacts on the surrounding road network during peak construction (see section 3.3.1) and operation
- Undertaking a road safety assessment
- Producing an outline for a Construction Pedestrian and Traffic Management Plan (CPTMP) and a Framework Green Travel Plan (FGTP).

6.2.2 Existing environment

The following section summarises the traffic conditions in the area.

Access

Section 3.2.2 describes the site access from Eastern Creek Drive. Two separate accesses are being built under the Concept Design Approval, one for trucks and material deliveries, and another for staff vehicles. A protected pedestrian and cyclist entry is also being built. Eastern Creek Drive connects to Old Wallgrove Road, which in turn links to the M7 Motorway and M4 Motorway about one kilometre north of the Site.

Traffic conditions

A traffic count survey was undertaken during the morning and afternoon peak periods at the intersection between Old Wallgrove Road and Eastern Creek Drive on 21 July 2022.

2,094 vehicles, including 615 heavy vehicles, were counted at the intersection during the morning peak and 1,807 vehicles, including 507 heavy vehicles, during the afternoon peak. As described in section 2.7 of **Appendix I**, the traffic count data were used to predict the daily traffic conditions. In summary, about 3,900 vehicles, including 1,125 heavy vehicles, use Eastern Creek Drive and Old Wallgrove Road during the morning and afternoon peak during the week.

Section 2.7 of **Appendix I** demonstrates that Old Wallgrove Road and Eastern Creek Drive can currently support the volumes of traffic that use it without causing congestion or delay. Given the plans to develop the area, this will introduce more traffic on these two roads, which may cause a slight increase in traffic and congestion in the future along with the traffic generated once Building 1/1A is operational. Section 6.15 explores this further.

Active transport provisions

Old Wallgrove Road includes a footpath on the south side and a shared use (join footpath and marked cycleway) on the north side. There are no provisions on Eastern Creek Drive, but there is sufficient space for them to be installed in the future.

Public transport

There are two bus stops on each side of Old Wallgrove Road adjacent to the Site. Two bus services, Route 835 and Route 738, service these stops. There are no bus lanes however the buses are priortised through the road intersections. Table 6-4 shows the service frequency.

Table 6-4: Frequencies of bus services

Bus services and routes	Morning Peak frequency		Afternoon Peak frequency	
	Eastbound	Westbound	Eastbound	Westbound
835 WSU Penrith to Prairiewood	2	2	2	1
738 Mount Druitt to Eastern Creek via Rooty Hill	2	2	2	2

6.2.3 Assessment

Traffic-related impacts are summarised below and detailed in **Appendix I**.

Construction

The main impact during construction would be the addition of construction traffic on Eastern Creek Drive and Old Wallgrove Road.

Traffic impacts | As noted in section 3.3.7, there would be 75 heavy vehicles arriving and leaving site every day during peak construction. This would be supplemented by around 18 trucks, 50 worker vehicles, and nine smaller construction vehicles arriving in the morning and leaving in the afternoon.

About 70 percent of this traffic would come from the east of Old Wallgrove Road and the remaining 30 percent would come from the west. The site entrance and its intersection with Eastern Creek Drive have been designed to support this level of traffic without having an impact on other road users. Also, the roads in the area have been designed to accommodate the traffic loads predicted once the whole area is developed. This means they have sufficient capacity to cope with the temporary increase in construction traffic. This means there would be no congestion or delay to other road users.

Parking | The parking provisions being installed to support the Site (47 spaces, see section 3.2.3), would be able to support the construction workforce. There is also sufficient space onsite for any additional parking needed during peak construction. This would prevent any impact or pressure on on-street parking.

Active and public transport | There is no proposal to close the footpath or shared use path on Old Wallgrove Road, or relocate the existing bus stops, as all work would take place onsite.

Road works | There is no proposal to introduce any temporary traffic management controls on public roads. There may be some local traffic management controls introduced on the internal site roads, depending on the activities taking place. This would be confirmed by the contractor. As noted in section 3.3.7, there may be rare exceptions when large equipment would be delivered to Site. This would likely take place under escort, via a dedicated route agreed with Transport for NSW, Council, and NSW Police. This may require local roads to be temporarily closed for short periods. It may also require these trips to take place at night when there is less traffic on the road.

Onsite safety | Standard traffic safety management measures would be introduced that are common to any construction site. Signage would be implemented at the entrance, informing staff and visitors of the risks of passing heavy vehicles. Where walking routes cross vehicle circulation paths, appropriate facilities would be provided. These measures would be detailed in the CPTMP.

Operation

The main impact would be the additional vehicles generated by staff and visitors. As described in section 3 of **Appendix I**, there would be 50 full time staff, 37 of whom are predicted to drive to site. There would also be 10 site visitors per day and up to nine service vehicles.

Due to the security checks, space for six light vehicles or one heavy vehicle has been provided at the site entrance. This is sufficient to prevent traffic overflowing onto Eastern Creek Drive, as per the provisions set out under AS 2890.1:2004 - Parking Facilities – Part 1: Off-street Car Parking (Standard Australia, 2004).

As above, the roads in the area have been designed to accommodate the traffic loads predicted once the whole area is developed. This means there is sufficient capacity to cope with the Site's operational traffic without causing congestion or delay for existing road users.

The impact at Old Wallgrove Road/Wallgrove Road intersection has not been assessed as the forecast increase in traffic volumes at this intersection will be approximately 1% and will therefore have a negligible impact on the intersection. See Section 4.4.1.2 of **Appendix I** for further information.

Parking | As noted in section 3.2.3, 38 parking spaces have been allocated to staff working onsite, with an additional provision for 10 visitors. The traffic report in **Appendix I** concludes that the car parking rate is adequate given the nature of the Proposal.

Active and public transport | The outline FGTP (see **Appendix I**) introduces a package of measures to promote an active lifestyle amongst the workforce. It would encourage people to walk and cycle to work, otherwise catch the bus. The Plan also promotes the notion of local employment so that people can live and work within 30 minutes of one another, consistent with the Future Transport Strategy 2056 (see section 2.5.3). While the Plan encourages the use of alternative transport modes, the site is still remote from any residential centres. This means the Plan would need monitoring and reviewing to ensure it is effective and relevant and builds on the likely expansion of the active and public transport provisions that would be introduced as the area continues to be developed.

Onsite safety | Appropriate signage and line marking would be implemented to comply with AS 1742.2:2009 – Management of Uniform Traffic Control Devices (Standards Australia, 2009). Where walking routes cross

vehicle circulation paths, appropriate facilities would be provided. The internal roads have also been designed to allow for their safe circulation without the need to reverse, other than out of the loading dock (see section 3.2.2), which would be large enough for a 19 metre semi-trailer to safely reverse into the designated loading bays.

6.2.4 Mitigation and management

This section describes the proposed measures to mitigate and manage traffic, transport, and accessibility impacts.

Outline CPTMP and FGTP

Section 5 and section 6 of **Appendix I** provide the outline CPTMP and FGTP. Both detail the traffic management principles that would be adopted ensure pedestrian and worker safety during construction and promote sustainable forms of travel. A detailed CPTMP and FGTP would be developed and implemented before the construction and operation phases.

Mitigation and management measures

Table 6-5 lists the proposed measures to mitigate and manage traffic, transport, and accessibility impacts. These would complement the measures put in place under the Concept Design Approval to manage the development of the internal site roads, roadworks, accesses, and parking provisions.

Table 6-5: Traffic, transport, and accessibility mitigation and management

ID	Measure	Owner
Detailed design		
2A	Any road infrastructure specifically built to support the Proposal will be designed in accordance with the latest provisions set out under the various parts of AS2890 relating to parking, commerical vehicles facilities, and parking for people with disabilities.	Proponent
Pre-construction/construction		
2B	The outline **Construction Pedestrian and Traffic Management Plan** (CPTMP) will be updated and finalised, before being implemented and monitored onsite. The CPTMP will finalise construction vehicle movements, routes, and access and parking arrangements. It will account for the other construction occurring in the area to show how impacts on existing traffic, pedestrian, and bicycle networks will be managed and mitigated. The CPTMP will form part of the CEMP. It must be: • Prepared by a suitably qualified and experienced person • Prepared in consultation with Council and Transport for NSW • Detail the measures to be implemented to ensure road safety and network efficiency during construction • Detail heavy vehicle routes, access, and parking arrangements • Include a Driver Code of Conduct to: – Minimise the impact of construction traffic on the local and regional road network – Minimise conflicts with other road users – Minimise road traffic noise – Ensure truck drivers use specified routes • Include a program to monitor the effectiveness of these measures.	Contractor
2C	Appropriate signage, line marking and crossing facilities will be provided in accordance with AS 1742.2:2009 – Management of Uniform Traffic Control Devices (Standards Australia, 2009).	Contractor
2D	All vehicles entering or leaving the site during construction will be restricted to using the dedicated entrance on Eastern Creek Drive. Construction traffic would be restricted to using Eastern Creek Drive and Old Wallgrove Road.	Contractor
Pre-operation/operation		
2E	A finalised **Green Travel Plan** (GTP) will be prepared in consultation with Transport for NSW. It will outline the facilities and measures to promote the following:	Proponent

ID	Measure	Owner
	• Cycling will be encouraged by ensuring cycle parking is clearly visible or provide signage to direct people to cycling facilities, a map is provided to staff showing cycle routes, and use of the end-of-trip facilities is encouraged • Walking will be encouraged by producing a map showing safe routes to and from the site with times, and distances to local facilities such as shops and bus stops. • Public transport use will be encouraged by: – Developing a map showing public transport routes in the area – Putting up a noticeboard with leaflets and maps showing the main public transport routes to and from site, and timetables.	
2F	A **Loading Dock Delivery Management Plan** (LDDMP) will be prepared that provides details of the onsite loading dock, and the number and frequency of service and delivery vehicle movements during operation. The Plan will also outline the measures that will be implemented to ensure service and delivery vehicles do not adversely impact on the surrounding road network.	Proponent

6.3 Ecologically sustainable development

This section summarises how the Proposal has considered ecologically sustainable development (ESD) initiatives. **Appendix O** includes the supporting technical assessment.

6.3.1 Method

The following section defines the ESD principles that were used to help develop various initiatives. The assessment was prepared in accordance with the relevant policies and planning documents detailed in Table 2 of **Appendix O.**

Ecologically sustainable development principles

The principles of ESD emerged in response to Australia signing up to the Rio Earth Summit in 1992. While dated, they represent the means to demonstrate the protection of natural, social, cultural, and economic capital for current and future generations. At the heart of the principles is the recognition that today's actions need to account for their impact on future generations.

The precautionary principle | This recognises that at this stage of the Proposal, the design and construction methods are not finalised, while the process of impact assessment is predictive. This means there is inherent uncertainty. To overcome this, the assessment has adopted precaution, either assessing a worst-case scenario, setting out the requirement for further investigations to validate the assessment findings, introducing mitigation even if there is not the scientific justification for it, or committing to the need to revisit the design if there is an unexpected consequence. These measures collectively ensure there is a process to prevent serious or irreversible damage due to a lack of certainty.

Data centres consume energy and other resources. While the Proposal is not pursuing a certification under a sustainable building rating scheme, greenhouse gas emissions and energy efficiency targets have been included as precautionary initiatives to manage future uncertainty around the Proposal's impacts.

Intergenerational equity | A main aim of sustainable development is conserving value for future generations. This means today's decisions need to be fair (equitable) for future generations. Removing natural capital[1] to support building the Proposal, means it would no longer be available for future generations. Therefore, the Proposal needs to assess this loss and determine if it is equitable.

There are several proposed initiatives that seek to optimise the design. They consider circular economy principles to reduce the use of natural capital and the associated loss of ecosystem provisioning services[2], which can indirectly affect climate change, result in biodiversity loss, or increase pollution[3].

[1] Natural capital is the planet's stocks of natural resources, which also provide social, cultural, and recreational value.
[2] Ecosystem services: Key concepts and applications (agriculture.gov.au)
[3] This is because the extraction of natural resources has a wider supply-chain impact. Also, the removal of vegetation (to source materials such as wood) results in habitat and biodiversity loss. It also reduces the ability for the vegetation to capture (sequester) carbon.

Conservation of biological diversity and ecological integrity | This focuses on maintaining ecological diversity and health across an ecosystem. It appreciates the total value and function of an ecosystem rather than specific threatened species impacts. The progressive aim is to create a net gain in biological diversity and ecological integrity. This in turn helps improve the area's natural capital because it can help introduce ecosystem regulating and supporting services[4].

*The proposed landscape and planting strategy (see **Appendix S**) adopts the objectives of the Eastern Creek Precinct Plan* (see section 2.5.6). *It includes measures to promote the use of native species and planting patterns that complement and enhance the Cumberland Plain Woodland. The Plan includes the use of species that are energy and water efficient, and provisions to promote passive cooling (see section 1.9). This would help promote ecosystem supporting and regulating services onsite.*

Improved valuation, pricing, and incentive mechanisms | At its core is the idea that the Proposal bears all reasonable costs for its impacts. Traditionally, this focused on the polluter pays principle, which is an objective of the EPA[5]. However, it is now more progressive. To ensure the successful integration of the principles of ESD and to secure long-term sustainable development, it is important that the proposed incentives are appropriately valued and therefore costed into the Proposal. It is also relevant to account for the Proposal's total economic impact, which is at the core of natural capital accounting[6].

Several initiatives have been proposed in line with the SEARs and the wider social, economic, and environmental sustainability requirements underpinning this principle. As the design progresses, these initiatives will be evaluated in relation to operational and embodied design impacts. This would ensure the wider lifecycle and total economic costs are accounted for.

6.3.2 Mitigation and management

The following section describes the proposed incentives that will be adopted in the Proposal.

ESD design initiatives | The following section outlines the ESD design initiatives.

Table 6-6: ESD project design initiatives

Aspect	Initiative
Heat island effect	
Green infrastructure	Measures have been incorporated into the design to reduce the heat island effect. This includes planting one evergreen tree every 10 metres to shade half the carpark after 10 years.
Water use	
Planting water efficient native plants	To reduce irrigation volumes, water efficient native plants, selected from the species list provided in the Blacktown DCP, will be used. Areas of turf grass will also be minimised.
Rainwater recycling	Rainwater harvesting will be used for onsite irrigation, evaporative cooling, and toilet flushing. This will capture most of the roof's water, reducing potable water use. Up to 50,000 litres of rainwater will be captured.
Water efficient appliances	Water efficient equipment will be installed onsite, including the toilets, urinals, taps, and showerheads. They will display a water use rating based on the Water Efficiency Labelling and Standards.
Water metering	Water use will be metred and monitored at the potable water inlet, water discharge point, and in the cooling system. This will be used to identify leaks, bad practices, and inefficiencies. It will be used to develop and implement targeted water management strategies to reduce consumption.
Energy use	
Power utilisation effectiveness reduction	The Proposal includes a high performing air economiser and evaporative cooling system, which performs above the industry standard. It would reduce energy consumption by around 25 to 30 percent.

[4] Ibid 1
[5] epamedia17052701 (nsw.gov.au)
[6] What nature is worth: The rise of natural capital accounting – ECOS (csiro.au)

Aspect	Initiative
Energy metering	Energy use will be metered and monitored onsite. This will be used to identify bad practices, and inefficiencies. It will be used to develop and implement targeted energy management strategies to reduce consumption.
Distributed battery systems	Distributed battery systems will be used in favour of more conventional double-conversion uninterrupted power systems, as they are more energy efficient.
Roof-mounted solar photovoltaics	A nominal 32 kW roof-mounted solar photovoltaics (PV) is included in the proposed design and will be connected to part of the electrical infrastructure where power can be utilised without compromising critical systems.
Refrigerants	
Refrigerant use reduction	Rainwater will be used to reduce the need for refrigerants that are conventionally used in mechanical cooling.
Waste	
Storage and collection of recyclables	A dedicated area will be included onsite to store and segregate mixed paper, cardboard, glass, plastics, and metals. Separating these materials at source will maximise the potential for their recovery and reuse.
Construction and demolition waste management planning	A Waste Management Plan will be developed and implemented (see section 6.10.4). It will detail all major waste streams, including disposal and diversion rates.
Mechanical, electrical, and process engineering	
Mercury lighting	There will be no mercury in the selected light fittings to minimise its impact on the environment.
Energy efficient lighting	Energy efficient lighting will be used. This will be set on timers or installed with motion detectors to reduce energy consumption.
Materials	
Low embodied materials	Low embodied and recycled materials will be selected to reduce the carbon impact. Key will be adopting: • Concrete mixes with 20 percent lower global warming potential • Macro-fibre reinforcement of on-grade slabs (in lieu of reinforcing steel mesh).
Low embodied structural design	An efficient primary building frame will be used to reduce the amount of structural material use.
Durable materials	Durable materials, including reinforced and pre-stressed concrete, will be used for the main structural frame and non-louvered façade. This will extend the operational design life to 50-years without replacement and with minimal maintenance.
Local pollution	
Active and public transport use	A Green Travel Plan will be prepared to encourage walking, cycling, and public transport use (see section 6.2.4). In addition, six bicycle parking spaces will be provided onsite along with end-of-trip facilities (see section 3.2.2).
Electric vehicle charging	Electrical vehicle charging will be included in certain parking bays to reduce vehicle pollution.
Fuel systems	As noted in section 3.2.2, all generators will be housed in a prefabricated, acoustic rated, generator enclosures with double-skinned fuel-storage belly tanks. Other safety and leak detection equipment will be installed onsite.
Noise and air pollution	As noted in section 1.9, the pollution generating equipment has been selected to avoid any noise or air quality amenity or human health impacts.

The above ESD initiatives act to reduce the impacts of the Proposal and are designed to result in significant reductions in resource use. At this stage, however, it is not possible to measure the benefit. This will be done during the detailed design.

The ESD principles particularly influenced by the above initiatives include:

- *The precautionary principle* | Reducing environmental impacts and resource consumption through measures which avoid, wherever practicable, serious, or irreversible damage to the environment.
- *Inter-generational equity* | Reducing the environmental impacts and resource consumption associated with the Proposal by ensuring the health and productivity of the environment is maintained for the benefit of future generations, while helping conserve natural capital and ecosystem service provisions in the Proposal's wider supply chain.

Organisational initiatives | Table 6-7 provides a summary of the Proponent's sustainability policy which will affect the Proposal's long-term performance.

Table 6-7: ESD organisation policy initiatives

Theme	Aspect	Initiative	ESD principle(s)
Energy	Green power	The organisation has made a commitment to 100 percent renewable energy for all operations by 2025, meaning that all electricity will be sourced through green energy purchase agreements.	• The precautionary principle • Inter-generational equity • Conservation of biological diversity and ecological integrity • Improved valuation, pricing, and incentive mechanisms
Carbon	Carbon neutrality	By 2040, the Proponent commits to achieving 'net zero' for its global operations; that is, it will remove an equal amount of carbon to its emissions via a portfolio of emission technologies potentially including afforestation and reforestation, soil carbon sequestration, bioenergy with carbon capture and storage and direct air capture.	
Water	Water stewardship	Water conservation, reuse and recycling are the core components of the Proponent's water stewardship in data centres. The Proponent is engaged in several community water programs designed to return water to the communities they operate within. Additionally, through partnerships with global non-profits, the Proponent has delivered watershed restoration, clean water provision, wetland creation and water quality projects.	
Energy Water Circular economy	Climate neutrality	The Proponent is a signatory of the European Green Deal and the Climate Neutral Data Centres Initiative, which aims to make data centres climate neutral by 2030. Actions include annual power and water usage effectiveness targets, purchasing 100 percent renewable energy for electricity by 2030, and implementing circular economy practices for its servers. It is expected that in response to innovations in Europe, these will become global best practice.	

Initiatives for investigation | The following section provides proposed initiatives to push the Proposal beyond industry best-practice. These initiatives will be investigated throughout detailed design for their feasibility and application. The intention will be to integrate many, if not all, of them.

Table 6-8: ESD initiatives for investigation

Impact	Initiative
Heat island effect	Consideration will be given to the use of roof and non-roof materials with high solar reflectivity to reduce heat-related effects. Light coloured roof sheeting and concrete paving materials would be selected in preference throughout detailed design.
Energy efficiency	Design and specification of the electrical room cooling system will be investigated throughout detailed design and if feasible, a refrigerant system with free cooling would be included.
	A nominal 32 kilowatts of roof-mounted solar photovoltaics would be included. This would be connected to part of the electrical infrastructure where power could be used without compromising critical systems. Increasing the amount of solar generation will be investigated during the detailed design.

Impact	Initiative
Refrigerants	Despite the low use of refrigerants, hydrofluorocarbon alternatives will be investigated during the detailed design. The use of refrigerants with low global warming and ozone depleting potential will also be investigated during detailed design.
Water efficiency	A detailed supply/demand analysis of rainwater availability and expected site usage will be carried out during detailed design. If feasible and beneficial, the size of the rainwater harvesting system would be increased.
Waste	Industry best practice for landfill diversion will be reviewed and an ambitious diversion benchmark will be set during the detailed design.
	The feasibility and cost of an offsite segregation and recycling contract will be investigated to address construction and demolition waste management. The feasibility of adopting a waste platform or rating under the National Australian Built Environment Rating System (NABERS) will also be investigated.
Materials	Industry best in class material use will be investigated, and if feasible, a stretch target would be set to use concrete mixes with 30 percent lower global warming potential.

Mitigation and management measures

Table 6-9 lists the proposed measures to mitigate and manage ESD impacts.

Table 6-9: ESD mitigation and management

ID	Measure	Owner
All stages		
3A	The final ESD initiatives will be confirmed during the detailed design and their performance and benefit will be measured. The Proponent will report on their implementation in its operational and corporate key performance indicator reporting. The initiatives will be revised or revisited if the Proposal falls below the Proponent's corporate standards. The initiatives will also be revisited if they are not aligned with, or achieving, the NSW Government's net zero emission goals as they relate to the use of natural capital provisions (i.e., energy, water, natural resources).	Proponent

6.4 Biodiversity

This section summarises the potential biodiversity impacts. As the Proposal is situated on a site that has previously undergone earthworks and clearing (sees section 1.3) it contains no remnant vegetation or grassland. This removes the trigger for preparing a BDAR. Therefore, a waiver application was submitted to DPE on 27 July 2022 and is attached as **Appendix F,** which included an assessment of the Site's biodiversity values. To confirm, there would be no biodiversity impacts associated with the Proposal for the reasons described below.

6.4.1 Method

The assessment consisted of a desktop review of the previous investigations (see section 1.3) and update searches of the:

- BioNet Atlas to identify flora and fauna records
- Biodiversity Values Map to identify land with high biodiversity values
- Protected Matters Search Tool to identify the presence of any nationally significant ecological values.

6.4.2 Existing environment

The Site is located within a well-established industrial area and has previously been cleared of all vegetation under the Concept Design Approval (see Chapter 1). Beyond the boundary to the south, fronting Eastern Creek Road, is an existing row of mature planted wattle trees and roadside vegetation. There is also a small extent of mapped vegetation at the Old Wallgrove Road and Roberts Road intersection, about 200 metres west of the Site (see Figure 6-7 below). The only other vegetation locally is alongside Reedy Creek about 700 metres to the south. It comprises native landscape species, minimal regrowth, and exotic grasses. There is no proposal to impact or clear any of this vegetation. The nearest sensitive land with a mapped high biodiversity value is the Prospect Nature Reserve approximately three kilometres east of the Site.

According to the NSW Weed Wise Database, there are currently 135 species identified within the Greater Sydney region that could be present onsite. There are also other pests, vermin, and pathogens that are commonplace in Sydney, and could also be present.

6.4.3 Assessment

While the sparse patchy remnant and regrowth vegetation to the south of the Site may provide general foraging for transient species there are more favourable locations locally. This means no fauna would rely on this area for their survival. Also, there are no plans to remove or impact this, or any, vegetation, and Old Wallgrove Road acts as an artificial barrier. This reduces the potential for any edge effects or other key threatening processes. Beyond this, any other ecological or biodiversity values are well beyond the impact of the Proposal.

Weeds, pests, and pathogens

There is the potential for weed dispersal or seed stock transportation through the movement of material to and from Site. While impacts can be avoided through effective mitigation measures there is some potential for localised dispersion around any ineffectively treated area. Pathogens would spread via the same mechanisms as weeds, but again, these impacts can be avoided through effective mitigation.[7] Finally, pest species and vermin may be attracted to the site.

[7] https://weeds.dpi.nsw.gov.au/WeedBiosecurities?AreaId=21

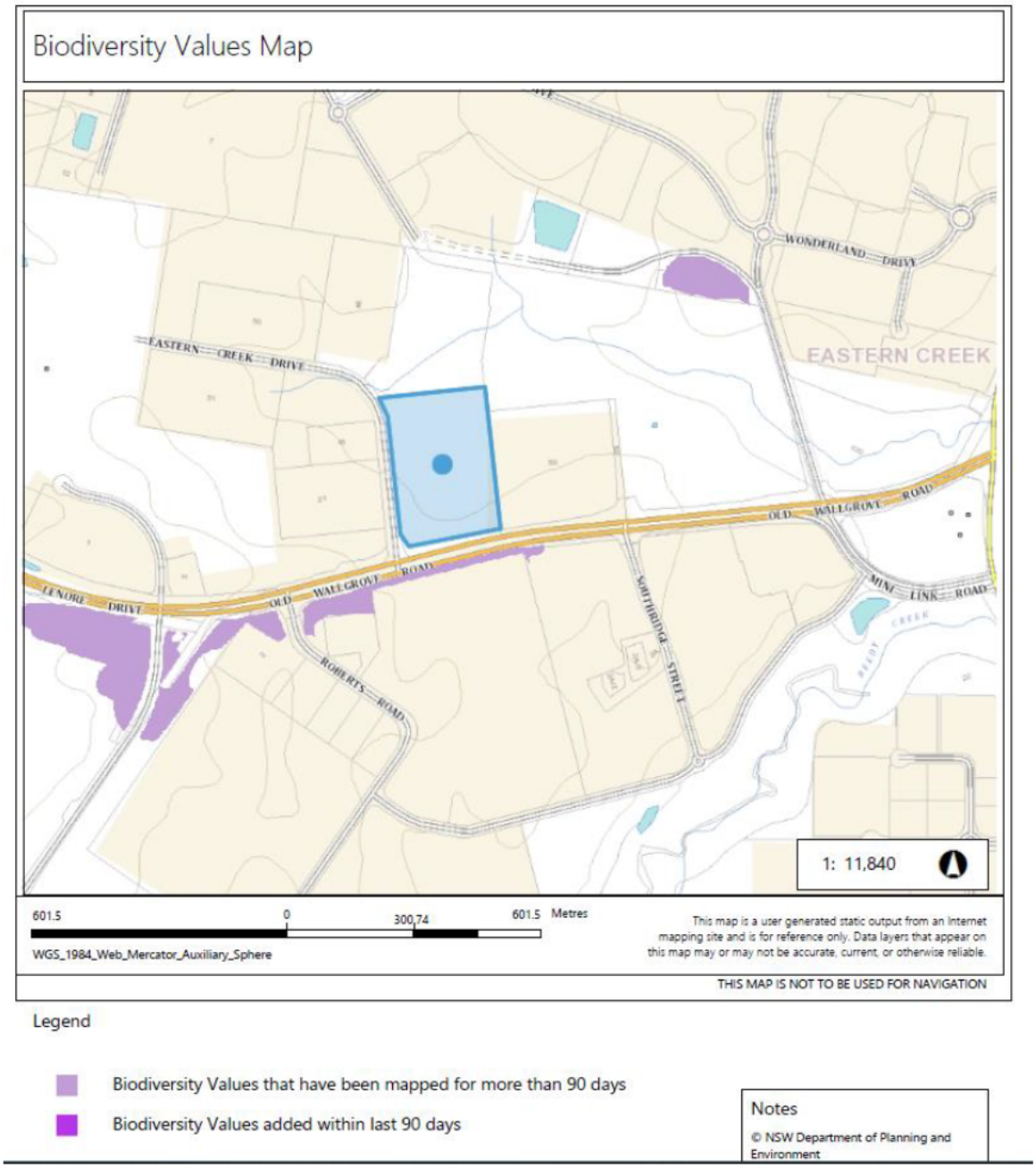

Figure 6-7: Biodiversity values map

6.4.4 Mitigation and management

Table 6-10 lists the proposed measures to mitigate and manage biodiversity impacts.

Table 6-10: Biodiversity mitigation and management

ID	Measure	Owner
Pre-construction/construction		
4A	In the unlikely event that unexpected threatened species are identified during construction, works will stop, and an ecologist will be contacted for advice.	Proponent/ contractor
4B	The site will be safely closed-down each night to prevent species being trapped onsite. Should any fauna be discovered, then an ecologists or trained person will remove them to a safe location offsite.	Proponent/ contractor
4C	A **Biosecurity Management Plan** will be developed, outlining appropriate control and disposal options of any high threat, and declared priority weeds, pests, and pathogens. The Plan will be prepared in accordance with the guidance provided on the NSW Weed Wise portal. Measures will be	Contractor

ID	Measure	Owner
	taken to washdown, inspect, and treat equipment and machinery moving to and from site to avoid the spread of seeds, weeds, and pathogens. Routine site inspections will be carried out to ensure the biosecurity measures are working effectively, and that any pests, vermin, and priority weeds are not present in sufficient numbers to post an environmental hazard or cause the loss of amenity in the surrounding area.	
Pre-operation/operation		
4D	Biosecurity measures will be maintained to prevent the spread of weeds, pests, and pathogens.	Proponent

6.5 Air quality

This section summarises the potential air quality impacts. **Appendix J** includes the supporting technical assessment.

6.5.1 Method

The air quality assessment in **Appendix J**:

- Identified the nearest sensitive receivers in all directions of the Site
- Established ambient air quality and weather conditions using publicly available data
- Assessed potential changes in air quality during construction
- Used modelling to predict the impact on nearby receivers and the wider area from testing and using the back-up generators in an emergency (see section 3.2.3)
- Determined how the Proposal would affect ambient air quality and if this would result in an exceedance of amenity, pollution, or health-based criteria
- Identified the measures needed to manage and mitigate any impacts or risks.

6.5.2 Existing environment

The following section describes the existing receivers and ambient air quality in the area.

Sensitive receivers

The Site is an industrial area. The nearest sensitive receivers (individual residential properties) are located over 1.5 kilometres away. Eight properties were selected to represent the nearest receivers in all directions, as shown on Figure 6-8 and identified in Table 6-11. They were used to assess the Proposal's air quality impact.

Table 6-11: Identified nearby discrete sensitive receivers

Receiver ID	Receiver Address/ Name	Receiver Type	Approximate DDistance from subject site boundary (km)	X: Easting (m)	Y: Northing (m)
C1	RICOH Australia	Commercial	0.080	299798	6256703
C2	BULLVANTS	Commercial	0.058	299810	6256815
C3	FX FACTORY	Commercial	0.055	299802	6256876
C4	JAYCAR ELECTRONICS	Commercial	0.060	299855	6256989
C5	Potential Future Commercial	Commercial	0.020	299941	6256941
I1	ACR Supply South	Industrial	Immediately adjacent	300091	6256691
I2	Sydney Mainfreight Warehouse	Industrial	0.311	299987	6257248
I3	Coles CDC	Industrial	0.080	300025	6256546
R1	3 Cetus Pl, Erskine Park	Residential	2.5	297410	6256644
R2	16 Weaver St, Erskine Park	Residential	2.5	297338	6257195

Receiver ID	Receiver Address/ Name	Receiver Type	Approximate DDistance from subject site boundary (km)	X: Easting (m)	Y: Northing (m)
R3	13 Swamphen St, Erskine Park	Residential	2.8	297238	6257990
R4	168 McFarlane Dr, Minchinbury	Residential	2.2	298982	6258956
R5	10 Agrafe Pl, Minchinbury	Residential	1.9	299728	6258796
R6	31 Farrington St, Minchinbury	Residential	1.7	300139	6258648
R7	58 Burley Rd, Horsley Park	Residential	2.0	300778	6254806
R8	146 Burley Rd, Horsley Park	Residential	1.6	300355	6255010

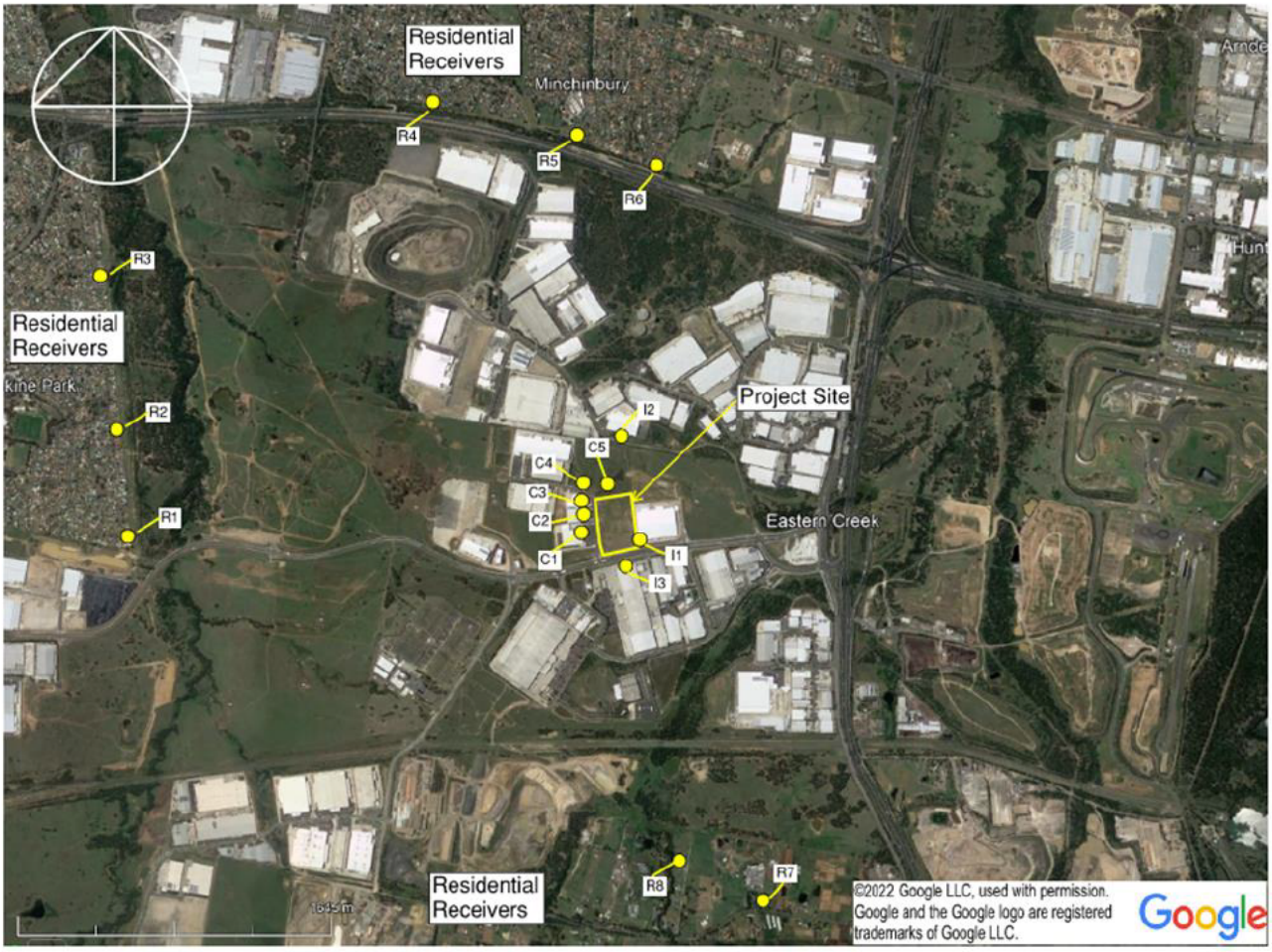

Figure 6-8: Modelled nearby sensitive receiver locations

Ambient air quality

Air quality data from 2017, collected seven kilometres east of the Site, showed ambient air quality to be typically well below the health-based criteria. The exceptions were the rare occasions when summer bushfires and controlled backburning affected the Sydney airshed. While there are more recent monitoring data, after 2017 the results were considered atypical because of exceptional extreme events such as bushfires and lockdowns associated with the COVID-19 pandemic affected the ambient air quality. Section 4.2 of **Appendix J** provides further detail.

The main emissions sources locally, relate to the industry in the area and the traffic-related pollutants chiefly associated with the M7 Motorway and M4 Motorway.

Weather conditions

Wind speed and direction affect air quality and emission dispersion. In the case of the site, calm winds are only experienced for about 5.2 percent of the time. This means the weather conditions are favourable in supporting air pollutant and dust (particulate matter) dispersion.

6.5.3 Assessment

The following section summarises the assessment presented in section 6 and section 7 of **Appendix J**.

Construction

The construction activities and limited earthworks (see section 3.2.2) has the potential to generate minor amounts of dust over the first 12 months when Activity 1 to Activity 4 are taking place (see section 3.3.1). The other emission sources relate to the 150 or so vehicles that would arrive and leave site during peak construction (see Activity 4 under section 3.3.1), and the range of plant and equipment used onsite (see section 3.3.5). This would generate minor combustion emissions, certainly below levels that would have a perceivable air quality impact. As the nearest residential receivers are over 1.5 kilometres away, this is beyond the limit of the Proposal's impact. However, the potential to generate dust could affect the amenity of the immediate neighbours and other road users.

Operation

As noted in section 3.2.3, the back-up generators would be operationally tested every fortnight in sets of three, for up to five minutes, while they would be tested under load for longer periods every quarter. They would also be subject to annual maintenance testing. This is the proposed normal operating scenario, where there is a defined testing schedule (see Table 3-2). The alternative unplanned scenario would be where all the back-up generators would be operating because of a mains power outage. There is around a 0.05 percent chance of this happening each year with the power loss lasting for typically less than an hour[8]. As noted in Chapter 3, the load quarterly and annual load testing would involve attaching a 'load device' to each generator to test performance under stressed conditions. In an emergency. the generators would operate under a low load and potentially no load.

Under both scenarios the generators would emit various oxides, particulate matter, and hydrocarbons. The emissions would be higher when the generators would be tested under load.

Appendix J confirms that under both scenarios there would be no exceedance of short or long-term amenity, pollution, or health-based criteria. However, the Proposal would still contribute to Sydney's air pollution inventory.

6.5.4 Mitigation and management

Table 6-12 lists the proposed measures to mitigate and manage air quality impacts.

Table 6-12: Air quality mitigation and management

ID	Measure	Owner
Detailed design		
5A	The back-up generators or enclosures will be designed, installed, and operated so as not to prevent the retrofitting of air pollution emission controls.	Proponent
Pre-construction/construction		
5B	A **Dust and Air Quality Management Plan** will be prepared and implemented as part of the CEMP. It will address potential emission sources, air quality objectives, mitigation and suppression methods, measures to manage work during adverse weather and strong winds, and responsibilities. It will tie into the wider notification and complaints handling processes. The Plan will include: • All reasonable steps to minimise dust during the site works	Contractor

[8] Taken from the System Average Interruption Duration Index (SAIDI)

ID	Measure	Owner
	• Measures to: – Suppress dust from exposed surfaces and stockpiles – Have all trucks cover their loads when entering and leaving site – Prevent tracking dirt onto public roads – Inspect and clean all public roads – Progressively stabilise land to minimise exposed surfaces.	
5C	The following management measures will be included as part of the CEMP to minimise air emissions from construction vehicles and site machinery: • A high standard of equipment and machinery maintenance will be implemented to minimise vehicle emissions • Pre-start checks will be carried out to ensure equipment and machinery is in good working order.	Contractor
Operation		
5D	The back-up generators and other equipment will be routinely serviced to manufacturer specifications to maintain their operational efficiency.	Proponent
5E	A **Back-up Generator Incident Report** will be prepared within 30 days of the system being used in an emergency. The Report will detail: • The date and time of the power outage • The total number of back-up generators used to power the site • The total number of hours the back-up generators were operated • The total quantity of diesel used to feed the back-up generators • The total amount of electricity produced by the generators • Evidence to prove the air quality goals were not exceeded.	Proponent

6.6 Noise and vibration

This section summarises the potential noise and vibration impacts. **Appendix H** includes the supporting technical assessment. **Appendix H** also includes an addendum to the Acoustic Assessment to reassess cumulative noise emissions for the Site.

6.6.1 Method

The noise and vibration assessment in **Appendix H**:

- Identified the nearest sensitive receivers in all directions of the Site
- Established ambient noise conditions using onsite monitoring
- Assessed potential changes in ambient noise during construction
- Used modelling to predict the impact on nearby receivers and the wider area from testing and using the back-up generators in an emergency (see section 3.2.3), accounting for how this may be affected under certain weather conditions
- Determined how the Proposal would affect ambient noise levels and if this would result in an exceedance of amenity, pollution, or health-based criteria
- Identified the measures needed to manage and mitigate any impacts or risks,

Construction noise impacts were assessed in accordance with the NSW Interim Construction Noise Guideline (ICNG, DECC, 2009). These guidelines define the levels above-which, management measures are introduced as the noise would affect the receiving environment. In the case of residential properties, these levels are based on the ambient conditions, while for all other receivers, they are set at specific thresholds. There is one exception, where tighter management measures are introduced if the noise levels at residential properties exceed a higher set threshold level. These guidelines are discussed in detail in **Appendix H.**

Construction vibration impacts were assessed in accordance with Assessing Vibration a Technical Guideline (DEC, 2006) and BS6472.1:1992 - Evaluation of Human Exposure to Vibration in Buildings (British Standards, 1992). These guidelines define safe working distances beyond which there would be no risk of causing amenity (human comfort) or cosmetic building damage. These are discussed in detail in **Appendix H.**

Existing environment

The following section describes the existing receivers and ambient noise conditions in the area.

Sensitive receivers

The same sensitive receivers described above in section 6.5.2 were considered in the noise assessment along with various commercial and industrial receivers closer to the Site, as described below in Table 6-13 and shown on Figure 3 of **Appendix H**. Table 6-13 also lists the noise monitoring locations.

Table 6-13: Receivers and noise monitoring locations

Type	ID	Address	Description	Approximate Distance from site boundary
Sensitive receivers				
Residential	R1	39 Farrington St, Minchinbury	Residential dwellings representative of residential properties to the north, south and west of the site.	1700 m
Residential	R2	146 Burley Rd, Horsley Park		1600 m
Residential	R3	3 Cetus Pl, Erskine Park		2500 m
Residential	R4	16 Weaver St, Erskine Park		2600 m
Residential	R5	13 Swamphen St, Erskine Park		3000 m
Residential	R6	10 Agrafe Pl, Minchinbury		2000 m
Residential	R7	168 McFarlane Dr, Minchinbury		2200 m
Residential	R8	58 Burley Rd, Horsley Park		1700 m
Commercial (existing)	C1	1 Eastern Creek Dr, Eastern Creek	Ricoh Australia.	83 m
Commercial (existing)	C2	41 Eastern Creek Dr, Eastern Creek	Bullivants	55 m
Commercial (existing)	C3	45 Eastern Creek Dr, Eastern Creek	Vermeer Australia	53 m
Commercial (existing)	C4	46 Eastern Creek Dr, Eastern Creek	Jay Car	200 m
Commercial (potential)	C5	50 Eastern Creek Dr, Eastern Creek	Potential future commercial	86 m
Industrial (existing)	I1	50 Old Wallgrove Rd, Eastern Creek	ACR Supply	12 m
Industrial (existing)	I2	36 Honeycomb Dr, Eastern Creek	Sydney Mainfreight Warehousing	324 m
Industrial (existing)	I3	3 Roberts Rd, Eastern Creek	Coles CDC	90 m
Unattended monitoring locations[1]				

Unattended	L1	13 Farrington St, Minchinbury	Single storey residence to the north of the site	1900 m
Unattended	L2	146 Burley Rd, Horsley Park	Single storey residence to the south of the site	1600 m

Note:
1_As per SPP-19-00013 DA

Ambient noise levels

The noise monitoring carried out in May 2019 at L1 and L2 as part of the Concept Design Approval showed ambient levels in the residential areas of Minchinbury and Horsley Park to be low across the day, evening, and night (see Table 6-14). This reflects both area's amenity value. Since nothing has changed in these areas since 2019 that could have affected the ambient levels, there was no benefit in understanding updated monitoring.

Table 6-14: Long-term noise monitoring results, dB(A)

Location	Time period	Rating background noise levels, dBL_{A90}	Prevailing noise conditions
L1 | 13 Farrington Street, Minchinbury	Day	44	Traffic noise from M4 Motorway, birds chirping and dogs barking.
	Evening	44	
	Night	39	
L2 |146 Burley Road, Horsley Park	Day	41	High volume of bird noises, pig farm located to the north of the property and light machinery noise (lawn mowers, grinders etc) from surrounding properties.
	Evening	42	
	Night	39	

6.6.2 Assessment

The following section summarises the assessment presented in **Appendix H**.

Construction

Noise impacts (equipment) | The predicted construction noise levels presented in Table 6-15 relate to the activities described in section 3.3.1. They confirm there is the potential for the amenity of the people working in the commercial and industrial properties next to the Site to be affected. The noisiest and most impacting activities would occur within the first 12 months when establishing the site (Activity 1), installing the foundations (Activity 2), and laying the pavement and hardstand (Activity 3). The piled foundations would be the only activity that would be sufficiently loud to affect the nearest residents in Horsley Park (R2). However, this would only last for a short period. The nearest industrial receiver (I1) would be the only location where the workers may be affected for the whole construction period including Activity 4 and Activity 5.

Table 6-15: Predicted construction noise levels | residential and non-residential receivers

Residential receiver	NML, $dBL_{Aeq\ 15min}$		Predicted noise level, $dBL_{Aeq(15min)}$.				
	Noise affected – Standard hours	Highly Noise Affected	Activity 1: Site establishment and excavation	Activity 2: Foundations	Activity 3: Pavement and road works	Activity 4: Building construction	Activity 5: Plant installation and connection
R1	54	75	43-49	45-49	41-42	30-33	21-33
R2	51	75	51-54	52-55	49-49	38-40	29-35
R3	51	75	45-45	46-49	43-43	32-34	23-29
R4	51	75	45-47	46-47	43-43	32-34	23-31
R5	51	75	45-47	46-48	42-43	31-33	23-27
R6	54	75	38-39	39-42	36-36	25-27	16-23
R7	54	75	33-35	35-36	31-31	20-21	11-15
R8	51	75	49-50	50-50	46-47	35-38	27-34
C1	70	-	80-83	81-83	78-78	67-68	58-63
C2	70	-	79-80	80-83	77-77	66-68	57-64
C3	70	-	77-80	78-80	75-75	64-65	55-60
C4	70	-	72-74	73-74	70-70	59-62	50-58
C5	70	-	68-72	69-72	65-66	54-56	46-56
I1	75	-	87-96	88-96	85-87	74-80	65-80
I2	75	-	61-63	62-63	58-59	47-50	39-47
I3	75	-	80-83	81-83	78-78	67-68	58-63

Note 1: Proposed future commercial receiver

Note 2: Cells highlighted in grey indicate an exceedance of standard hours NMLs

Noise impacts (traffic) | Construction traffic noise is assessed in section 8.3 of **Appendix H.** It confirms that the relatively low traffic volumes, even in peak construction (see section 3.3.7), would not be sufficient to affect the amenity of people living and working in the area.

Vibration impacts | Despite carrying out piling and other vibration-generating activities, these would take place at a sufficient safe-working distance not to present a risk to people's amenity (human comfort) or to adjacent buildings. Further details are provided in Appendix B of **Appendix H.**

Operation

The results of modelling the impacts of the operating scenarios described above are shown in the following tables. They confirm that without introducing any acoustic noise treatments, there could be various instances when the industrial noise criteria would be exceeded at the nearest commercial and industrial receivers.

Under standard operations, the exceedances would mainly occur because of needing to cool the data halls. This is because the associated fans and condenser units would operate continuously, which gives rise to the predicted exceedances shown below. The other contributing factor would be testing the generators under load, where the attached 'load device' generates noise levels far higher than the generators themselves as described in **Appendix H**. The use of the fans and condenser units at night also means the amenity of the residents at the nearest receivers in Minchinbury and Horsley Park would be affected.

Under emergency operations, there is no ability to reliably say when the back-up generators would be used or for how long. This means the corresponding guidelines do not set criteria around this because it is unpredictable. For completeness, Table 6-18 below shows the predicted noise levels at the receivers from running the back-up generators during an emergency. The results are counterintuitive, as they are slightly lower or similar to the standard scenario. While all the generators would be operating they would be under a lower load than when the individual generators are being tested. Also, the load testing would introduce the added noise from the 'load device'. There is only around a 0.05 percent chance of needing to use the back-up generators each year, with their use lasting typically less than an hour, as noted in section 6.5.8.

Despite the predicted exceedances, section 6.5.5 of **Appendix H** confirms that by installing standard acoustic treatments around the fans, condenser units and other equipment, the noise levels can drop by up to 13dB. This would be sufficient to meet the criteria for all receivers under normal conditions.

Table 6-16: Unmitigated predicted noise levels | standard daytime operation

Receiver	Overall Site criteria $L_{eq,15min}$ dB(A)	Daytime - Standard weather conditions			Daytime - Enhanced weather conditions		
		Predicted level $L_{eq,15min}$ dB(A)	Project Criteria[1] $L_{eq,15min}$ dB(A)	Meets project criteria?	Predicted level $L_{eq,15min}$ dB(A))	Project Criteria[1] $L_{eq,15min}$ dB(A)	Meets project criteria?
R1	49	29	39	Yes	35	39	Yes
R2	46	29	36	Yes	35	36	Yes
R3	46	27	36	Yes	33	36	Yes
R4	46	26	36	Yes	32	36	Yes
R5	46	24	36	Yes	30	36	Yes
R6	49	26	39	Yes	32	39	Yes
R7	49	14	39	Yes	19	39	Yes
R8	46	29	36	Yes	35	36	Yes
C1	58	58	53	No (+5dB)	59	53	No (+6dB)
C2	52	52	53	Yes	54	53	No
C3	48	48	53	Yes	51	53	Yes
C4	46	46	53	Yes	51	53	Yes
C5	40	40	53	Yes	45	53	Yes
I1	66	66	58	No (+8dB)	67	58	No (+9dB)
I2	59	42	58	Yes	47	58	Yes
I3	42	63	58	No (+5dB)	64	58	No (+6dB)

Note:

1_Project criteria accounts for Project Echidna and Substation sources.

2_Exceedances to project criteria are indicated in red.

Table 6-17: Unmitigated predicted noise levels | night-time operation

Receiver	Overall Site criteria $L_{eq,15min}$ dB(A)	Night-time - Standard weather conditions			Night-time - Enhanced weather conditions		
		Predicted level $L_{eq,15min}$ dB(A)	Project Criteria[1] $L_{eq,15min}$ dB(A)	Meets project criteria?	Predicted level $L_{eq,15min}$ dB(A))	Project Criteria[1] $L_{eq,15min}$ dB(A)	Meets project criteria?
R1	38	26	28	Yes	32	28	No (+4dB)
R2	38	28	28	Yes	34	28	No (+6dB)
R3	38	27	28	Yes	32	28	No (+4dB)
R4	38	26	28	Yes	32	28	No (+4dB)
R5	38	24	28	Yes	30	28	No (+2dB)
R6	38	25	28	Yes	31	28	No (+3dB)
R7	38	12	28	Yes	18	28	Yes
R8	38	28	28	Yes	34	28	No (+6dB)
C1	63	58	53	No (+5dB)	59	53	No (+6dB)
C2	63	52	53	Yes	54	53	No (+1dB)
C3	63	48	53	Yes	51	53	Yes
C4	63	46	53	Yes	51	53	Yes
C5	63	40	53	Yes	45	53	Yes
I1	68	60	58	No (+2dB)	61	58	No (+3dB)
I2	68	41	58	Yes	46	58	Yes
I3	68	54	58	Yes	56	58	Yes

Note:

1_Project criteria accounts for Project Echidna and Substation sources.

2_Exceedances to project criteria are indicated in red.

Table 6-18: Unmitigated predicted noise levels | emergency operation

Receiver	Predicted level, Leq,15min dB(A)	
	Standard weather conditions	Enhanced weather conditions
R1	27	33
R2	29	35
R3	27	33
R4	27	32
R5	25	31
R6	26	33
R7	16	22
R8	28	34

Receiver	Predicted level, Leq,15min dB(A)	
	Standard weather conditions	Enhanced weather conditions
C1	58	59
C2	52	54
C3	48	52
C4	47	51
C5	41	45
I1	60	61
I2	42	47
I3	56	58

Noise impacts (traffic) | As operational traffic numbers are lower than the construction numbers (see section 3.2.3), there would be no associated impacts affecting the amenity of people living and working in the area.

Vibration impacts | While the generators and other site equipment generate vibration, they would be installed a sufficient safe-working distance from receivers not to cause any impact as described in **Appendix H**.

6.6.3 Mitigation and management

Table 6-19 lists the proposed measures to mitigate and manage noise and vibration impacts. Consistent with the guidelines not setting limits for an emergency, there is also no requirement to introduce specific noise treatments simply to deal with such unplanned rare events.

Table 6-19: Noise and vibration mitigation and management

ID	Measure	Owner
Detailed design		
6A	The location and form of the following measures will be included within the detailed design to achieve the criteria limits set by the Noise Policy for Industry (EPA, 2017). • Reselecting quieter equipment • Installing acoustic louvres to the plant room and/or attenuators to the cooling (air conditioning) units • Building solid barriers/partial enclosures around noisy plant	Proponent
6B	Low-noise construction equipment and/or methods, such as using bored piling instead of impact piling for example, will be selected by preference.	Proponent/ contractor
Pre-construction/construction		
6C	A **Construction Noise and Vibration Management Plan** will be prepared and implemented as part of the CEMP to address the following: roles and responsibilities, noise sensitive receiver locations, areas of potential impact, mitigation strategy, and monitoring methods. It will tie into the wider notification and complaints handling processes. The Plan will be prepared by a suitably qualified and experienced person, and it will: • Describe the measures to achieve the construction noise management levels in the Interim Construction Noise Guidelines (DECC, 2009), otherwise identify all feasible and reasonable measures to manage, minimise, and limit the scale and duration of the exceedance • Describe the measures used to manage high noise-generating work, including the planned piling.	Contractor
6D	Noise affected receivers will be notified at least five days before starting work regarding construction periods and working hours.	Proponent/ contractor
6E	Work will take place within the approved working hours. Any work undertaken outside of this will be managed and monitored in accordance with the Interim Construction Noise Guidelines (DECC, 2009).	Contractor
6F	Stationary plant and equipment will be located as far away from sensitive receivers as possible.	Contractor

ID	Measure	Owner
6G	Site sheds and other temporary structures or screens will be used to limit noise exposure.	Contractor
6H	The construction equipment, method, or programme will be modified to minimise concurrent activities that significantly increase the noise levels. The programming will also consider the location of concurrent activities.	Contractor
6I	The following work practices will be adopted: • Workers and contractors will be given training to use equipment in ways to minimise noise • Site managers will periodically check the area for noise issues • Use of radios or stereos outdoors will be prohibited • The overuse of public address systems will be limited • Equipment and plant will be turned-off when it is not being used.	Contractor
6J	All vibration intensive equipment will adopt at least the minimum safe-working distances set under guidance. By precaution, should equipment be located within these distances, additional mitigation measures, such as vibration monitoring, will be used.	Contractor
Pre-operation/operation		
6K	Attended noise compliance monitoring will be carried out within three months of the site's full operation (i.e., after the full fit out). It will be carried out by a suitably qualified and experienced acoustic consultant at surrounding sensitive receivers. It will occur: • When the development is operating, and the back-up generators are being tested • For 1.5 hours during the day, 30 minutes during the evening, and one hour at night. If the modelling shows a risk of exceedance, then additional noise mitigation measures will be investigated and installed.	Proponent
6L	A **Noise Compliance Verification** report will be prepared within 30 days of completing the attended noise compliance monitoring. This report will be prepared by a suitably qualified and experienced person. It will assess compliance against the Noise Policy for Industry (EPA, 2017). Outline management actions will be taken to address any exceedances of the noise limits. The Report will describe the contingency measures used if management actions are not effective in reducing noise to an acceptable level.	Proponent
6M	The operational equipment and machinery will be maintained within performance specifications. This will include testing and maintaining the back-up diesel generators in accordance with the schedule set out in the EIS.	Proponent
6N	Any received noise complaint will be investigated, and additional noise monitoring will be carried out if needed. In the event of discovering that the complaint is valid, additional noise mitigation measures will be investigated and implemented as needed.	Proponent

6.7 Ground and water conditions

This section summarises the potential impact on ground and water conditions. **Appendix K** includes the supporting technical assessment.

6.7.1 Method

A desktop study was carried out to help assess potential impacts. It confirmed the existing subsurface geology and groundwater conditions. It was supported by reviewing published information and existing investigations onsite (see section 3.3 in **Appendix K**). The report was used to:

- Describe the site geology, soil landscape and topography
- Confirm the risk of salinity and acid sulfate soil (ASS)
- Identify the location and condition of the nearest surface water
- Confirm the groundwater depth and condition under the Site.

6.7.2 Existing environment

The following section describes the ground and water conditions onsite.

Ground conditions

The ground conditions onsite are defined by the underlying topography, geology, soils, and site history. **Appendix K** provides more detail.

- *Site topography* | As noted in section 1.3, the Site was levelled and profiled under the Concept Design Approval to create the conditions described in section 3.2.2.
- *Geology* | Regionally, the area (and site) is underlain by Bringelly Shale. This is a mix of claystone, shale, laminate, and sandstone. River alluvial deposits are mapped in the region but not onsite. However, a drainage line shown on the 1975 arial imagery means there may be some associated local alluvial deposits beneath the Site. No faults or dykes are mapped in the area. Previous site investigations confirm there is a mix of clay and gravel layers under the Site, which affect groundwater content and movement.
- *Soils* | Regionally, the area (and site) is underlain by Blacktown Residual Soils. These soils have the potential for seasonal waterlogging and water erosion. They are fine grained and of low permeability and hydraulic conductivity.
  - *Acid sulfate soil* | Mapping confirms there is an extremely low ASS probability onsite
  - *Salinity* | Mapping confirms there is a moderate-to-very high potential for saline soils onsite. The salinity is reflected in the groundwater as described below[9].

Surface and groundwater conditions

There are the following conditions onsite and locally, with **Appendix K** providing more detail.

- *Surface water* | The nearest surface water to the Site is about 230 metres to the north. This flows east via a series of drainage channels, lines, and farm dams before connecting into Eskdale Creek, which in turn flows into Eastern Creek about 2.5 kilometres to the east, on the opposite side of the M7 Motorway. The site has been profiled to support stormwater runoff as described in section 3.2.2.
- *Groundwater* | The mapped groundwater is about five-to-seven metres belowground. It was sampled at about six metres belowground in 2019 during the drought. Regionally, groundwater is found in the Bringelly Shale due to its inclusion of bedding joints and faults that allow groundwater to flow freely. Locally however, the lenses of clay and gravel affect flows, and limit connectivity (movement) across these layers. This was confirmed through the site investigations. There is a likely relationship between the surface and groundwater in the area, but this is unconfirmed. The groundwater is also partly saline.
- *Aquatic and groundwater dependent ecosystems* | There are no groundwater dependent ecosystems on, or within 20 metres of, the Site, confirmed by reviewing the corresponding atlas in August 2022.

6.7.3 Assessment

This section describes the impact on ground and water conditions.

Construction

Ground conditions | The following impacts could occur from carrying out the construction activities described in section 3.3.1. They would be most likely to occur in the first few months when carrying out Activity 1 and Activity 2. This is when the earthworks, excavations, and piling would be taking place.

- Washout, erosion, and sediment discharge of exposed soils
- Erosion, leaching, and dust generation from stockpiled materials
- Loss of soil quality and condition from material stockpiling
- Associated soil quality impacts through accidental spills caused by:
  - Use of chemicals outside of contained areas
  - Traffic accidents, including loading and unloading risks
  - Leaks and drips from poorly maintained vehicles, machinery, and equipment
  - The temporary storage and management of spoil and waste (leading to leaching).

[9] Saline soils can affect vegetation growth as they interfere with nitrogen uptake. They can also be harmful to plants and animals, while causing chemical and physical damage to buildings.

The earthworks and compaction carried out onsite under the Concept Design Approval stabilised the area. The additional excavation and piling carried out under this Proposal would not be sufficient to cause any ground movement. This means there would be no material settlement or structural impact on surrounding infrastructure or utilities.

Salinity | While saline soils occur regionally, the bulk earthworks onsite treated the risk. However, the need to pile below the treated levels means there is still some potential for the underlying saline soils to mix with the surficial treated (non-saline) soils (see Table 5 of **Appendix K**).

Water conditions | The following impacts could occur from carrying out the construction activities described in section 3.3. Again, the greatest risk would be during Activity 1 and Activity 2, most notably when installing the piled foundations.

- Sediment mobilisation and disturbance
- Accidental chemical, fuel, and hazardous spills
- Leaching from stockpiled materials
- Altered groundwater flow and capacity through disrupting pathways and localised ground compaction
- Loss of groundwater quality through physiochemical changes
- Potential pollutant discharge to groundwater.

Groundwater | Groundwater is likely to be encountered when installing the piles (Activity 2). There is not enough information at the minute to confirm the extent and volumes, but it is likely to be limited when piling through clay, and greater when piling through gravel. The piling is also unlikely to create new groundwater flow pathways due to the limited number of piles, and depth of piling, but this will be confirmed through further geotechnical investigation during the detailed design and is something that can be effectively managed through using standardised measures to isolate and encase the piled boreholes. The recorded rate of groundwater inflow onsite means there would be no need to dewater the excavation, otherwise, store, treat, and dispose of groundwater onsite.

Operation

The following are potential operational impacts:

- ***Ground conditions*** | The proposed landscape planting would allow the exposed soils to stabilise and re-establish over time. However, in the short-term there would be the potential for:
  - Ongoing erosion and sedimentation if the reinstatement is not successful
  - Loss in soil quality from direct and indirect runoff, which would be worse if the stormwater drains are not properly maintained and they back-up.
- ***Water conditions*** | Impacts could occur from carrying out the activities described in section 3.2.3 resulting in:
  - Ongoing scour, erosion and sedimentation around overland flow discharge points
  - Spills and leaks during maintenance and repair work.

6.7.4 Mitigation and management

Table 6-20 lists the proposed measures to mitigate and manage impacts to ground and water conditions.

Table 6-20: Ground and water conditions mitigation and management

ID	Measure	Owner
Detailed design		
7A	Further geotechnical investigation will be carried out to confirm the potential groundwater impacts. If needed, the piles and construction method will be designed to prevent any vertical or horizontal movement of groundwater.	Proponent
Pre-construction/construction		

ID	Measure	Owner
7B	A **Soil and Water Management Plan** will be prepared and implemented as part of the CEMP. The Plan will identify all reasonably foreseeable risks relating to ground and water condition impacts and describe how these risks will be addressed during construction. It will require all erosion and control measures to be provided onsite before construction starts. It will be prepared using the various volumes of Urban Stormwater Soils and Construction (Landcom, 2004). It will set out erosion and sediment control measures for various construction activities, including the clearing, excavation, and stockpiling to mitigate impacts. The Plan will include strategies to manage: • Stockpiles • The import of (virgin) excavated natural material for use onsite • Testing under the Resource Recovery Exemptions (EPA, 2022) to reuse material • Discharge limits in accordance with section 120 of the POEO Act • Records of the volume and type of fill • Site entrances and exit stability • Sediment fencing, basins, and dams • Mesh and gravel and geotextile inlet filters.	Contractor
7C	A site-specific **Erosion and Sediment Control Plan** will be prepared and implemented as part of the Soil and Water Management Plan. The Plan will include arrangements for managing wet weather events. This will include monitoring of potential high-risk events (such as storms), and specific controls and follow-up measures to be applied in the event of wet weather. The Plan will incorporate the following controls: • Appropriate locations of stockpiles, construction materials, fuels, and chemicals, including bunding where required • Divert or capture the overland flow water for filtration prior to discharge • Installation of stabilised site entry/exit points and wheel wash bays to minimise the transportation of construction materials onto adjoining roads • Sediment fencing to contain and manage runoff within the site • Reuse of the temporary sediment basin to collect the runoff on the construction site • Reuse of the stormwater collected in the temporary sediment basin for dust suppression • Use of mesh and gravel and geotextile inlet filters • Implementation of a maintenance plan for the site and wider private stormwater network.	Contractor
7D	Suitable erosion and sediment controls will be installed before construction starts in accordance with the Erosion and Sediment Control Plan and Urban Stormwater Soils and Construction Volume 1 (Landcom, 2004). Further environmental assessment will be carried out if they need locating outside of the site.	Contractor
7E	All stockpiles will be designed, established, operated, and decommissioned in accordance with the Stockpile Management Guidelines (EPA, 2021).	Contractor
7F	A site-specific **Emergency Spill Plan** will be developed and implemented. It will include management measures and relevant EPA guidelines. The Plan will address measures to be implemented in the event of a spill, including initial response and containment and the notification of emergency services and relevant authorities, including the EPA.	Contractor
7G	Testing will verify the site-specific soil and groundwater aggressivity. Following this, an earthworks management strategy will be developed to avoid mixing of saline soils in areas of lower or non-saline soils.	Contractor
7H	Any potentially contaminating materials will be stored onsite in a secure containment area in the compound. This will have sufficient capacity to hold 110 percent of the stored volume, and any spills or discharges will be collected and transported offsite to a licenced facility in accordance with the established waste management procedures.	Contractor
7I	Vehicle and equipment maintenance will take place in the contained area in the site compound to prevent any loss in the event of an accidental spill. Equipment and machinery will not be refuelled onsite.	Contractor
Pre-operation/operation		
7H	An **Emergency Spill Plan** will continue to be implemented onsite.	Proponent
7I	A site reinstatement inspection will be carried out to confirm the area is stabilised and there is no residual erosion or sediment risk.	Proponent

6.8 Stormwater, wastewater, and flooding

This section summarises the potential stormwater, wastewater, and flooding impacts. **Appendix Q** includes the supporting technical assessment.

6.8.1 Method

This section outlines the method used to review the proposed design and consider any potential impacts. It was supported by reviewing the stormwater and wastewater provides included under the Concept Design Approval (see **Appendix Q**). The report was used to:

- Understand the stormwater, wastewater, and flooding design delivered under the Concept Design Approval
- Identify any changes needed to support the Proposal
- Identify the interaction between the Site and wider stormwater infrastructure
- Use modelling to develop a drainage strategy to minimise impacts on receiving watercourses
- Use modelling to develop a treatment strategy to achieve the required water quality standards
- Review water recycling and reuse opportunities for the development
- Calculate the Site's water balance
- Confirm the flood risk and potential onsite.

Water quality modelling was carried out using information from Blacktown City Council to identify if specific treatment measures would need including onsite to improve the stormwater quality prior to its discharge. These measures are called water sensitive urban design controls. **Appendix Q** provides more detail.

6.8.2 Existing environment

The following section describes the existing conditions onsite to help understand the surface water runoff and flood risk. **Appendix Q** provides more detail on the stormwater and flooding conditions, and **Appendix R** specifies the drainage design.

- *Stormwater drainage* | As described in section 3.2.2, the stormwater infrastructure needed to support the Proposal was installed under the Concept Design Approval. It was designed using Australian Standards to cope with the rainfall conditions onsite, plus the future risk of climate change. This system comprises a series of pits, pipes, and chambers that also service Building 1/1A used to collect and regulate stormwater before it drains offsite.
- *Wastewater drainage* | Section 3.2.2 also confirms that the wastewater infrastructure to support the Proposal has been installed. Again, this has been sized to cope with the associated demand onsite, with wastewater discharging to the Sydney Water sewer system.
- *Ambient water quality* | Water quality for the overall site was modelled. Rather than considering ambient conditions locally, the assessment focussed on the ability to effectively reduce pollutant loads below set targets relating to suspended solids, phosphorous, nitrogen, and gross pollutants
- *Flood risk* | The area is not located on flood prone land or in a flooding precinct as shown on Council mapping below.
- *Flood planning levels* | The NSW Floodplain Development Manual recommends a flood planning level set at a one percent chance of there being a flood event each year plus an additional contingency, consistent with the precautionary principle called a freeboard allowance. This was adopted in the design.

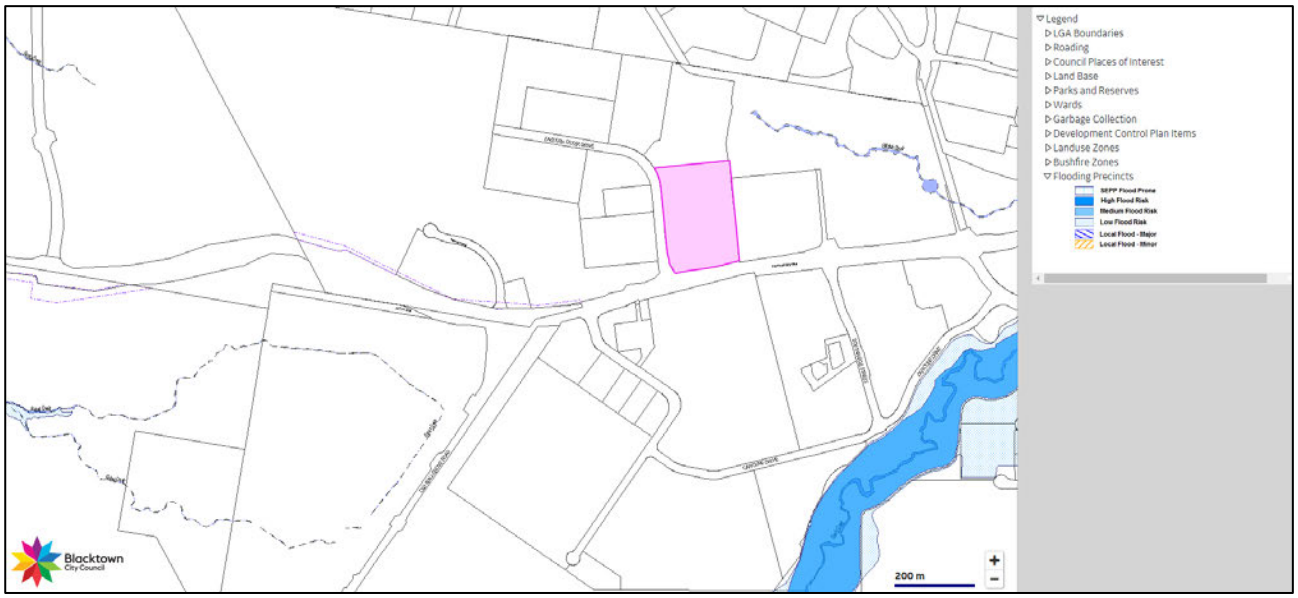

Figure 6-9: Flooding precinct

6.8.3 Assessment

This section describes the stormwater, wastewater, flooding, and water quality impacts.

Construction

Any stormwater impacts during construction would be short-term and temporary.

Stormwater and flooding | Given that the Site is not located on flood prone land, there is limited potential for prolonged flooding. That said, the extreme climate-affected weather experienced in the past two years demonstrates that most parts of Sydney can experience some form of flash flooding. This is caused by the ground being too saturated to allow the rain to soak away quickly, meaning water sits for a while (called sheeting). This may cause construction work to stop temporarily, while causing:

- Additional erosion and loss of soil quality from equipment trafficking over waterlogged ground
- Stockpile and earthwork destabilisation from additional washout (into the newly installed stormwater drains)
- Loss of landscape planting due to wash out
- Collection of water in open excavations and associated worker safety risks
- Downstream water quality impacts.

By implementing standard and effective management controls that are often introduced on construction sites, the above impacts would be safeguarded against and minimised.

Wastewater | Site construction wastewater facilities would likely consist of plumbed site cabins. These would have sufficient capacity to service the wastewater during construction. The cabins would be supplied and managed by a licenced contractor, who would service and collect the wastewater, otherwise it would discharge to Sydney Water's sewer network.

Operation

Appendix S and **Appendix R** confirm that the site infrastructure has been designed to achieve the necessary stormwater, wastewater, and water quality requirements defined under Australian Standards, various guidelines, and set by Council and others. Section 3.2.2 describes the stormwater and wastewater design and discharge arrangements.

Stormwater | The stormwater infrastructure is sufficient to cope with the calculated runoff. In fact, it is over designed because it did not account for the capture of 50,000 litres of rainwater as described in section 3.2.2. The stormwater infrastructure would prevent any impacts such as surcharging, pooling, or ponding to occur,

other than occasional sheeting during extreme rainfall. Offsite discharge would be regulated through the regional detention basin. This means there is no need for any additional onsite detention.

Water quality | As noted in section 3.2.2, gross pollutant traps would be installed onsite to remove large debris from the stormwater. The modelling results confirmed this would be sufficient to treat the water without the need for additional measures. As such, there would be no need to install any water sensitive urban design controls.

Wastewater | Appendix Q confirms there would be sufficient capacity in the Sydney Water sewer network to cope with the anticipated discharge of just over 11 megalitres of wastewater from the administration building and recirculated cooling system (see section 3.2.2).

Flooding | As noted in section 3.2.2, the Site has been designed to a flood planning level 0.5 metres above the stormwater inlet in the southwest corner. This, in combination with the sizing and specification of the stormwater system, would be sufficient to prevent the site becoming inundated from a back-up in discharge during an extreme storm event. As above, sheeting could occur during extreme events, resulting in some localised standing water occurring at low points. This would either drain or evaporate over time. Its depth and extent would not be sufficient to present a flood risk or affect the Site's operation.

Water balance | The water balance assessment summarised below, was used to develop the water supply, management, and drainage strategy. This confirmed that the water demand onsite could be balanced by using a mix of rainwater and portable water. It also confirmed that there was sufficient availability in potable water supplies and the stormwater and sewer network to achieve a water balance across the Site. This does not remove the wider aims to reduce water use, as described above in section 6.3.

Table 6-21: Water balance summary

Water use or generation	Gain (+) use (-) (Annual average in kL)
Rainfall on site	+18,300
Rainwater used for process	-3,500
Stormwater discharge from site	-14,100
Stormwater infiltration and evapotranspiration on pervious areas	-700
Potable water supply	+17,500
Potable water used for process	-6,300
Discharge to sewer	-11,200

6.8.4 Mitigation and management

This section describes the proposed measures to mitigate and manage stormwater, wastewater, and flooding impacts.

Integrated Water Management Plan

Appendix Q provides details of the drainage design and demonstrates compliance with the stormwater, wastewater, flooding, and water quality requirements governing development onsite. It is supported by the modelling carried out in the technical report. Section 5.2.5 of **Appendix R** details the consultation carried out with Sydney Water to confirm that it would supply potable water and be able to accept the discharge to sewer.

Mitigation and management measures

Table 6-22 lists the proposed measures to mitigate and manage stormwater, wastewater, and flooding impacts in addition to those described in section 6.7. These would complement the measures put in place under the Concept Design Approval..

Table 6-22: Stormwater, wastewater and flooding mitigation and management

ID	Measure	Owner
Detailed design		
8A	Detailed design drawings will be prepared by a suitably qualified engineer before issuing the relevant Construction Certificates. They will show detail on the: • Stormwater management system and connections into the wider site provisions • The relationship between the footings, foundations, and stormwater management systems • How stormwater arrangements can manage events up to the one percent annual exceedance probability (100-year average return interval).	Contractor
Pre-construction/construction		
8B	Weather reports will be monitored every day. If there is suspected extreme weather (heavy rainfall and wind) the site will be managed and closed down safely. This will involve covering excavations and checking the stormwater management, erosion, and sediment control provisions.	Contractor
Pre-operation/operation		
8C	The stormwater drains, channels, gross pollutant traps, pits, sumps, and overland flow routes will be routinely inspected and maintained to avoid any blockages to prevent soil quality loss.	Proponent

6.9 Hazards and risk

This section summarises the potential hazards and risks. **Appendix L** includes the supporting technical assessment.

6.9.1 Method

The assessment was carried out in accordance with the Resilience and Hazards SEPP, and relevant saved provisions from the Applying SEPP 33 Guideline (DPE,2011). The thresholds in the Applying SEPP 33 Guideline represent the maximum quantities of dangerous goods that can be stored or transported without causing a significant risk. The assessment presented in **Appendix L** involved:

- Defining thresholds for the storage quantities and transportation frequencies of dangerous goods
- Carrying out a hazards and risk screening review to determine whether a Preliminary Hazard Analysis was needed as described under Applying SEPP 33 Guideline (DPE, 2011)

Table 3 in **Appendix L** lists the screening process in the Applying SEPP 33 Guideline for each dangerous good class.

6.9.2 Existing environment

The following dangerous goods would be stored on the operational Site.

Table 6-23: Total dangerous good quantities

Substance	UN Number[1]	Dangerous good class	Approximate quantity	POEO Act threshold
Lithium-ion batteries	3480/3481	9	140 tonnes	2,000 tonnes
Diesel	1202	Not a dangerous good but it classifies as a combustible liquid	340 tonnes	2,000 tonnes
Conventional batteries	2800	8 PGIII	15 tonnes	2,000 tonnes

1 | A UN number is a four-digit number that identifies dangerous goods, hazardous substances, and articles (such as explosives, flammable liquids, toxic substances, etc.) in the framework of international transport.

6.9.3 Assessment

The following section identifies hazards and assesses the risk that they pose.

Construction

Low volumes of dangerous goods and hazardous materials, such as diesel, petrol, lubricants, and paints, would be stored onsite and used during construction. The required volumes would be stored in the designated area in the site compound (see section 3.3.6). They would be well-below hazardous volumes but could still present a risk to ground and water conditions as described above in section 6.7.

Operation

As noted above, the quantity of combustible and dangerous goods would be below the thresholds requiring a Preliminary Hazard Analysis. The volumes are also below the thresholds where an EPL is needed (see section 4.7). This means that while there are inherent dangers associated with these materials, the scale of the risk is reduced below levels that would classify the Site as a potentially hazardous industry. The inherent dangers are as follows.

- *Batteries* | There is a potential fire risk associated with batteries. They can cause something called a thermal runaway chain reaction (i.e., an uncontrollable rapid increase in temperature). For this reason, the batteries would be stored in a specific fire-resistant room that includes adequate ventilation, smoke detection, and sprinklers.
- *Diesel* | Diesel presents a fire and explosion risk. For this reason, the diesel would be stored in an intrinsically safe way consistent with AS1940:2017-The Storage and Handling of Flammable and Combustible Liquids (Standards Australia, 2017).

A review of Before You Dig Australia plans, indicated that no gas mains or fuel lines are near the Site. This removes any associated risk of striking an asset containing gas or fuel.

Operational activities | There is going to be a limited use of materials that present a hazard onsite. There would be the ongoing use of low volumes of hazardous materials, such as diesel, petrol, lubricants, and paints, to service and maintain the Site. The key hazard would be the refilling of the diesel tanks about once every six months based on the test schedule described in section 3.2.3.

While there is also an inherent risk of equipment failure, an intended aim of the routine service and maintenance schedule described in section 3.2, is to avoid any failures to avoid the centre going offline. This level of servicing and maintenance is typically higher than most industrial facilities, meaning it would reduce the hazards and risks. The diesel tanks would also be refuelled by a licenced contractor.

6.9.4 Mitigation and management

Table 6-24 lists the proposed measures to mitigate and manage hazards and risks.

Table 6-24: Hazard and risk mitigation and management

ID	Measure	Owner
Detailed design		
9A	A **Fire Safety Study** will be prepared one month before construction starts. It will be prepared in consultation with Fire and Rescue NSW. The Study will include details on: • The final back-up power system • Aspects of Hazardous Industry Planning Advisory Paper No.2. Fire Safety Study (DoP, 2011) • Best Practice Guidelines for Contaminated Water Retention and Treatment Systems (NSW Government, 1994)	Proponent
Construction/operation		
9B	Hazardous materials will be removed and disposed of in accordance with the relevant legislation, codes of practice, Australian Standards, and the Work Health and Safety Regulation 2017.	Proponent/ contractor
9C	All hazardous substances will be stored and managed in accordance with relevant Australian Standards, and in particular, AS1940:2004-The Storage and Handling of Flammable and Combustible Liquids (Standards Australia, 2004), the Hazardous and Offensive Development Application Guidelines - Applying SEPP 33 (DoP, 2011), Storing and Handling Liquids – Environmental Protection – Participant's Manual (DECC, 2007), the Work Health and Safety Regulation 2017, and the *Environmentally Hazardous Chemicals Act 1985*.	Proponent/ contractor

ID	Measure	Owner
9D	Dangerous good quantities will remain below the thresholds listed in the Hazardous and Offensive Development Application Guidelines – Applying SEPP33 (DoP, 2011)	Proponent/ contractor
9E	A **Hazard Management and Site Emergency Plan** will be prepared and implemented to manage impacts from hazardous materials during construction and operation.	Proponent/ contractor
9F	The following measures will be included onsite as per the Work Health and Safety Regulation: • Outer warning placards regarding quantities of diesel stored will be displayed at all emergency service entrance points • Placards will be displayed on or near the diesel belly tanks • A manifest of diesel storage will be prepared • The regulator will be notified of diesel storage exceeds the manifest quantities • A Site Emergency Plan will be prepared and provided to NSW Fire and Rescue.	Proponent/ contractor

6.10 Waste management

This section summarises the potential waste impacts. **Appendix P** includes the supporting technical assessment.

6.10.1 Method

The waste management assessment in **Appendix P:**

- Estimated construction and operational waste volumes using reference guidelines for new developments
- Identified construction and operational waste streams and volumes in accordance with the Waste Classification Guidelines (EPA, 2014)
- Established requirements for waste storage, handling, transport, and disposal
- Identified the destination of construction and operation materials.

Section 6.3 describes additional measures that would be used to reduce resource consumption and materiality, reduce waste, and promote the circular economy and waste hierarchy.

6.10.2 Existing environment

There are several waste disposal facilities locally where materials could be recovered, recycled, or disposed of. These facilities are licenced to receive and recover or dispose of general solid (putrescible/non-putrescible) waste. There are also facilities and contractors in Sydney that can handle special, hazardous, and restricted solid waste, in the unlikely event that these materials would be generated onsite.

Waste management contracts would only be confirmed pre-construction and pre-operation, meaning the precise haul routes are currently unknown. However, there is sufficient capacity in Sydney to receive the site-generated materials and these facilities have been specifically designed to handle heavy vehicle traffic.

6.10.3 Assessment

The following section assesses the impacts of the generated wastes.

Construction

Table 3 of **Appendix P** lists the anticipated construction waste volumes and types. In summary, they are expected to comprise

- Site excavation waste
- Construction waste
- Packaging waste
- Construction work compound waste.

Section 3.2.2 shows that there would be a net import of material to site. The imported fill would need to be in accordance with the Government's available resource orders and exemptions (EPA, 2022). Section 6.8.3

notes that the site amenities would be plumbed site-cabins, with the wastewater either being removed by a licenced contractor or discharged to the Sydney Water sewer network.

The main wastes generated onsite would be redundant electronic (e-waste) and packaging. Additionally, there would be general office and administration waste. Table 3 of **Appendix P** lists the anticipated operational waste volumes and types. In summary, they are expected to comprise:

- Paper and cardboard
- End-of-life e-waste, including material for secure destruction
- Infrequent hazardous materials for disposal (e.g., batteries, spill clean-up, paints)
- Bulky waste items, such as furniture and packaging.

Impact assessment

All waste has the potential to cause the following impacts if mishandled or inadequately stored:

- Material being disposed of as a waste over being recovered or recycled
- Misclassification resulting in missed opportunities to maximise recovery and recycling
- Soil, surface and/or groundwater contamination
- Human health exposure risk
- Wider amenity and environmental risks
- Dust and odour generation
- The attraction of pests and vermin.

In all cases, there are effective standardised measures to avoid and manage the above impacts. These would be implemented and monitored onsite.

6.10.4 Mitigation and management

This section describes the proposed waste management and mitigation measures. They supplement the waste related ESD measures and initiatives in section 6.2.3.

Waste Management and Resource Recovery Plans

The Proposal will operate under separate construction and operational waste management and resource recovery plans. Both will account for the waste volumes and types generated onsite. Both plans will focus on the circular economy and waste hierarchy. They will also identify the relevant resource recovery orders available to reuse material.

Mitigation and management measures

Table 6-25 lists the proposed measures to mitigate and manage waste-related impacts.

Table 6-25: Waste mitigation and management

ID	Measure	Owner
Construction/operation		
10A	A **Waste Management Plan** will be prepared and implemented in accordance with the Guideline for Waste Management in New Developments (Blacktown City Council, 2015) and the waste hierarchy. Specifically, the Plan will: • Will include provision for source separation systems for recyclable materials, including, paper and card, mixed recyclables, e-waste, and hazardous waste • Include recovery, recycling and waste diversion targets based on the aim to divert at least 80 percent of construction waste from landfill as per the *Waste Resource and Recovery Act 2001* • List the resource recovery exemptions and orders used onsite (EPA, 2022) • Include: – Provisions for the adequate storage and collection of waste – Requirements for a licenced contractor to handle all recovered and recycle materials – Measures from the National Waste Policy: Less Waste, More Resources (DAWE, 2018) • Outline procedures for temporary waste storage and stockpiling	Proponent/ contractor

ID	Measure	Owner
	• Set out processes for disposal, including onsite transfer, management, and the necessary associated approvals and permits • Include provisions to: – Minimise onsite storage to avoid potential issues associated with odour, visual amenity, and attracting vermin and pests – Contain materials during storage and transport, such as covering, fencing and bunding • Outline an Unexpected Finds Protocol • Include a process for auditing, monitoring, and reporting.	
10B	All material will be firstly classed under existing resource recovery order to prioritise recovery. Failing that, it will be classified in accordance with the NSW Waste Classification Guidelines (EPA, 2014). Finally, they will be handled and managed in accordance with the provisions of the *Protection of the Environment Operations Act 1997* and supporting Waste Regulations.	Proponent/ contractor
10C	Waste will always be secured and maintained within a designated storage area and must not be stored on neighbouring public or private properties.	Proponent/ contractor
10D	Materials removed from site will be directed to a resource recovery, recycling, or waste management facility, otherwise premises lawfully permitted to accept the materials.	Proponent/ contractor
10E	Waste generated outside must not be received at the site for storage, treatment, processing, reprocessing, or disposal. This includes waste generated on Building 1/1A.	Proponent/ contractor
10F	Stockpiled and stored wastes will be: • Appropriately: – Segregated to avoid mixing and contamination – Labelled – Stored to minimise the risk of erosion, leaks, and spills • Isolated from overland flow paths and stormwater drains.	Proponent/ contractor

6.11 Aboriginal cultural heritage

This section summarises the potential Aboriginal heritage impacts. **Appendix G** presents the updated searches of the State heritage records and an appraisal against the *National Parks and Wildlife Act 1974*, *Heritage Act 1977* (as it relates to Aboriginal heritage), and the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW, 2010).

The Proposal is situated on a Site that has previously undergone bulk earthworks (see section 1.3). Consultation with Heritage NSW was completed on 14 September 2022. An ACHAR was completed and approved in 2020 under the supporting Concept Design Approval. This confirmed there was no heritage record onsite. Further assessment was not required, and this was justified and approved under the Concept Design Approval.

6.11.1 Method

The assessment consisted of a desktop review of the previous investigations (see section 1.3) and:

- Update searches of the Aboriginal Heritage Information Management System to confirm the heritage record
- Consideration of the Connection with Country framework, and Traditional Custodian consultation (see Chapter 5) to confirm the area's cultural value.

This was done to see if there was a need to prepare an Aboriginal Cultural Heritage Assessment Report.

6.11.2 Existing environment

As noted in section 1.3, bulk earthworks have been carried out onsite, following confirmation that this would have no direct or indirect impact on the area's heritage record. This means the Site is clear of any physical heritage values. Updated searches in **Appendix G** confirm there are no sites, places, items, or objects recorded within 200 metres of the Site.

Outside of the heritage record, the area holds important (intangible) cultural value for the Traditional Custodians. There has also been a recognised loss in Connection with Country over the area for the past two

hundred years owning to European occupation. Section 5.4.2 describes the feedback from the Traditional Custodians around this subject.

6.11.3 Assessment

There is no potential to impact on any heritage record directly or indirectly. The nearest site is beyond the limit of the Proposal's impact. This removes the need to prepare an Aboriginal Cultural Heritage Assessment Report, as confirmed in **Appendix G**.

The Proposal's construction activities are not specifically adding to the additive loss of Connection with Country; however, the centre would lead to a permanent change in the landscape. This would have a cultural impact, as the Proposal further lends to the area's progressive 'European' urbanisation. Therefore, consultation with Traditional Custodians has been carried out to understand how the Proposal can Connect with Country. Table 6-26 below describes the commitments around this.

6.11.4 Mitigation and management

Table 6-26 lists the proposed measures to mitigate and manage Aboriginal heritage impacts.

Table 6-26: Aboriginal heritage mitigation and management

ID	Measure	Owner
Detailed design		
11A	The Proposal's detailed design will continue to account for Traditional Custodians, and key Aboriginal stakeholders will have suggestions relating to the detailed architectural design and façade.	Proponent/ Traditional Custodians
11B	The detailed design will provide opportunities for: • First Nation employment and procurement from businesses under majority Aboriginal ownership • Traditional Custodians and key Aboriginal stakeholders to contribute to the landscaping and planting strategy • Traditional Custodians to perform a smoking or welcoming ceremony • Naming the development in local language and installing Acknowledgement of Country signage at the entrance or on the perimeter fencing.	Proponent/ Traditional Custodians
11C	The Proposal will create First Nation employment opportunities, while helping the employees understand and respect the First Nation culture of the Country. Events such as NAIDOC will be recognised in a meaningful way, supporting both First Nation and non-Aboriginal staff. They will be considerate and understanding of cultural obligations, including, but not limited to, supporting Sorry Business.	Proponent/ Traditional Custodians
Pre-construction/construction		
11D	A **First Nation Unexpected Finds Protocol** will be developed and implemented. The Protocol will include measures to deal with any unanticipated archaeological deposits or skeletal remains found during construction. It will require works within 10 metres of the item or object to stop immediately. It will also require the contractor to notify the Proponent so they can assist in co-ordinating the next steps, which are likely to involve consultation with an archaeologist and Heritage NSW. Where required, further archaeological work and/or consents will be carried out and obtained before work restarts in this area. Works would only be allowed to restart near a confirmed First Nation item or object in accordance with Part 6 of the *National Parks and Wildlife Act 1974.*	Contractor
11E	A smoking ceremony and traditional dance will be carried out by the Traditional Custodians before construction starts.	Contractor/ Traditional Custodians
Pre-operation/operation		
11F	A smoking ceremony and traditional dance will be carried out on opening the centre.	Proponent/ Traditional Custodians

6.12 Social impacts

This section summarises the potential social impacts. **Appendix M** includes the supporting technical assessment.

6.12.1 Method

The social impact assessment presented in **Appendix M** was prepared in accordance with the Social Impact Assessment Guideline for State Significant Projects 2021 (DPE, 2021) and its associated eight themes, which are listed below in Table 6-27and Table 6-28. The impacts were rated from *low-to-very high* using a matrix of magnitude (scale of impact) and likelihood (of occurrence). The social impact assessment in **Appendix M**:

- Defined the study area
- Reviewed relevant policies, guidelines, and plans
- Reviewed an analysed the community profile using ABS Census data
- Identified existing characteristics associated with the area's way of life, community, accessibility, culture, health and wellbeing, surroundings, livelihoods, and governance (decision-making systems)
- Identified and analysed potential social impacts and mitigation measures.

Section 4 of **Appendix M** details the existing social and demographic profile across Eastern Creek. This captured the character of the site and locality. The Eastern Creek Suburb statistical area was the smallest available in the 2021 Census data. 2021 Census data from the wider statistical areas of Blacktown and Fairfield LGAs were also reviewed to characterise the broader community. 2016 Census data were used if information was not available from 2021.

6.12.2 Existing environment

As noted in other sections, the nearest residents are over 1.5 kilometres from the Site, with the area zoned for industrial use. The area is mainly used for commercial development. Workers and customers are the only people who routinely visit the area. There is no community infrastructure or recreational features locally that have high social value or amenity. Section 6.1 describes the area's low visual amenity, and section 6.11 described how the area's cultural amenity has been affected. For completeness, the following section summarises Eastern Creek's social and demographic profile, noting that this focuses on the key suburbs located away from the Site.

- *Population* | There are few people living in the area due to its industrial character. However, more people have moved into the surrounding suburbs over the past few years compared to other parts of Sydney
- *Age distribution* | More young people live in the surrounding suburbs, along with families with children under 15 who would enter the workforce in the coming decade looking for employment opportunities
- *Population forecast* | More people are expected to move into the Fairfield and Blacktown LGAs over the coming years. Blacktown's population is expected to grow more quickly than the State-average, while there would be less growth in Fairfield
- *Cultural diversity* | There is a high level of cultural diversity in the surrounding suburbs, with over a third of people mainly speaking Asian and Middle Eastern languages at home. There is a low First Nation population
- *Dwellings and households* | There is a lower-population density compared to the State-average. This is reflected in the high number of separate houses and the area's industrial character
- *Household weekly income* | There is a wide distribution of incomes in the area, with fewer low earners than the State-average. But there are equally fewer high earners
- *Housing tenure and cost* | Over 40 percent of homeowners have an outstanding loan, with repayments standing around $1,950 per month in 2021, which is likely to have increased due to inflation. This is putting around 20 percent of owners under housing stress. Slightly more people are renting than across the State, but rental costs are slightly lower
- *Employment and labour force* | Employment is slightly higher than the State-average, with registered unemployment being about the same as across NSW.
- *Education* | There is an abundance of technical and trade workers, labourers, and machinery operators and drivers in the area compared to the State. This means there are fewer trained professionals.

6.12.3 Assessment

As noted above, the Site's location in an industrial area, with the nearest residents being over 1.5 kilometres away, limits the social impacts. The following section summarises this, drawing on the detailed assessment provided in **Appendix M.**

Construction

All construction impacts would be short-term and temporary, lasting for the time certain key activities would take place during construction.

Table 6-27: Assessment of potential construction impacts to social values

Category	Description	Impact
Way of life	How people live, work and play including how people get around, for work, home, and leisure. This includes local community lifestyle and amenity changes.	● | *Negative impact* for those people who work in the area. This would be due to the inconvenience caused by a temporary increase in traffic, and the loss of amenity people would experience (see section 6.1, section 6.4, and section 6.5) *Unlikely to impact* the way of life for the surrounding suburbs. This is because the nearest resident is 1,600 metres south of the Site, which is beyond the limit of the Proposal's impact.
Community	Community cohesion and values, amenity impacts and sense of place for residents.	● | *Negative impact* for those people who currently work in the area. Their amenity would be temporarily impacted during construction (see section 6.1, section 6.4, and section 6.5). *Unlikely to impact* the communities associated with the residential suburbs in Eastern Creek because they are located beyond the limit of the Proposal's amenity-related impact, and the work would be carried out in an area that has been specifically zoned and designed for industrial use. As there would be no amenity impact for people in these areas this avoids affecting their sense of place.
Accessibility	Traffic and parking space related to construction activities and workers.	*Unlikely to impact* the people who work in the area or site construction workers as there is sufficient capacity on the local road network with good connections to avoid delays or congestion. Additionally, the good access to the M4 Motorway and M7 Motorway means that the proposed construction workers would be able to travel to and from site easily. This is further supported by two bus routes servicing the area and a footpath and shared use path on Old Wallgrove Road (see section 6.2).
Culture	Connection to Country, Connection to Place, and impact on Aboriginal cultural heritage	*Unlikely to impact* the heritage record as there are no known objects or places of value onsite or locally (see section 6.11). The Proposal's construction activities are not specifically adding to loss of Connection with Country.
	Impact on European cultural heritage.	*Unlikely to impact* heritage as there are no known records onsite or locally (see section 6.14). There are also no intangible European cultural values or associations with the area.
Health and wellbeing	Noise and vibration, dust and exhaust, contaminated materials	● | *Negative impact* for those people who currently work in the area. Their amenity would be temporarily impacted during construction (see section 6.1, section 6.4, and section 6.5). *Unlikely to impact* site worker health as there is no contamination risk onsite (see section 6.14). Despite there being other inherent site-based worker-related issues common to all construction sites, these can be safely managed using standard measures. *Unlikely to impact* the health and wellbeing of the people living in the surrounding suburbs because they are beyond the limit of the Proposal's impact. While people living in Horsley Park may be affected by the noise when piling the foundations (see section 6.6) it would be insufficient to affect their health or wellbeing.
Surroundings	Visual amenity and temporary changes to the appearance and use of the site	● | *Negative impact* as the Proposal would be built in an industrial area, where there are ongoing activities that would be consistent with the planned construction works. While the work would not be visually 'distinct' from the activity taking place locally it would change the appearance and use of the Site, noting this has already changed (see section 1.3). The construction work is also too far from the nearest residents and suburbs to affect their visual amenity.

Category	Description	Impact
	Temporary traffic controls and wayfinding safety issues	*Unlikely to impact* traffic or result in congestion or delays as there is sufficient capacity on the local road network (see section 6.2). There is no proposal to introduce temporary traffic controls, diversions, or other changes on public roads.
Livelihoods	The creation of construction jobs	● | *Positive impact* as the Proposal would employ around 100 people over two years, from a range of skills that would be serviced from the local community in the first instance. As outlined in the previous section, there is a high proportion of machinery operators, technicians, and labourers in the area that could carry out various activities onsite, especially Activity 1 to Activity 4 described in section 3.3.1. This is supplemented by the commitment to promote First Nations employment (see Table 6-26).
	Supporting local construction materials and service businesses, and local food and retail stores.	● | *Positive impact* due to the Proposal (excluding its technical fit out) using materials that can be supplied locally, including from First Nations-owned businesses. This is supplemented by the ability to source labour from the local area and commitment to promote First Nation employment.
Decision-making systems	The extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy, and grievance mechanisms.	Consultation with adjacent landowners, leaseholders, and Traditional Custodians was carried out in early August 2022 (see Chapter 5). This was used to influence the Proposal. Consultation and engagement will continue over the coming months so that people can have their say, while a defined complaints handling, and corrective action process would be carried out during construction.

Operation

As shown below, the Proposal would typically have positive social impacts, as it would be built in a designated industrial area, away from residential or other culturally or socially sensitive areas, and it would have wider societal benefits by helping support Sydney's data requirements over the coming decades. This reinforces the choice to locate the Site in this part of Eastern Creek as described in section 2.6.

Table 6-28: Assessment of potential operational impacts to social values

Category	Description	Impact
Way of life	How people live, work and play including how people get around, for work, home, and leisure. This includes local community lifestyle and amenity changes.	● | *Positive impact* at the wider societal level as the Proposal would provide increased data security and reliability for people who live, work, and visit Sydney. Cloud data also supports how people move around Sydney, therefore providing an indirect benefit. Locally, the Proposal provides increased and diverse employment opportunities. The Proposal includes six bicycle parking spaces and end of trip facilities. It is close to public transport with two bus stops next to the site (see section 6.2). The site is located near key west-east and north-south motorways, which also helps improve access.
Community	Community cohesion and values, amenity impacts, and sense of place for residents.	*Unlikely to impact* the wider community's sense of place due to the separation distance to the key suburbs in Eastern Creek and the Site being in an industrial area. ● | *Positive impact* for residents from the provision of diverse job opportunities closer to home, potential training opportunities, and supporting the NSW Government's vision for a 30-minute-city. ● | *Negative impact* wider society due to the Proposal's high energy use, which does not align with regional sustainability values. However, this would be partly offset by purchasing all energy under a renewable agreement.
Accessibility	Physical access to the Site, traffic and parking space related to operation activities and workers.	● | *Positive impact* as the Proposal has been designed to include sufficient onsite parking for the people who would work and visit Site. This would prevent any loss of on-street parking, even though there are no restrictions or pressures locally given the Site's location. This would be complemented by the provision of six bicycle parking spots and end of trip facilities, with associated measures and incentives to promote walking, cycling, and catching public transport to and from work. More specifically, all transport modes are well catered for in the area, to account for the precinct's future development and growth. This means the Proposal's operational traffic and the increased use of bus services or walking and cycling, would not compromise other existing or future users.

Category	Description	Impact
	Accessibility to the energy network	*Unlikely to impact* the local energy network as power would be delivered via a dedicated onsite electricity substation and feed lines. This means the Site would not reduce supply availability for existing and future users in the area.
	Accessibility to the digital network	*Unlikely to impact* the wider digital network, as telecommunications would be provided via dedicated supplies (i.e., leased lines). ● | *Positive impact* on society as the centre would provide additional digital resilience to Sydney.
Culture	Connection to Country, Connection to Place, and impact on Aboriginal cultural heritage	*Unlikely to impact* Connection with Country. Section 6.11 notes that the cultural Connection of the Dharug peoples to the Country has been affected since the European occupation of the area and its agricultural clearing and development. On face value, the Proposal further lends to that loss, as the area progressively becomes more urbanised. Therefore, consultation with Traditional Custodians has been carried out to help understand how the Proposal can Connect with Country. Table 6-26 describes the commitments around this such as employment, smoking ceremonies, signage, and the use of native plantings.
Health and wellbeing	Air quality and diesel fuel related emissions, combustion, or ingestion of potentially hazardous materials	*Unlikely to impact* people's health and wellbeing as the scheduled testing or emergency use of the back-up generators could be carried out without any exceedance of amenity or health-based air quality criteria. While there would be potential exceedances of amenity and health-based noise criteria this could be adequately mitigated through noise treatments (see section 6.6). ● | *Negative impact.* While there would be various dangerous goods stored onsite (see Table 6-23), they would not be stored in quantities requiring a licence or that would present an unacceptable hazard. While there is an inherent risk of an incident or accident, this can be effectively managed through safety-in-design provisions, such as automated shut-off valves, containment and firefighting provisions, and other health and safety controls that are defined under Australian Standards. This would collectively reduce the risk of human exposure to acceptable levels.
	Walkability and public transport	● | *Positive impact* as the Proposal would include six bicycle parking spots and end of trip facilities, with associated measures and incentives to promote walking, cycling, and catching public transport to and from work. The nearest bus stops are located next to the Site. These are serviced by two routes that operate approximately twice in each direction every hour. The provision of these active and public transport options provides future workers with alternative travel options to promote healthier lifestyles.
	Security and crime prevention	● | *Positive impact* as crime prevention through environmental design elements would be in place including security cameras, controlled access, and lighting.
	Physical and mental wellbeing through nature	● | *Positive impact* as the Proposal provides native tree planting opportunities to reflect the ecological character of the surrounding area. This provides necessary green space for staff, which has an associated physical, mental health, and wellbeing benefits.
Surroundings	Amenity and aesthetic value	● | *Positive impact* as the Proposal is designed to be consistent with the adjacent data centre. Further, the final detailed design will continue to be developed to improve its Connection with Country and overall aesthetic within its setting. This should ensure the Proposal is congruous (fits in) with the surrounding landscape and amenity, consistent with the intended aesthetic of the wider precinct.
	Site activation	● | *Positive impact* as the Proposal would operate 24 hours a day. This means there would be an increased level of activity in the area, as intended under its development for industrial uses.
Livelihoods	The creation of operational jobs	● | *Positive impact* as the site would employ around 50 people which could be serviced by the local community. It would also provide training opportunities and procurement of First Nation staff and services.
Decision-making systems	The extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy, and grievance mechanisms.	Consultation with Traditional Custodians to date has identified the need for further engagement to discuss First Nation employment opportunities and the use of Aboriginal majority owned businesses. The Traditional Custodians have also identified an opportunity to recognise events like NAIDOC in a meaningful way as well as be considerate and understanding of cultural obligations.

SIA Guideline Summary

Table 6-29 summarises the predicted impact ratings against each of the eight SIA Guideline themes.

Table 6-29: Predicted impact ratings against the SIA guidelines

Category	Description	Overall impact rating
Way of life	How people live, how they get around, how they work, how they play, and how they interact each day	Medium
Community	Composition, cohesion, character, how the community functions, resilience, and people's sense of place	Medium
Accessibility	How people access and use infrastructure, services, and facilities, whether provided by a public, private, or not-for-profit organisation	Medium
Culture	Both First Nation and European heritage, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places, and buildings	Medium
Health and wellbeing	Physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health	Medium
Surroundings	Ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity	Low
Livelihoods	People's capacity to sustain themselves through employment or business	High
Decision-making systems	The extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy, and grievance mechanisms.	Medium

6.12.4 Mitigation and management

Table 6-30 lists the proposed measures to mitigate and manage social impacts. Many of the social impacts would be managed and mitigated through the measures identified elsewhere in this Chapter.

Table 6-30: Social mitigation and management

ID	Measure	Owner
Detailed design		
12A	A **Communications Plan** will be prepared and implemented as part of the CEMP. This will help provide timely and accurate information to the community. The Plan will include: • Mechanisms to provide details and timing of proposed activities to affected residents • Contact names and numbers for complaints • Details of public consultation. This Plan will be translated into the relevant key languages for the LGAs.	Proponent
12B	Consultation with Council and Transport for NSW will be carried out to identify opportunities to improve active and public transport access to the Site.	Proponent
12C	Further investigation into the intangible First Nation and European history of the site will be carried out. Further consultation with key (First Nation) stakeholders will be carried out to ensure outcomes are integrated into the detailed design.	Proponent
12D	Tree planting and other landscaping measures will reflect the surrounding environment. This will be done in consultation with Traditional Custodians to help provide a better Connection to Country. It will integrate into the final landscape and planting strategy.	Proponent
Pre-construction/construction		
12E	Opportunities to improve overall security, including safety and crime prevention measures, will be investigated, and implemented during construction.	Contractor

ID	Measure	Owner
12F	Use of local community and First Nation businesses will be priortised to supply materials and services.	Contractor
12G	The local community and First Nations employment and training opportunities will be prioritised.	Proponent/ contractor
12H	All key stakeholders including businesses and residents affected by any proposed construction activity will be notified at least five business days before it starts.	Contractor
12I	A complaints register will be prepared and implemented before construction. It will be monitored and maintained.	Proponent/ contractor
Pre-operation/operation		
12J	Use of local community and First Nation businesses will be prioritised to supply materials and services.	Proponent
12K	The local community and First Nations employment and training opportunities will be prioritised.	Proponent

6.13 Infrastructure requirements and utilities

This section summarises the infrastructure requirements and utility impacts associated with the Proposal. **Appendix R** includes the supporting utility servicing strategy.

6.13.1 Method

Appendix R was used to:

- Collate and review available data on existing public utilities
- Carry out a Before You Dig Australia search
- Confirm if there was public infrastructure or utilities that would need protecting or diverting
- Confirm the Proposal's utility servicing strategy.

6.13.2 Existing environment

There is no public infrastructure or utilities onsite. Stormwater, wastewater, telecommunication, and electricity pipes, pits, conduits, and connection points have been installed across the Site to service the Proposal, as described in section 3.2.1. They are all privately owned. The following utilities are present locally. **Appendix R** provides the detail.

- Endeavour Energy electrical conduits run along Old Wallgrove Road and Eastern Creek Drive
- Mains water on Eastern Creek Drive, supplying site
- Sewer provisions on Eastern Creek Drive, taking wastewater from site
- Telecommunications across the wider precincts, none of which service the Site.

6.13.3 Assessment

Appendix R provides a detailed analysis of infrastructure and utility supply and demand requirements. The following section summarises the impacts.

Construction

Damage, rupture and/or failure to shut down or isolate underground utilities during construction has the potential to result in the unexpected or uncontrolled release of:

- Untreated sewage from striking or damaging pipes
- Large electrical currents through striking underground electrical cable.

This may cause pollution or contamination of the local areas, it could present a worker-exposure risk or risk to the public, or it may result in a supply loss for customers.

While this is the case, the absence of recorded infrastructure and utilities across the Site means these impacts would be avoided. This is supported by the earthworks that were recently carried out onsite (see section 1.3), which would have dealt with any unmapped or unrecorded infrastructure. The proposed piling is the only planned activity that would involve ground disturbance below the recent earthworks. However, utilities are not typically buried below the first one or two metres.

Another risk is the potential to impact on the integrity of the recently installed utilities that would service the Site. As these utilities are not currently live, they could not be surveyed or detected using conventional methods. However, there were all accurately mapped and marked onsite using a global positioning system. This means they would be inherently avoided.

The utility demand during construction would be typical of similar sites around Sydney. It would also be similar to the demand required to construct Building 1/1A, which was confirmed not to place an unacceptable demand on supplies or affect other customers in the area (see **Appendix R**).

Operation

As noted in section 3.2.2 and section 6.12, dedicated mains power and telecommunications would be supplied to the Site to avoid supply reduction or loss for existing customers. Section 6.8 also confirms that Sydney Water could supply sufficient potable water in line with the water-balance, while being able to accept the Site's wastewater. Section 3.2.2 and section 6.2 describe how the internal site roads have been designed and sized to support the future traffic demand.

As noted in section 1.4.1, no voluntary or negotiated agreements would be needed to support the Proposal as the public infrastructure and utility provisions have already been installed under the previous consents.

6.13.4 Mitigation and management

This section describes the proposed infrastructure and utility management and mitigation measures.

Infrastructure Delivery, Management and Staging Plan

Appendix R identifies the consultation carried out with utility providers and the inventory of upgrades needed onsite to supply and support the Proposal. It provides a utility servicing and staging strategy based on a detailed analysis of infrastructure and utility supply and demand requirements.

Mitigation and management measures

Table 6-31 lists any additional measures needed to support the strategy and protect infrastructure and utilities that are not covered elsewhere in this Chapter.

Table 6-31: Infrastructure and utility mitigation and management

ID	Measure	Owner
Detailed design		
13A	A detailed **Infrastructure Delivery, Management and Staging Plan** will be prepared during detailed design. The Plan will: • Finalise the connection schedule and staging into the provided infrastructure and utilities • Confirm demand and supply requirements, including finalising agreements from utility providers • Describe who is responsible for maintaining and managing the infrastructure and utilities, including a clear map of the interface points between privately and publicly owned, operated, and maintained utilities • Set out the maintenance, testing, and servicing requirements of all onsite infrastructure and utilities • Define contingencies in the event of unexpected supply outcomes.	Proponent
13B	Further investigation will be carried out during detail design to confirm the peak demand on Sydney Water to maintain the water-balance onsite. If this balance cannot be maintained, additional measures to capture or recycle rainwater will be investigated and implemented as needed.	Proponent
Pre-construction/construction		

ID	Measure	Owner
13C	Evidence will be provided showing that the required arrangements have been made with the utility and service providers to supply the site before relevant Construction Certificates are issued.	Proponent/ contractor
13D	Precautionary utility checks will be carried out before starting work. This will include detailed searches of Before You Dig Australia records and consulting with relevant utility and service providers. Planned public utility service and maintenance schedules will be obtained to allow work to be coordinated.	Proponent/ contractor
13E	The existing private supporting utilities and services installed onsite will be identified and marked out before construction starts. Specific controls will be introduced to avoid accidental damage.	Contractor
13F	Any utility supply disruption will be agreed with the service providers beforehand. It will be carried out in accordance with their specifications and timed to minimise supply loss to customers. If supply needs cutting at night, and this affects the intention to limit work to standard construction hours, additional investigations will be carried out to understand any associated amenity-based impacts.	Contractor
13G	A detailed **Construction Delivery and Staging Plan** will be developed in consultation with public infrastructure and utility providers. It will finalise the construction delivery plan, setting out the expected utility demand. It will include any unusual or atypical requirements when carrying out high-demand activities. The Plan will describe how the utility demand will be met onsite, including contingency provisions.	Contractor
13H	Post-installation integrity tests will be carried out at all connection points once installed to avoid any risk of containment loss or leaks.	Contractor
Pre-operation/operation		
13I	A Compliance Certificate will be obtained for any services and utility connections not already obtained under the Concept Design Approval. They will be obtained before the relevant Occupation Certificate is issued.	Proponent/ contractor
13J	The onsite infrastructure and utilities will be routinely inspected, serviced, and maintained to prevent any containment or operational loss. It will also be used to maintain efficiency and prevent operational issues to other customers.	Proponent

6.14 Other environmental issues

This section addresses non-key issues associated with the Proposal.

Table 6-32: Other environmental issues SEARs

Issue	Existing environment	Assessment
Contamination and remediation	A preliminary site investigation was carried out in 2019 to support the Concept Design Approval. This report dismissed any risk of known or unexpected contamination onsite or locally. Since then, bulk earthworks have been carried, involving the removal of material and the import of clean fill. This further removes the risk of there being any contamination. There are no incidents or records of contaminant discharge onsite when carrying out the bulk earthworks.	There is no feasible potential to encounter legacy contamination onsite. There is however the potential for spills, leaks, incidents, or accidents to occur onsite, which could affect the ground and water conditions as assessed above in section 6.7.
European heritage	European heritage impacts were assessed as part of the Concept Design Approval. The nearest heritage record is a locally listed site about 300 metres to the northwest, Southridge (item I123). Figure 6-10 shows its location. The previous assessment also confirmed the following. *"The Site is not… within a Heritage Conservation Area or contains a heritage item…The Proposal would not be visible from [the nearest] heritage item [300 metres from the Site] and is physically separated by multiple industrial developments and the Old Wallgrove Road corridor."*.	The Concept Design Approval accounted for the potential construction of a data centre on the subject Site. Consistent with this assessment, the only heritage record locally is beyond the limit of the Proposal's impacts.
Bush Fire Risk	A desktop review[10] confirms the Proposal is not within bush fire prone land as shown below in Figure 6-11. The site is also cleared of vegetation.	There was no benefit or need to carry out a more detailed bushfire risk assessment given the Site's location and condition. However, there are potential combustion and fire sources onsite that could cause a fire that could spread to adjacent land. This risk has been mitigated through the measures described earlier in this Chapter.

[10] NSW Bush Fire Prone Land

Figure 6-10: Heritage item #I123 "Southridge"

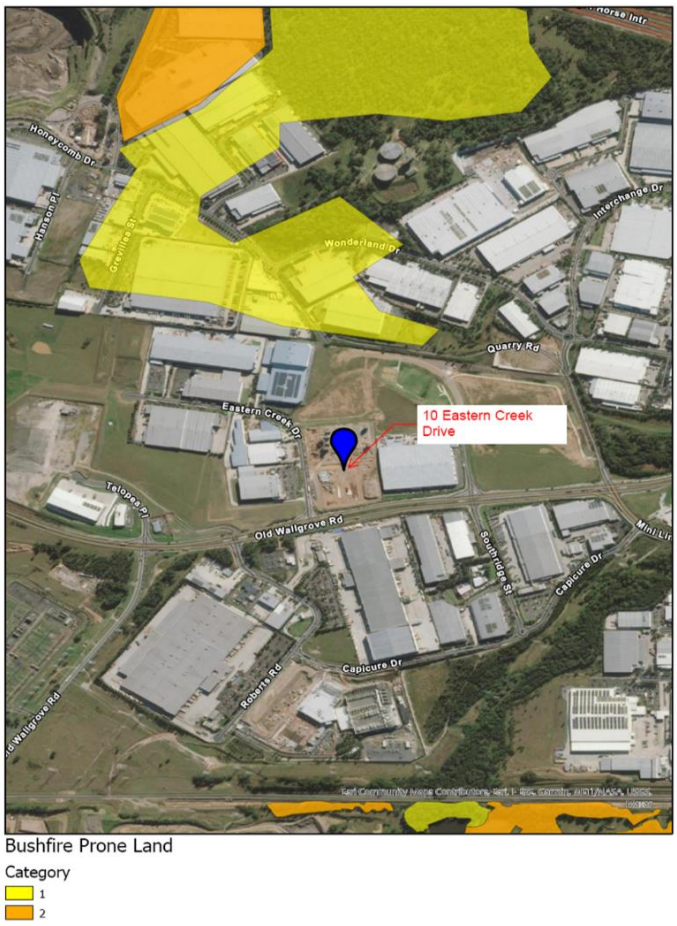

Figure 6-11: Bushfire prone land site map

6.14.1 Mitigation and management

Table 6-33 lists the proposed measures to mitigate and manage non-key impacts.

Table 6-33: Other mitigation and management

ID	Measure	Owner
Pre-construction/construction		
14A	A **European Heritage Unexpected Finds Protocol** will be developed and implemented. The Protocol will include measures to deal with any unanticipated archaeological deposits or skeletal remains found during construction. It will require works within 10 metres of the finds to stop immediately. It will also require the contractor to immediately notify the Proponent so they can assist in co-ordinating the next steps, which are likely to involve consultation with an archaeologist. Where required, further archaeological work and/or consents will be carried out and obtained before work restarts in this area.	Contractor
14B	A **Contaminated Land Unexpected Finds Procedure** will be prepared and implemented so that any potentially contaminated material can be appropriately managed. The Procedure will form part of the CEMP and it must ensure any identified potentially contaminated material will be disposed of in accordance with the *Protection of the Environment Operations Act 1994* and its associated Regulations. Details of the final disposal locations and the results of any associated testing will be recorded before its removal offsite.	Contractor

6.15 Cumulative impacts

This section assesses the cumulative impacts that could occur from the Proposal being built at the same time and in the same area as other projects. The assessment is based on the Cumulative Impact Assessment Guidelines for State Significant Projects (DPE, 2021).

6.15.1 Method

Cumulative impacts occur because of changes to the existing environment not considered in the other sections of the EIS. There are two types of cumulative impact:

- Incremental impacts, where there are different impacts on single values or receivers
- Combined impacts, where the existing environment will change in the future due to other projects.

Cumulative impacts can, only occur where there are shared project timeframes, only affect shared receivers or values, and only consider projects where there is sufficient detail on their predicted impacts. This defines the following assessment method. It involved:

- Defining the assessment timeframes and study area
- Defining the relevant projects to assess
- Identifying where receivers and values could be incrementally impacted by the Proposal
- Identifying where different combined impacts could occur on shared receivers and values in the area over specific timeframes
- Confirming the uncertainty associated with the assessment.

6.15.2 Assessment

The following section assesses the incremental and combined impacts.

6.15.3 Timeframes and study area

Section 3.3.3 describes how the Proposal would be built over about two years, starting in early 2023 subject to securing the required approvals, appointing a contractor, and confirming supplies and logistics. This defined the timeframes used in the cumulative assessment. Section 2.2 and section 2.3 describe the key receivers and values that would be potentially impacted by the Proposal. This defined the study area.

6.15.4 Relevant future projects

Concept Design Approval development | Potential cumulative impacts could arise from the concurrent development of the Proposal and the Concept Design Approval, specifically Building 1/1A. As noted in section 1.4, a substation would power the Site. This would be consented under a separate application that is being prepared. Section 1.3 shows the location of these other projects. In the case of timeframes, Building 1/1A would be largely built by the intended proposed construction start date in early 2023. The substation's construction start date is unknown, but it would need completing to coincide with the Proposal's operational start-date.

Other relevant future projects | The DPE major project website, Commonwealth EPBC referral list, Blacktown City Council's development application tracker, and major developments planned by public authorities in the aera were reviewed to identify relevant future projects (or changes) that are committed or approved, but not yet built. The following two projects a relevant to the cumulative assessment.

Table 6-34: Relevant future projects near the Site

Proposed development	Description	Status/approval authority	Proposal's overlap
Cleanaway Australia Pty Ltd at 1A Raffles Glade, Eastern Creek	Increase the capacity of an existing waste processing facility from 30,000 to 40,000 tonnes per year.	Approved on 17 February 2021 by the Sydney Central City Planning Panel (SPP-20-00005)	Located approximately one kilometre north of the Site.
Roberts Road Data Centre at 17 Roberts Road, Eastern Creek	Expansion to an existing data centre, including associated office space, supporting infrastructure and services, car parking and landscaping.	Approved on 14 July 2020 as a State Significant Development Application (SSD-10330)	Located approximately 500 metres south of the Site.

6.15.5 Incremental impacts

Table 6-35 below describes the incremental cumulative impacts that are predicted to occur.

Table 6-35: Incremental cumulative impacts

Receiver or value	Construction	Operation
Adjacent commercial and industrial properties	There would be additive impacts to these receivers during construction. Specifically, the workers at these locations would experience visual, noise, air quality (dust), and elements of social amenity (community) impacts over the two-year construction period. The scale of these additive impacts would be worse during the initial 18-months when Activity 1 to Activity 4 are being carried out. Despite this, providing the range of mitigation measures described in the EIS are implemented and effective, then all the corresponding assessments conclude that any significant adverse residual and incremental impacts would be avoided. Also, the effectiveness of the measures introduced to mitigate individual impacts would be no less effective in managing incremental impacts.	Once operational, the visual, social and noise amenity of these receivers maybe affected. As noted in the EIS, the planned inclusion of additional noise treatments would be sufficient to avoid any exceedance of amenity and health-based criteria. Also, the centre's visual appearance and design is being developed to reduce its visual, social, and cultural amenity impact. Therefore, any significant adverse residual and incremental impacts would be avoided. While the people working the area would still experience an incremental amenity-related impact from the introduction of the Proposal, this would be in the context and setting of an area where future industrial development is planned. Therefore, the Proposal would ultimately be congruous (fit in) with the wider changes taking place in the precinct. Finally, the effectiveness of the measures introduced to mitigate individual impacts would be no less effective in managing incremental impacts.
Surrounding suburbs in Eastern Creek	The only impact predicted to occur to the wider community would be the noise generated from installing the foundation piles. This would affect the amenity of the nearest residents in Horsley Park. As these areas are beyond the limit of the Proposal's other amenity impacts there would be no incremental impact.	Consistent with the construction phase, the only predicted operational impacts would occur from the noise generated onsite. As these areas are beyond the limit of the Proposal's other amenity impacts there would be no incremental impact.

6.15.6 Combined impacts

After reviewing the impact of the other relevant future projects, it was confirmed that while they would share timeframes with the Proposal, they would not impact on the same study area. Therefore, Table 6-36 below summarises where the supporting technical studies assessed the relevant combined impacts of the Concept Design Approval.

Table 6-36: Combined cumulative impacts

Issue	Building 1/1A	Substation
Visual impacts	● Yes	● Yes
Traffic, transport, and accessibility	● Yes – traffic	No
Air quality	● Yes	● Yes
Noise and vibration	● Yes	● Yes
Ground and water conditions	No	No
Stormwater, wastewater, and flooding	● Yes	● Yes
Hazards and risks	No	No
Waste management	No	No
Social impacts	● Yes – indirectly	● Yes – indirectly
Infrastructure requirements and utilities	● Yes	● Yes

Not all the technical studies assessed the combined impacts of the Concept Design Approval. This is because there is no potential for combined impacts relating to these issues. The traffic assessment did not assess the substation due to the associated low traffic volumes.

Visual impacts

Construction | Construction work has been carried out over the wider area under the Concept Design Application. This means the Proposal would not add to the overall amenity impact, but it would result in the amenity of the workers nearby being affected for longer than assessed in the EIS, a term called construction fatigue.

Operation | **Appendix X** appraised the combined visual impact of both data centres being built at the same time. This is because there would never be an outcome where only the Proposal would be built. This means the rated impacts presented in section 6.1 account for the combined effectiveness of the urban design, and landscape and planting schedules. The assessment also recognised the intended design consistency across both sites, in terms of their overall mass, scale, height, façades, and finishes.

Traffic, transport, and accessibility

Construction | There would be an additional 42 vehicles arriving and leaving for the short overlapping period both data centres would be under construction. This means 110 vehicles would arrive and leave site during the busiest peak periods over the 68 associated with the Proposal. Even with this level of added traffic, the site entrance, Old Wallgrove Road, and Eastern Creek Drive have the capacity to support these volumes without causing congestion or delay. This would avoid any cumulative impacts. While there are no data for the substation, the numbers would be low. Again, the surrounding roads and site entrance have sufficient capacity to deal with the likely total traffic volumes, plus the construction of Building 1/1A will be likely complete by the time the substation is built.

Operation | There is predicted to be 42 vehicles arriving and leaving Building 1/1A during the busiest peak periods. This would be in addition to the 54 vehicles associated with the Site. There is only likely to be occasional maintenance traffic associated with the substation. While this would increase the traffic movements into and out of the Site this level of anticipated combined traffic was accounted for in the Concept Design Application, meaning the site entrance (and security check area) have been designed to prevent traffic queuing on Eastern Creek Drive. This level of traffic would also have no material impact on other road users.

Air quality

Construction | The earthworks are complete on Building 1/1A. This means there would be no cumulative impact in combination with the Proposal. Earthworks would need to take place on the substation site; however, the total volume in combination with the Proposal would still be lower than the bulk earthworks that have already taken place. This means the total cumulative impact could be adequately managed across both sites using standard mitigation measures. While all development in the area would add to Sydney's air emission inventory, the combined effects would be insufficient to result in any amenity, pollution, or health-based impacts. This is because the nearest residents are over 1.5 kilometres away.

Operation | The air quality assessment considered the emissions from carrying out the scheduled testing of the back-up generators across both data centres and the scenario of the generators operating under during a mains outage. As both sites would be supplied from the same substation, they would experience an outage concurrently. The potential for this to happen would still be 0.05 percent each year. Under the cumulative scenario the associated amenity, pollution, and health-based criteria would still be met. **Appendix J** provides the detail.

Noise and vibration

Construction | There would be some overlap in construction when more activity would be taking place onsite. This would add to the general noise levels in the area. It would also increase the amount of time the amenity of the workers in the adjacent commercial and industrial properties would be potentially affected, leading to construction-fatigue. Noise impacts are typically caused by the nearest equipment, which dominates, and masks the effects of other equipment in the wider area. This means that there may be a small increase in noise at the adjacent properties from any overlapping construction activities, but this is unlikely to perceivably increase the scale of the noise impacts in section 6.5.

Operation | **Appendix H** notes that the Concept Design Approval did not account for the combined impact of both data centres operating onsite along with the substation. An addendum to the Acoustic report in **Appendix H** was prepared to refine the mitigation measures based on noise emissions predicted from Building 1, Building 1A that have been approved and are under construction.

The predicted results from this addendum show that the whole site criteria will be met.

Infrastructure requirements and utilities and stormwater, wastewater, and flooding

Appendix Q and **Appendix R** explain how the utility servicing strategy was developed to account for the Proposal and Concept Design Approval. While the assessment in section 6.8 and section 6.13 confirms that there is sufficient infrastructure and utility capacity to support the Proposal, it also factors in the Concept Design Approval. Appendix Q shows that the regional detention basin and site-wide stormwater infrastructure are sufficient to accommodate runoff from the Site and Concept Design Approval.

Social impacts

The social impact assessment reinforces the cumulative visual, noise, and air quality amenity impacts described above but confirms this would not affect the magnitude of any social impact. The assessment also recognises the wider social benefits to Sydney's data security by building two centres.

6.15.7 Uncertainty

There are the following uncertainties. The measures in section 6.15.8 would deal with these.

- The detailed design, and construction and operational specifics across all developments would be confirmed over the coming months. This means there is uncertainty around the timeframes described above in section 6.15.3, and around the scale and magnitude of some of the predicted impacts assessed in the previous sections.
- There is uncertainty around elements of the cumulative assessments carried out above. Key was the assumption to reduce the noise criteria rather than assessing the combined impacts, due to the lack of clarity around site-specific noise trigger levels (see section 6.1of **Appendix H**).
- The detailed assessment of the substation's impacts is not available. This means there is uncertainty in how this project would have a combined cumulative impact with Building 1/1A and the Proposal. As the

environmental assessment prepared for the substation will have access to the detailed assessments prepared for both data centres, and it would be the last development to be assessed, convention is that this assesses the combined cumulative assessment in detail.

Mitigation and management measures

Table 6-31 lists the proposed measures to mitigate and manage cumulative impacts

Table 6-37: Cumulative impact mitigation and management

ID	Measure	Owner
Detailed design		
15A	Once the detailed design of both data centres is finalised, the combined cumulative impacts will be reviewed to see if they affect the assessment presented in the EIS. Additional measures will be investigated and implemented if needed.	Proponent
Pre-construction/construction		
15B	Once construction schedules across both data centres and the substation are finalised, the cumulative impacts will be reviewed and verified. If there is an unexpected change, then additional assessment will be carried out and further measures will be investigated and implemented.	Contractor
15C	Work schedules and activities will be reviewed in consultation with Building 1/1A and the substation to avoid concurrent activities that will result in unnecessary additive impacts.	Contractor
Pre-operation/operation		
15D	Once operational schedules across both data centres and the substation are finalised, the cumulative impacts will be reviewed and verified. If there is an unexpected change, then additional assessment will be carried out and further measures will be investigated and implemented.	Proponent
15E	A cumulative noise assessment will be carried out once the operational detail of Building 1/1A and the substation is finalised. This will confirm if the identified noise treatment measures need to be increased, or if they can be relaxed. The assessment will also confirm if the scheduled or back-up generator load testing can be carried out at night.	Proponent
15F	Work schedules and activities will be reviewed in consultation with Building 1/1A and the substation to avoid concurrent activities that will result in unnecessary additive impacts.	Proponent

ARUP

EIS

Project Echidna

Chapter 7 | Proposal justification

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7. Proposal justification

This Chapter provides justification for the Proposal as a whole.

7.1 Justification

The Proponent is seeking consent to build a data centre in Eastern Creek. This would be one of two centres built on the corner of Eastern Creek Drive and Old Wallgrove Road. The Proposal responds to the heightened demand for data and cloud storage in Sydney. They underpin our move towards a digital economy as they allow access to enormous quantities of information anytime-anywhere, and they keep people connected to vital services. Their demand is recognised by the NSW Government (see section 2.5.4).

7.1.1 Selecting the preferred proposal

From a location perspective, the Site was considered the best alternative as it would be able to accommodate the intended platform and scale of development proposed, while benefitting from the co-location of two data centres next to one another. Accordingly, the Site's locality is considered satisfactory from a strategic standpoint, with the Proposal responding to the industrial character intended for the area.

Considering the above, the proposed Site specifically promotes industrial-related development of the type proposed. This is recognised through its industrial zoning and the wider initiatives set out under the Eastern Creek Precinct Plan (see section 2.5.6). the Site, configuration, and technology and power alternatives also help meet the Proposal's objectives as described below.

Table 7-1: Meeting the proposal objectives

Objective	Consideration
Support the ongoing demand for internet usage and data storage for customers, with a particular focus on customers located in Western Sydney	The Proposal (in combination with the adjacent data centre) would provide the needed storage capacity across Western Sydney to meet future demand, while helping transition to a digital economy. This demand is underpinned in various strategic policies that support the Proposal (see section 7.12).
Deliver economic benefits and employment generation for the area	The Proposal would promote innovation, stimulate investment, and benefit the economy through elevating productivity within the region. It would therefore deliver wider economic and employment benefit regionally, by helping support commerce and industry, and essential services such as hospitals, schools, energy and utility providers, banking, and transport.
Construct and operate the Proposal in a sensitive and responsible manner, including in relation to the environment and the health and safety of all staff and surrounding locality.	The impact assessment confirms that the Proposal could be delivered without resulting in any unacceptable residual or cumulative impacts, as summarised below. This is supported by selecting a site strategically zoned for industrial use. It reflects its reduced environmental sensitivity and suitability to support a data centre. Specifically, the location would not result in any apparent unjustified or unmanageable environmental or social impacts, and the assessment confirms that these can be adequately managed using measures that are proven to effectively mitigate. This means the Proposal could be delivered in a 'sensitive and responsible manner' that protects the environment and the health, safety, and welfare of construction staff, employees, people working nearby, and communities surrounding the Site. There are a series of key measures that would be investigated over the coming months to verify and validate the impacts and investigate and implement measures if there are unexpected or unanticipated outcomes (see section 7.1.7 and section 7.1.8). This is supplemented by an ongoing commitment to publicly consult and engage, while allowing Traditional Custodians to help influence the final design to improve its Connection with Country. This will help deliver the Proposal in a socially and culturally sensitive manner.

7.1.2 Strategic support

As noted above, the Proposal helps support a transition to a digital economy. It is strategically supported through the following policies:

- The *Greater Sydney Region Plan* promotes the use of vacant land to generate income and provide critical infrastructure to support the growing demand for data storage.
- The *Central City District Plan* aims to attract innovation into industrial lands. Its Planning Priorities promote the need for digital technology to support a knowledge-intensive economy.
- The *Blacktown Local Strategic Planning Statement* recognises the need for high-end technology jobs in the area and wider initiatives to promote employment diversity and economic development, things that the Proposal would help deliver.

7.1.3 Statutory compliance

The Proposal classifies as SSD by virtue of its power consumption. In addition to the primary consent issued by either the Minister or IPC, it is unlikely to need any supporting permits or licences, outside of general certifications that apply to all development in NSW.

The activities taking place onsite do not present a significant pollution risk or involve complex waste management issues. This is because they do not trigger the threshold criteria that require an environmental protection licence under the *Protection of the Environment Operations Act 1997*. Also, while there are inherent dangers with the materials used onsite, they are below levels that would classify the Site as a potentially hazardous industry under the Resilience and Hazards SEPP.

The Minister and IPC must review a series of core mandatory considerations under the *Environmental Planning and Assessment Act 1979* when determining the development application. Table 7-2 summarises how the Proposal complies with these.

Table 7-2: Statutory compliance

Matter	Summary
Any environmental planning instrument	Section 4.6 demonstrates how the Proposal can be built on industrially zoned land (IN1) with consent from the Minister or IPC, with the proposal classifying as SSD. This means it is both permissible and has a defined planning approval pathway, without any need for rezoning.
Any development control plan	Chapter 4 demonstrates how the Proposal is consistent with the planning provisions and development controls that apply to the Site and area. It also references the technical appendices where the details are fully considered.
Any planning agreement	Section 1.4.1 confirms that the Proposal is not restricted by any existing covenants. This is because the Proponent owns the Site, and the previous development applications and consents addressed existing land use issues and constraints. There are no voluntary or negotiated agreements needed to support the Proposal. This is because the required public infrastructure and utility provisions have already been installed under the Concept Design Approval.
The Regulations	**Appendix C** demonstrates how the EIS has been prepared in the form prescribed by section 190 of the Regulation. **Appendix A** demonstrates compliance with the industry specific assessment requirements for data storage centres (DPE, 2022) as required under section 191 of the Regulation. The content of the EIS has been prepared in accordance with section 192 of the Regulation, along with the State Significant Development Guidelines – Preparing an Environmental Impact Statement (DPE, 2021). Section 7.1.5 below shows how the Proposal is consistent with the principles of ecologically sustainable development (ESD) as defined under section 193 of the Regulation.
The likely impacts of the development, including environmental impacts on both the natural and built environment, and social and economic impacts on the locality	Chapter 6 and **Appendix F** to **Appendix X** have identified the Proposal's likely environmental, social, and economic impacts on the locality. Section 7.1.4 below summarises this.

Matter	Summary
The suitability of the Site for the development	Section 7.1 above explains why the Site is suitable for development.
Any submissions made in accordance with the EP&A Act or Regulations	This will be covered in the Response to Submissions Report (see section 1.1).
The public interest.	Chapter 2 explains why there is a strategic need for the Proposal and why there is a public interest captured under regional, district, and local policy, as summarised above in section 7.1.
The objects of the Act	The objects are guiding principles that are considered by DPE, when making planning decisions. They provide a framework to help assess if the Proposal is consistent with the Act's wider provisions. Chapter 4 demonstrates consistency with the relevant objects.

7.1.4 Likely development impacts

The following section summarises the scale and nature of the environmental, social, economic, and cumulative impacts and benefits that would occur once the proposed mitigation is introduced.

Environmental (construction) | The construction work is typical. It would involve a standard set of activities taking place onsite. While they present various inherent water, noise, and air pollution risks, there are recognised standard measures that are tested and proven to mitigate effectively. Providing they are implemented and effective, water and ground quality would be preserved. The same is true of erosion and sedimentation risk, which can be managed under defined controls.

There are no biodiversity values onsite, following the bulk earthworks carried out under the Concept Design Approval. the Site is also not flood prone.

More broadly, there is the ability to effectively manage stormwater and wastewater discharges during construction, while managing waste, and the various small amounts of hazardous materials used onsite without introducing a pollution risk.

Environmental (operation) | The impact assessment confirms that the noise and air emissions generated from Site can be effectively managed and abated to avoid a pollution risk. The proposed stormwater infrastructure comprises gross pollutant traps and regulating the discharge offsite via a regional detention basin. These controls are assessed as being sufficient to achieve the water quality targets set locally. While the Site includes both battery and diesel storage, both of which present a fire and pollution hazard, they could be effectively managed and contained to avoid any onsite or offsite pollution or fire risk. A waste management plan would be used to avoid any associated pollution risks. Licenced and skilled contractors would be used to manage waste activities onsite and refuelling of the diesel generators, again to avoid environmental impacts.

While there is also an inherent risk of equipment failure, an intended aim of the routine service and maintenance schedule described in section 3.2, is to avoid any failures and the centre going offline. This level of servicing and maintenance is typically higher than most industrial facilities, meaning it would reduce the associated environmental hazards and risks.

Social (construction) | The people working in the area would experience a temporary increase in noise, the potential generation of dust and other site-based emissions, and a loss of amenity through general construction work and activity in the area. These impacts would occur for periods over about 18-months. They would be insufficient to affect people's health and wellbeing or way of life. Critically, the Site's location over 1.5 kilometres from the nearest suburbs would avoid any wider community and accessibility impacts, while the roads and entrance have been designed to cope with the volumes of site-generated traffic. There is also no First Nation or European heritage record locally.

The Proposal would employ around 100 people from a range of skills that could be serviced from the local community due to the high proportion of machinery operators, technicians, and labourers in the area. There is also opportunity to use materials that can be supplied locally, including from First Nations-owned businesses.

Social (operation) | At a wider societal level, the Proposal would provide increased data security and reliability for people who live, work, and visit Sydney. Cloud data also supports how people move around Sydney, therefore providing an indirect benefit. Locally, the Proposal provides increased and diverse employment opportunities. It has been designed to include sufficient onsite parking for the people who would work and visit Site. This would prevent any loss of on-street parking, even though there are no restrictions or pressures locally given the Site's location. This would be complemented by the provision of six bicycle parking spots and end of trip facilities, with associated measures and incentives to promote walking, cycling, and catching public transport to and from work. The design also promotes safety and security for staff through, installing security cameras and lighting, and a controlled site access.

The Proposal has been designed to be consistent with the adjacent data centre. Further, the final detailed design will continue to be developed to improve its Connection with Country and overall aesthetic within its setting. This should ensure the Proposal is congruous (fits in) with the surrounding landscape and amenity, consistent with the intended appearance of the wider precinct.

The one limitation of a data centre is its high power and water consumption. Table 7-3 discusses the commitment to secure a green energy tariff and use rainwater harvesting to reduce the impact of this. However, this would still have a wider societal impact as the need to use non-renewable fossil fuels in the back-up generators (see section 3.2.2) does not align with regional sustainability values.

Economic | The Proposal and Site offer the following economic benefits.

- The data centre would provide various positive social and economic benefits in helping support the growth and development of Western Sydney. the Site is also strategically placed between key urban areas, which would help bolster their data resilience.
- The Proposal offers the ability to locate two data centres next to one another. This means they can share common infrastructure. This would reduce the need to replicate investment, which in turn would reduce the overall amount of material and resources needed to build the Proposal.
- the Site is near major transport links including roads, cycleways, and public transport routes. This would make it easier for people to travel to the data centre via alternative modes. This presents a favourable social outcome as it offers the ability for a wider demographic to work onsite
- The Proposal would offer longer-term employment-generating opportunities as construction staff can switch to working on the Proposal once the first data centre is built.
- As noted in Table 7-1, the Proposal would promote innovation, stimulate investment, and benefit the economy through elevating productivity within the region. It would therefore deliver wider economic and employment benefits.

Cumulative (incremental) | Section 6.15.5 confirms that while there would be some overlap in the construction of the Proposal and the Concept Design Application, providing the range of mitigation measures described in the EIS are implemented and effective, then any significant adverse residual and incremental impacts would be avoided. The assessment also confirms that the effectiveness of the measures introduced to mitigate individual impacts would be no less effective in managing incremental impacts. Once operational, while the people working in the area would still experience an incremental amenity-related impact from the introduction of the Proposal, this would be in the context and setting of an area where future industrial development is planned. Therefore, the Proposal would ultimately be congruous (fit in) with the wider changes taking place in the precinct. Finally, the communities in the surrounding suburbs in Eastern Creek are beyond the limit of the Proposal's incremental impact.

Cumulative (combined) | After reviewing the impact of the other relevant future projects in the area, it was confirmed that while they would share timeframes with the Proposal, they would not impact on the same study area. However, there is the potential for workers in the area to experienced cumulative combined amenity impacts from the overlapping construction and operation of the Proposal and Concept Design Approval. This would lead to potential construction fatigue due to workers being impacted for longer than assessed in the EIS. While the additive impact of the above development would generate more noise, air emissions, stormwater, wastewater, and traffic collectively, the impact of all these was assessed. This confirmed that the combined impacts could be adequately mitigated to meet amenity, pollution, and health-based criteria. The assessment also confirmed that the infrastructure and utilities have been designed to support the combined demand and impact of the Proposal and Concept Design Application. The proposed

landscaping, planting and urban design strategies recognise the intended design consistency across both sites, in terms of their overall mass, scale, height, façades, and finishes, and the Site's industrial setting and context. Chapter 4 also confirms how the Proposal has been designed to achieve the wider landscape and urban design development controls set under the Eastern Creek Precinct Plan. The Concept Design Approval was also subject to the same development controls, meaning that the visual impact of both developments would be consistent and congruous with the design intent of the surrounding precinct.

7.1.5 Ecologically sustainable development

The following section describes how the Proposal promotes the four ecological sustainable development (ESD) principles defined under section 192 of the EP&A Regulation. This is supplemented by the sustainable design initiatives included in section 6.3.

The *precautionary principle* is that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

The EIS has been prepared based on the concept of what would be built onsite and a broad understanding of how it would be built. While there is a degree of certainty in the Proposal, there are elements that would only be confirmed during detailed design or once a construction contractor is onboard. This is typical of most developments and something the NSW Government recognises in its State Significant Development Guidelines (DPE, 2021). This means the impact assessment, assessment of alternatives, design and mitigation has adopted the following precautionary measures to avoid serious and reversible environmental damage and degradation:

- *Assessing a worst-case* | The impact assessment has assessed a worst case. Notably, this includes the low-potential to use the back-up generators in an emergency, and the scheduled load-testing which would occur for short periods each week. The proposed mitigation is based on the impact of a reasonable worst-case.
- *Validating and verifying uncertainty* | The mitigation commits to further investigate impacts during detailed design to validate mitigation. This includes additional testing and monitoring to check that the EIS' impact predictions are valid. The mitigation also commits to investigating and implementing additional controls if the outcomes are unexpected.
- *Applying mitigation by precaution* | Various measures have been used to mitigate impacts even if there is not the scientific justification for it. The noise treatment measures are defined against a precautionary lower noise limit (see section 6.15) applied to the Site, due to the uncertainty about the cumulative impact.
- *Revisiting the design* | There is a commitment to review the final detailed design and construction and operational specifics to confirm the extent, duration, scale, and magnitude of impacts. If these change the effectiveness of the mitigation, additional assessment will be carried out to investigate and implement measures to reduce impacts to acceptable levels. Also, if the changes are material, it may require the consent to be modified before construction starts.

The *principle of inter-generational equity* is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

While there is a need for cheap and reliable access to data across society, in justifying the Proposal, the EIS has developed the following measures to help maintain natural, social, and cultural capital and equity inter-generationally:

- *Natural capital* | As noted below, the proposed landscape and planting strategy (see **Appendix S**) has been developed within the context of the Cumberland Plain, and its characteristic woodland, which albeit at small scale, will help provide some ecosystem services over time. This would improve the area's natural capital into the future and therefore inter-generationally.
- *Social capital* | The centre's operational life would span two or three generations. This means it would provide data security inter-generationally. It also helps deliver wider economic and employment benefit regionally into the future, supporting a transition to high-end technology jobs and the digital economy, factors that are proven to improve social capital.

- *Cultural capital* | There has been a recognised loss in Connection with Country over the area for the past two hundred years owing to European occupation. Section 5.4.2 describes the feedback from the Traditional Custodians around this subject. In response, consultation with the Traditional Custodians, and specifically the Elders, will be ongoing. They will inform the Proposal's detailed design and delivery, and the ongoing operation of the Site to improve its Connection with Country. Wider initiatives include First Nation employment and business use. These collectively help promote cultural capital inter-generationally.

The principle *of the conservation of biological diversity and ecological integrity* is that both should be a fundamental consideration.

This principle appreciates the total value and function of an ecosystem rather than specific threatened species impacts. The progressive aim is to create a net gain in biological diversity and ecological integrity. This in turn helps improve the area's natural capital because it can introduce ecosystem services.

The proposed landscape strategy (see **Appendix S**) includes measures to promote the use of native species and planting patterns that complement and enhance the area's characteristic Cumberland Plain Woodland. The Plan includes the use of species that are energy and water efficient, and provisions to promote passive cooling. While small scale, this will help deliver the following ecosystem services:

- *Provisioning services* | The landscape and planting strategy will help with passive cooling onsite, while the use of natives will help promote wider pollination amongst species characteristic of the Cumberland Plain.
- *Regulating services* | The proposed green space around the Site will help regulate overland flows and runoff. While negligible, the vegetation would provide some carbon-capture and sequestration, improving the air quality.
- *Cultural services* | Given the commitment for Traditional Custodians to inform the landscape and planting strategy, this will help the Proposal Connect with Country, in providing an educational, aesthetic, and stewardship role.
- *Supporting services* | At a local level, the landscape and planting would help attract wildlife, promoting biodiversity and photosynthesis.

The principle *of improved valuation, pricing and incentive mechanisms* is that environmental factors should be included in the valuation of assets and services, such as the polluter pays, accounting for the full lifecycle costs of goods and services, including natural resource use and waste disposal, and establishing environmental goals.

Table 7-3 summarises how the Proposal's full lifecycle costs and total economic impacts would be evaluated.

Table 7-3: Improved valuation and pricing of environmental resources

Valuation and pricing principle	Comment
Best available technology	
Where there is the need to use feasible controls to avoid or minimise impacts that are both reasonably available and economically viable locally.	Section 1.9 describes the Proponent's long history of building similar infrastructure globally, and its development of standardised equipment schedules and design specifications that offer credible environmental and sustainable performance. **Appendix O** details these measures which have been supplemented by a series of sustainable design commitments described in section 6.3. This means a global specification set by the Proponent of low-emission technologies would be used. This will be complemented by operational performance specifications that require the equipment to be routinely monitored, tested, and serviced. While this is carried out to ensure a continuity of power supply to the Site, it is also used to make sure the equipment operates within manufacturer performance specifications. This optimal performance requirement means it would minimise the emissions from the Site. **Appendix R** and **Appendix V** describe this in more detail.

Valuation and pricing principle	Comment
Lifecycle cost principles	
Where total up and downstream environmental, ecological, and social impacts are accounted for.	A key element for the Proposal is promoting low embodied carbon materials that are durable to reduce the Proposal's lifecycle impact; especially when considering total maintenance costs. This is consistent with the circular economy principles (see section 6.3). Another element of the Proposal is developing a long-term legacy that helps improve cultural awareness, education, and Connection with Country.
Polluter pays principles	
Where there is the need to remain liable for any pollution and environmental damage over a development's life.	As noted above, the Proponent has a long history of building similar infrastructure globally. It is aware of the costs and responsibility of achieving regulatory performance and a social licence and striving for sustainable development. The EIS describes the equipment schedules, design specifications, and wider mitigation measures that will be implemented over the Proposal's life. The cost of these measures has been included in the Proposal's construction and operational estimates to ensure the Proponent makes the required level of investment to avoid any unacceptable environmental damage or pollution. **Appendix E** describes the provisions to avoid and minimise pollution. These measures are routinely introduced to manage impacts as they are proven to be effective. They would be controlled and monitored under the CEMP and OEMP. This means the potential for causing actual harm or damage over the Proposal's life would be managed to an acceptably low level. Regardless, the appointed contractor and operator would be responsible for any pollution or environmental damage in line with their obligations under the *Protection of the Environment Operations Act 1997*.
Best practical environmental option	
Where there is the need to provide the most benefit for the least environmental, social, and cultural impact at an acceptable cost in both the short and long-term.	Section 2 describes how site, configuration, technology, and power alternatives were considered to help identify the preferred Proposal. Collectively, the selected site and layout, along with the technology configurations promote socioeconomic resilience across Sydney by keeping the Site online yet offer a solution whose environmental impacts can be adequately mitigated, as confirmed through the detailed impact assessment summarised in Chapter 6. the Site also offers the space and context to provide an effective landscape and urban design response, along with various sustainable design components such as rainwater harvesting as described in Chapter 1. While there would be proposal-related impacts, these can either be avoided or mitigated to acceptable levels. Where there is still some uncertainty about impacts, the proposal to manage and audit the environmental performance onsite (see section 7.1.8) means that the overall outcome provides the best-balanced practical option environmentally. It does this by providing a solution to deliver long-term social and cultural benefits while effectively mitigating the Proposal's impacts for current and future generations.
Environmental goals	
Where measures are established and implemented to maximise benefits and minimise associated environmental, economic, cultural and/or societal costs.	A key Proposal objective is to deliver low-cost data for the public and industry. This means the benefits of building the data centre outweigh the Proposal's impacts for current and future generations. This was tested in the Proposal's business case, which demonstrated that the wider social benefits identified in Chapter 2 are of value and can be mitigated to acceptable levels that achieve the required limits, standards, and criteria (i.e., environmental goals) around hazardous activities, noise and air pollution, health-based, visual, and social impacts, and soil and water quality. This is supplemented through various design controls to treat the Site's noise and air emissions and improve the quality of the stormwater discharge, which have been factored into the build costs (see above).
Natural capital accounting principles	
Where the dependency and impact on nature is accounted for to help reach decisions on the use or sustainable consumption of natural resources and land.	As noted above, a key limitation of a data centre is its high power and water consumption. Options were considered as to the best power supply configuration, concluding that power-supply certainty would come from two mains from the grid. Therefore, the decision was taken to select a green energy tariff to help improve the Proposal's use of renewable resources, which have a higher natural capital value. Despite the above providing a high level of redundancy, it would not offer a fail-safe solution. This means the only feasible alternative would be to install back-up diesel generators. The need to schedule and test these generators would consume under 400,000

Valuation and pricing principle	Comment
	litres of fuel every six months. This is the Proposal's biggest ongoing dependency on natural capital. Its other demand is the need for cooling water. Unlike the diesel, a water-balance can be achieved across the Site (see section 6.8) using both rainwater and potable water. Sydney Water has confirmed it can meet the Site's demand, with the wastewater returning to the sewer. This means there would be no net loss in water to the wider system. Outside of the fuel and water consumption, section 6.3.2 includes various sustainable design initiatives to reduce water, energy, and material use (all forms of natural capital). These are supplemented by initiatives to reduce waste, promote the circular economy, and reduce the levels of embodied carbon. These have been included, and accounted for, in the Proposal's costs, to reduce the impact on natural resources and land.

7.1.6 Contributions and benefit

The Section 94 Contributions Plan No.18 – Eastern Creek Stage 3 (currently section 7.11 Contributions) applies to the land in the Blacktown City Council LGA, which is one of the areas nominated under the Industry and Employment SEPP. Section 1.9 of the Plan shows that the Proposal is located within the Eastern Creek Stage 3 contributions catchment.

Section 7.11 contributions were discussed with Blacktown City Council as part of the Concept Design Approval. No contributions were requested. In addition, the Proposal is consistent with the aims and objectives of the Industry and Employment SEPP, as well as the Eastern Creek Precinct Plan as discussed in Section 2.6.5 of this EIS. In accordance with the above, the Proposal would promote economic growth and employment opportunities to benefit the area, meaning it remains in the public interest.

There are currently no planning agreements associated with the Proposal. Development contributions are a discretionary matter by the consent authority. Therefore, any requirements for them could be determined and calculated during the assessment stage. If required, the Proponent would confirm the value and timing of any contributions payable at the time. In addition, the Proponent has made no political donations or gifts.

7.1.7 Uncertainty

The following uncertainties remain:

- The EIS has been prepared based on the concept of what would be built onsite and a broad understanding of how it would be built. While there is a degree of certainty in the Proposal, there are elements that would only be confirmed during detailed design or once a construction contractor is onboard. This is typical of most developments and something the NSW Government recognises in its State Significant Development Guidelines (DPE, 2021).
- There is uncertainty around elements of the impact assessment. This has been addressed by adopting the precautionary principle and assessing a worst case.
- Table 3-5 describes those elements of the Proposal where design flexibility has been included to overcome uncertainty and how this has been accounted for in the EIS. This includes:
  - Confirming that the final form and finish of the data centre is consistent with the Government Architect's Better Placed Guidelines, and other requirements set by the State Government and Council.
  - Committing to ensure the final landscape planting schedules are consistent with the Eastern Creek Precinct Plan.
  - Confirming the intent to schedule night-time operational testing during the detailed design, as it is contingent on other factors, and assessing the impact. If this confirms that the noise criteria could be adequately achieved.
  - Confirming the final design, and construction and operational requirements impacts are consistent with those presented in the EIS and revising or supplementing the mitigation as needed.
  - Confirming the need to deliver over-sized equipment at night during the detailed design, which would depend on final specifications and delivery schedules. It would also follow consultation with Transport for NSW, Council, and NSW Police.

- Committing to reviewing the combined cumulative impact of the Proposal and Concept Design Approval once the details are finalised. If this results in an unexpected outcome, then committing to investigating and implementing additional mitigation measures.
- Committing to carrying out additional cumulative noise assessment once operational details are finalised. This will confirm if the identified noise treatment measures are sufficient.

7.1.8 Monitoring and communication

Table 7-4 lists the measures that would be carried out to monitor compliance. The table also lists the plans and studies used to monitor performance (shown in red).

Table 7-4: Monitoring, management, and communication

Context	Purpose
1B | Urban Design and Landscape Management Plan.	Including monitoring and managing the effectiveness of the landscaped or rehabilitated areas.
2B | Construction Pedestrian and Traffic Management Plan	Including a program to monitor the effectiveness of the pedestrian and construction traffic measures.
3A | Ecological sustainable development	Including measures to monitor and manage water and energy use.
5A | Dust and Air Quality Management Plan	Including monitoring the success of the measures introduced to prevent dust generation and propagation.
6E | *precautionary principle* | Biosecurity Management Plan	Including monitoring the success of the controls to dispose of high threat and declared priority weeds and manage pests and pathogens.
5E | Back-up Generator Incident Report	Preparing a report within 30-days to confirm and demonstrate the air quality goals were not exceeded after using the back-up generators in an emergency.
6A | Construction Noise and Vibration Management Plan	Defining the circumstances when monitoring is needed to confirm compliance with noise management levels set under the Interim Construction Noise Guidelines (DECC, 2009).
6E | *precautionary principle* | If there is an unexpected requirement to work outside of the standard hours.	Committing that work undertaken outside of standard hours will be managed and monitored in accordance with the Interim Construction Noise Guidelines (DECC, 2009).
6E | *precautionary principle* | If safe working distances cannot be achieved to avoid potential vibration impacts.	Introducing additional mitigation measures, such as vibration monitoring to comply with amenity (human comfort) and cosmetic building damage limits.
6K | Noise Compliance Verification Report	Including attended noise compliance monitoring three months before the Site's full operation to validate the noise impacts.
6N | If a noise compliant is received.	Confirming where additional noise monitoring is needed to investigate a valid complaint.
7B | Construction Soil and Water Management Plan	Including monitoring the success of the erosion and sediment control measures.
7C | Construction Erosion and Sediment Control Plan	Including monitoring potential high-risk events (such as storms) and the effectiveness of specific controls and follow-up measures.
7F | Emergency Spill Plan	Including monitoring the availability, adoption, and awareness in the use of adequate emergency and spill control measures.
8B | To maintain site-safety and environmental protection in adverse weather	Involving the daily monitoring of the weather reports to allow the Site to be safely managed.
9A | Fire Safety Study	Confirming the final fire and life safety measures used to protect the back-up generators and batteries.
10A | Waste Management Plan	Including a process for auditing, monitoring, and reporting on the waste volumes and diversion and resource recovery targets.

Context	Purpose
12A | Communication Plan	Preparing, implementing, and monitoring measures to provide timely and accurate information to the community and the means to receive and handle complaints.
11D | *precautionary principle* | A First Nation Unexpected Finds Protocol	Monitoring for unexpected archaeological items and objects, stopping work, and taking corrective actions to avoid impacts.
12I | Complaints Register	Maintaining and monitoring the implementation of a complaints register to ensure corrective action is taken and effective.
13A | Infrastructure Delivery, Management and Staging Plan	Finalising the infrastructure staging strategy to confirm if the Site's final utility demand can be supported, and confirming maintenance, testing, and servicing requirements and responsibilities.
13G | Construction Delivery and Staging Plan	Finalising the construction delivery plan and setting out the expected utility demand. Also including any unusual or atypical requirements when carrying out high-demand activities and the contingency measures to deal with this.
14A | *precautionary principle* | A European Heritage Unexpected Finds Protocol	Monitoring for unexpected archaeological items and taking corrective actions to avoid impacts.
14B | *precautionary principle* | A Contaminated Land Unexpected Finds Protocol	Monitoring for unexpected contamination and taking corrective actions to avoid impacts.

7.2 Conclusion

This EIS has been prepared in the form prescribed by section 190 of the EP&A Regulation. It complies with the industry specific assessment requirements for data storage centres (DPE, 2022), and the content of the EIS has been prepared in accordance with section 192 of the Regulation, along with the State Significant Development Guidelines – Preparing an Environmental Impact Statement (DPE, 2021).

Potential impacts have been avoided or minimised in designing the Proposal and preparing the environmental assessment. The section above shows how the preferred Proposal meets its objectives, and is supported under regional, district, and local policy. However, there would still be some temporary and permanent impacts. Measures detailed in this EIS would mitigate or minimise these to an acceptable level, with additional commitments made to manage, monitor, and communicate performance and investigate and revisions if there are unexpected outcomes. Any residual impacts are considered acceptable on balance with the Proposal's benefits, it remains in the public interest for current and future generations.

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EIS

Project Echidna

Chapter 8: Evaluation and Conclusions

Reference: SSD - 47320208

Revision 1 | October 2022

Job number 288255-02

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8. Evaluation and conclusions

8.1 Evaluation

This EIS has been prepared to support the proposed data centre at 10 Eastern Creek Drive, Eastern Creek NSW. The Proposal comprises the construction and operation of a new 35.2 MW data centre as described in Chapter 3.

This EIS has been prepared in accordance with the EP&A Act to address the relevant provisions of Schedule 2 of the EP&A Regulation 2000 and Section 190 of the updated EP&A Regulation 2021. It also responds to both the industry specific SEARs (No. SSD-47320208) for data storage centres issued by DPE on 17/08/22, as well as the State Significant Development Guidelines – Preparing an Environmental Impact Statement (DPE, 2021).

As outlined in Chapters 6 and 7 of the EIS:

- The potential environmental impacts of the Proposal have been identified and thoroughly assessed as part of the EIS and supporting documentation. The assessment concluded that the Proposal will not result in any unjustified or unmanageable impacts on the surrounding community, or flora and fauna. It is considered that any potential impacts can be satisfactorily mitigated through a range of measures that have been identified within the EIS.
- Further, other environmental issues which although raised in the SEARs (No. SSD-47320208), are not considered to be impacted as a result of the Proposal. These include flooding risk, contamination and remediation, non-Aboriginal heritage and bushfire risk.
- There are positive social and economic outcomes associated with the Proposal, which include the provision of a high-quality data centre which is critical to support the region, more specifically the nearby growing residential population and major industry cluster characterised by establishing land use and transport structures. The Proposal will promote innovation, provide ongoing employment opportunities to the WSEA whilst benefitting the economy through elevating productivity within the region.
- The Site is considered suitable for the proposed data centre. The Proposal will utilise vacant land to provide essential technological infrastructure to support the ongoing demand on data storage. The Site is also well-situated regarding access to existing metropolitan infrastructure.

8.2 Conclusion

The Proposal is identified as SSD by virtue of meeting thresholds defined under Schedule 1, Clause 25 of the Planning Systems SEPP. Specifically, the Proposal is appropriately classified as a data storage development with a capacity of more than 10 MW as outlined above.

Further, no unreasonable impacts on or as a result of the Proposal are anticipated regarding air quality, visual impact, traffic and transport, noise and vibration, heritage (Aboriginal and non-Aboriginal), waste generation, hazards and risk or stormwater management as demonstrated within this EIS. A series of mitigation measures have been developed and summarised throughout the EIS and **Appendix E**.

Based on the above and the justification provided in this EIS, it is concluded that the Proposal is in the public interest and approval is recommended.

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Chapter 9: References

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