

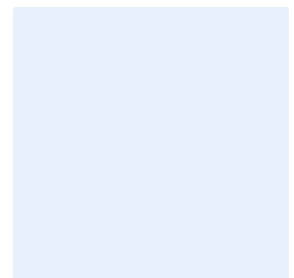
Kemps Creek Data Centre

Operational Environmental Management Plan

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Glossary

Abbreviation	Meaning
AEP	Annual Exceedance Probability
BC Regulation	Biodiversity Conservation Regulation 2017
CEOM	Critical Environment Operation Manager
CO ₂	Carbon Dioxide
CoC	Minister's Conditions of Consent
COPC	Contaminants of Potential Concern
CETM	Critical Environment Technician Manager
DCOM	Datacentre Operations Manager
DPHI	NSW Department of Planning, Housing and Infrastructure
DTM	Datacentre Technician Manager
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	NSW Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPL	Environmental Protection Licence
GPT	Gross Pollutant Trap
NDMP	Nitrogen Dioxide Monitoring Procedure
NO ₂	Nitrogen Dioxide
NSW	New South Wales
OEMP	Operational Environmental Management Plan
OCHP	Operational Complaints Handling Protocol
PIRMP	Pollution Incident Response Management Plan
PMF	Probable Maximum Flood
POEO Act	Protection of the Environment Operations Act 1997
PONP	Power Outage Notification Protocol
SO ₂	Sulfur Dioxide
SSD	State Significant Development
TfNSW	Transport for NSW
the Project	The proposed construction and operational use of a Data Centre, at 707-769 Mamre Road, Kemps Creek (Lots X & Y DP 421633 and Lot 22 DP 258414)

1 Introduction

1.1 Background and description

The landowner and the proponent has developed a project to construct and operate a datacentre including two data storage buildings, 61 generators, substation, high voltage switch yard, 30 diesel storage tanks, office, internal access roads and landscaping. The project is known as the 'Kemps Creek Data Centre' and comprises three main development stages known as SYD05, SYD06 and SYD07 constructed at 707-769 Mamre Road, Kemps Creek (Lots X & Y DP 421633 and Lot 22 DP 258414) (the project'). This Operational Environmental Management Plan (OEMP) has been prepared to address the operations of Stage 1 (SYD05) and Stage 2 (SYD06). In accordance with Condition A11, this OEMP will be amended to include Stage 3, SYD07 following construction and planned operation.

An Environmental Impact Statement (EIS) was submitted to the former New South Wales (NSW) Department of Planning, Industry and Environment (DPIE), now the Department of Planning, Housing and Infrastructure (DPHI), in support of a State Significant Development (SSD) Application (SSD 10101987), for the project. Development Consent under this Project was sought for the construction and operational use of a Data Centre operating 24 hours per day, 7 days per week.

The Kemps Creek Data Centre is being delivered in 3 Stages:

- Stage 1 – development of SYD05 building, including construction of:
 - SYD05 building shell and façade and fitout
 - High Voltage Power Yard
 - All external works including: internal site roads, western main carpark, generators to support building, site grading and plinths foundations to support western tanks.
- Stage 2 – development of SYD06 building, including construction of:
 - SYD06 building shell and façade and fitout
 - External works to support the SYD06 building shell.
- Stage 3 – development of SYD07 building, including construction of:
 - SYD07 building shell and façade and fitout
 - External works to support the SYD07 building shell.

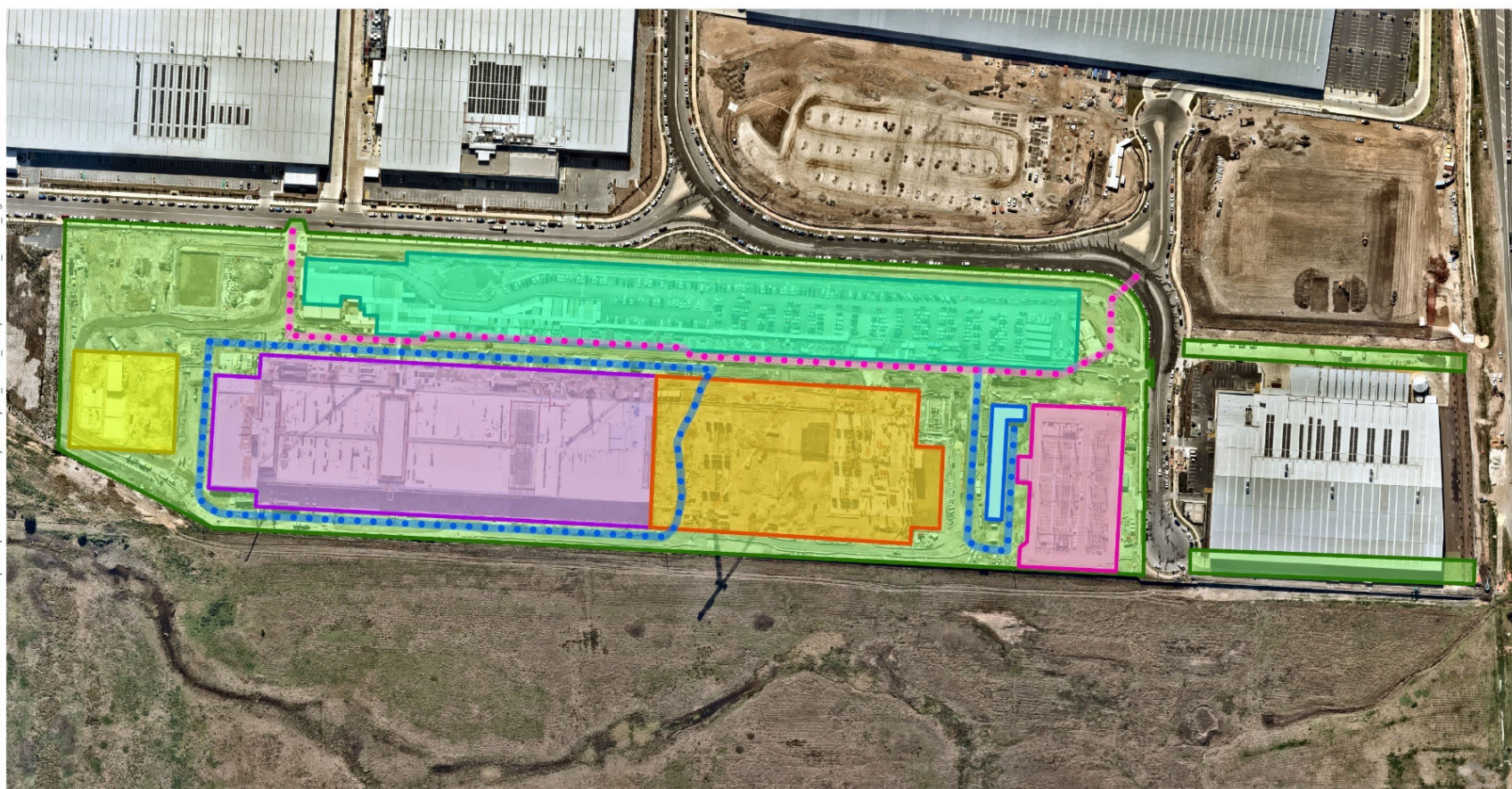
The layout and location of these stages is located in **Figure 1-1**.

The Kemps Creek Data Centre will be operated by the landowner.

The operation of the data centre would require mechanical cooling and power systems (including emergency backup power generators) along with the necessary telecommunications links required for the site to carry out an efficient and effective operation.

The data centre once fully operational provides employment for 79 operational phase workers. Primary access to the site is via the estate road off Bakers Lane. The site includes 120 car parking spaces (including six accessible spaces) and 23 bicycle parking spaces.

C:\Users\Jade Stevens\OneDrive - Aurecon Group\Geospatial - E&P\VAI\Projects\Projects - without_sharp\p1523817_SYD05_Figures\Pro 1 Site Location



Author: Jade Stevens | Date: 18/10/2024

Stage 1 - SYD05

- Temporary Road Path during Construction
- Two Coat Spray Seal with Compacted Road Base
- Pavement, Hard and Soft Landscaping Construction, Security Fence to Boundary

- HV Yard
- MV Switch Room
- Main Carpark
- Building 1

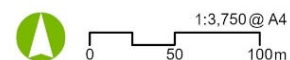
Stage 2 - SYD06

- Building 2
- Building 3

Stage 3 - SYD07



Data Sources: Aurecon, Nearmap



Projection: GDA2020 MGA Zone 56

Kemps Creek Data Centre Construction Compliance

Figure: Kemps Creek Data Centre Staging

Figure 1-1 Kemps Creek Data Centre Staging

1.2 Purpose of OEMP

This Operational Environmental Management Plan (OEMP) describes how the proponent intends to comply with their legislative requirements and compliance obligations such as the Conditions of Consent (granted on 13 July 2023), during the operational phase of the project.

This OEMP is applicable to all staff and subcontractors associated with the operation of Stage 1, SYD05 and Stage 2, SYD06.

The OEMP will be made available on the Kemps Creek Data Centre website after approval has been granted by the Planning Secretary in accordance with Condition of Consent (CoC) C22.

1.3 Environmental management objectives

The following performance objectives have been set by the proponent in accordance with statutory obligations and community expectations for the management and operation of the site:

- No regulatory infringements
- Minimise impacts to sensitive receivers and ensure actions are taken to address any complaints
- Identify and manage risks to, and impacts on the environment from our operations
- Keep the local community and relevant agencies informed about the operation and environmental performance of the development

2 Regulatory requirements and compliance

2.1 Legislative framework

Key NSW state environmental legislation relevant to the operation of the project is outlined in Table 2-1.

Table 2-1 Relevant Legislation

Context	Legislation	Approval Requirement
Commonwealth	<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	The Project does not warrant referral to the Commonwealth Minister for Environment. Additionally, the investigations undertaken for SSD 9522 confirmed that there were no MNES identified, which require concurrence with the Commonwealth.
NSW	<i>Environmental Planning and Assessment Act 1979</i>	The EP&A Act, 1979 is the overarching governing statute for all development in NSW and pursuant to Part 4, Section 4.36(2), the Project is considered State Significant Development, for which the SSD Application would be submitted to and determined by the NSW DPIE. The Project is deemed to be entirely consistent with the EP&A Act, 1979.
NSW	<i>Environmental Planning and Assessment Regulation 2000</i>	In accordance with EP&A Regulation 2000, the Project is not classified as Designated Development.
NSW	<i>Protection of the Environment Operations Act 1997</i>	Under the Schedule 1, Clause 9(1) – Petroleum Products Storage of the POEO Act, diesel fuel storage is listed as a Scheduled Activity. Capacity to store greater than 2,000 tonnes requires an Environmental Protection Licence (EPL) from the NSW Environment Protection Authority (EPA). With respect to the operational phase of the Project, provisions are made for 1,650 tonnes of diesel fuel storage for which an EPL would not be required as part of the operation of the Project.
NSW	<i>Biodiversity Conservation Act 2016</i>	The Biodiversity Conservation Act 2016 (BC Act, 2016) is the key legislation in NSW relating to the protection and management of biodiversity and threatened species. The purpose of the BC Act 2016 is to “maintain a healthy, productive and resilient environment, for the greatest wellbeing of the community, now and into the future, consistent with the principles of ecologically sustainable development”. The BC Act 2016 is supported by a number of regulations, including the Biodiversity Conservation Regulation 2017 (BC Regulation 2017). Vegetation removal will occur in accordance with the conditions of consent. No vegetation removal is proposed as part of the operational phase of the project.
NSW	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>	Proposed Developments that are listed in Schedule 1 of SEPP (SRD) 2011 are identified as being State Significant Development. Schedule 1, Clause 25 of SEPP (SRD) 2011 includes provisions for developments comprising Data Centres to be undertaken as SSD. The Project is in relation to the development of a Data Centre. The Project will have a total power consumption of more than 10 MW (190 MW total load), thus satisfying the SSD provisions, for which they can be applied to the Proposal. A development consent was approved, no further approval is required.

Context	Legislation	Approval Requirement
NSW	<i>State Environmental Planning Policy (Infrastructure) 2007</i>	The Subject Site attains an area greater than 20,000 m ² . Therefore, any such future development would require referral to the NSW RMS (now Transport for NSW (TfNSW)).
NSW	<i>State Environmental Planning Policy No 19 – Bushland in Urban Areas</i>	The Project contains land zoned or reserved for public open space purposes (RE1 Public Recreation); however, the portion of the Project is designated for employment-generating development (IN1 General Industrial). Therefore, the provisions of State Environmental Planning Policy No 19 – Bushland in Urban Areas (SEPP 19), are not relevant to the Project.
NSW	<i>State Environmental Planning Policy No 33 – Hazardous and Offensive Development</i>	Since no thresholds for dangerous goods stored on-site are exceeded, the development is not considered to be potentially hazardous and SEPP 33 does not apply in terms of storage.
NSW	<i>State Environmental Planning Policy No 55 – Remediation of Land</i>	Remediation is not required during the operational phase of the Project therefore SEPP 33 does not apply.
NSW	<i>State Environmental Planning Policy (Western Sydney Employment Area) 2009</i>	SEPP (WSEA) 2009 was formulated in 2009 specifically to promote employment outcomes in the broader Western Sydney Region in proximity to where people live. The Proposed Development is highly consistent with the aims of SEPP (WSEA) 2009, in that it would strongly promote economic development and employment opportunities, exactly as per the aims of the SEPP. Employment and Investment results anticipated for the Site, would be consistent with both short and long-term outcomes for the Penrith LGA and the broader Western Sydney Region.
NSW	<i>State Environmental Planning Policy (Western Sydney Aerotropolis) 2020</i>	State Environmental Planning Policy (Western Sydney Aerotropolis) 2020 (WSA SEPP) applies to land within the Western Sydney Aerotropolis. There are no works occurring in the operational phase of the Project within this location.

2.2 Compliance requirements

Mandatory compliance requirements relevant to the project during the operational phase are detailed within this section.

All personnel associated with the project will comply with all relevant requirements including:

- all legislation and regulations as described under Section 2.1
- the CoCs relevant to this Plan, applicable Sub-Plans and Project documentation Table 2-2.

Table 2-2 Operational conditions of consent

CoC No.	Requirement	OEMP Reference	How Addressed												
A1	In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	Section 0	A summary of all management actions and mitigation measures is located here.												
A6	The Applicant must ensure: (a) operation of the back-up generators (including testing) does not exceed 200 hours per year; and (b) the diesel fuel storage capacity of the site does not exceed 2,000 tonnes at any one time. Note: For the purposes of condition A6, calculation of how many hours the back-up generators are tested, as a collective, should be based on the hours (in real time) that testing is in fact undertaken at the site per year. For example, five generators being tested concurrently over the course of an hour would count as on hour towards the threshold stipulated by condition A6, rather than five hours	Section 6.8.3	A management action has been implemented to ensure back-up generators do not exceed 200hours per year and that diesel fuel storage capacity does not exceed 2,000 tonnes.												
A19	All plant and equipment used on site, or to monitor the performance of the development, must be: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Section 6.8.3	A management action has been implemented to achieve this.												
B6	The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in Table 2. <table border="1"> <thead> <tr> <th>Location</th><th>Day LAeq(15 minute)</th><th>Evening LAeq(15 minute)</th><th>Night LAeq(15 minute)</th></tr> </thead> <tbody> <tr> <td>Residential receivers near Medinah Avenue (Luddenham)</td><td>37</td><td>32</td><td>28</td></tr> <tr> <td>Residences within the MRP</td><td>48</td><td>40</td><td>38</td></tr> </tbody> </table>	Location	Day LAeq(15 minute)	Evening LAeq(15 minute)	Night LAeq(15 minute)	Residential receivers near Medinah Avenue (Luddenham)	37	32	28	Residences within the MRP	48	40	38	Section 6.6.3	This will be achieved through noise monitoring during operation of the Project and the results will be published in the Operational noise verification report.
Location	Day LAeq(15 minute)	Evening LAeq(15 minute)	Night LAeq(15 minute)												
Residential receivers near Medinah Avenue (Luddenham)	37	32	28												
Residences within the MRP	48	40	38												
B7	The Applicant must ensure the operation of plant and equipment does not generate intermittent noise at receiver locations identified in Table 2 in accordance with Fact Sheet C of the NSW Noise Policy for Industry (EPA, 2017).	Section 6.6.3	This will be achieved through noise monitoring during operation of the Project and the results will be published in the												

CoC No.	Requirement	OEMP Reference	How Addressed
			Operational noise verification report.
B8	Within three months of the commencement of earthworks for the development, the Applicant must prepare and submit a Design Noise Verification Report for the development to the satisfaction of the Planning Secretary. The Applicant must not commence construction of any data centre building until the Design Noise Verification Report is approved by the Planning Secretary. The Design Noise Verification Report must: (a) be prepared by a suitably qualified, experienced and independent acoustic consultant; (b) identify and justify the design noise emission scenario, including the adopted engineering safety factor, schedule of all noise generating sources on the site, stationary equipment specification and verifiable data of dynamic noise emission activities; (c) demonstrate the noise propagation modelling is capable of accurately predicting noise levels under noise enhancing meteorological conditions to surrounding receivers in Luddenham; (d) provide updated noise modelling to verify the predicted performance of the development and the predicted noise levels identified in the report titled Kemps Creek Data Centre, Noise and Vibration Impact Assessment, prepared by Arup Pty Ltd, dated 1 September 2022; (e) develop an Operational Noise Monitoring Plan in accordance with Section 7 of the Noise Policy for Industry to verify the operational performance of the development, including details of the nominated intermediate monitoring locations, reference noise levels at each intermediate location, and noise level relationship between each intermediate location and sensitive receivers identified in condition B6; (f) include: (i) an analysis of compliance with noise limits specified in conditions B6; (ii) an outline of at-source and transmission path mitigation measures required to ensure compliance with the limits specified in conditions B6; (iii) a description of contingency measures (including specific measures to manage noise generating activities during the night time period) in the event management actions are not effective at reducing noise levels to comply with limits specified in conditions B6.	Section 6.6.3	The Design Noise Verification Report includes the Operational Noise Monitoring Plan described as the Operational Noise Management Plan.
B11	Within three months of the commencement of operation of the development, the Applicant must prepare and submit an Operational Noise Verification Report for the development to the satisfaction of the Planning Secretary. The Operational Noise Verification Report must: (a) be prepared by a suitably qualified, experienced and independent acoustic consultant whose appointment has been endorsed by the Planning Secretary;	Section 5.2	A Noise Verification Report will be produced

CoC No.	Requirement	OEMP Reference	How Addressed
	(b) demonstrate that noise verification has been carried out in accordance with: i. the Australian Standard AS 1055:2018 Acoustics – Description and measurement of environmental noise (Standards Australia, 2018); and ii. the EPA Approved Methods for the Measurement and Analysis of Environmental Noise in NSW (EPA, 2022); iii. the Operational Noise Monitoring Plan established under condition B8(e); (c) include: i. an analysis of compliance with noise limits specified in conditions B6; ii. an outline of implemented at-source and transmission pathway mitigation measures and their effectiveness at reducing operational noise; and iii. a description of contingency measures in the event implemented mitigation measures are not effective at reducing noise levels to comply with limits specified in condition B6 at all times.		
B12	Prior to the commencement of construction of the development, the Applicant must prepare a Driver Code of Conduct and induction training for the development to minimise road traffic noise. The Applicant must update the Driver Code of Conduct and induction training for construction and operation and must implement the Code of Conduct for the life of the development.	Appendix A	A Driver Code of Conduct has been prepared
B16	The Applicant must install and operate equipment in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the Protection of the Environment Operations (Clean Air) Regulation 2021 (as may be updated or replaced from time to time).	Section 6.7.3	A management action has been implemented to ensure that equipment is operated in line with best practice.
B17	The Applicant must ensure the design, installation and operation of the back-up generators and/or the associated enclosures do not preclude the ability for additional air pollution emission controls to be retrofitted.	Section 6.8.3	A management action has been implemented to ensure generators and enclosures allow air pollution controls to be retrofitted.
B18	Prior to the commencement of operation of the development, the Applicant must prepare a Nitrogen Dioxide Monitoring Procedure (NDMP) to the satisfaction of the Planning Secretary. The NDMP must:	Section 6.7.3	This is addressed within the Nitrogen Dioxide

CoC No.	Requirement	OEMP Reference	How Addressed
	(a) be prepared by a suitably qualified and experienced person(s); (b) identify the contemporary impact assessment criteria for nitrogen dioxide emissions; (c) describe the control measures which would be implemented to minimise the duration of each power outage event; (d) outline the monitoring procedure which would be implemented during each power outage event, in accordance with the most recent version of the Approved Methods for the sampling and analysis of air pollutants in NSW (EPA, 2022); and (e) described the management actions which would be taken to address any exceedances of the impact assessment criteria identified in condition B18(b).		Monitoring Procedure, a standalone document.
B19	The Applicant must: (a) not commence operation until the NDMP (see condition B18) is approved by the Planning Secretary; and (b) implement the most recent version of the NDMP approved by the Planning Secretary for the duration of the development.	Section 6.7.3	This is addressed within the Nitrogen Dioxide Monitoring Procedure, a standalone document.
B20	Prior to the commencement of operation, the Applicant must prepare a Power Outage Notification Protocol (PONP) for the development. The PONP must: (a) identify the neighbouring properties which would be notified should a power outage event last 30 minutes or more; (b) identify the trigger point(s) for notifying neighbouring properties that the back-up generator system is operating; and (c) detail how these properties would be made aware that the development's back-up generator system is required to operate for the duration of the power outage event.	Section 6.7.3	This is addressed within the Power Outage Notification Protocol, a standalone document.
B21	The Applicant must: (a) not commence operation until the PONP (see condition B20) is submitted to the Planning Secretary; and (b) implement the most recent version of the PONP submitted to the Planning Secretary during power outage events which last 30 minutes or more.	Section 6.7.3	This is addressed within the Power Outage Notification Protocol, a standalone document.
B22	The Applicant must design and operate the development in accordance with: (a) AS/ NZS 4681:2000 The storage and handling of Class 9 (miscellaneous) dangerous goods and articles (Standards Australia, 2000);	Section 6.8.3	Management actions have been implemented to ensure operation

CoC No.	Requirement	OEMP Reference	How Addressed
	(b) IEC 62619:2022 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications (Standards Australia, 2023); and (c) AS 1940:2017 The storage and handling of flammable and combustible liquids (Standards Australia, 2017). In the event of an inconsistency between the standards listed above, the most stringent requirement shall prevail to the extent of the inconsistency.		occurs in accordance with the standards listed.
B31	The Applicant must ensure: (a) that vehicle access from the east of the site onto the north-south road is restricted to emergency vehicle use only; (b) internal roads, driveways and parking (including grades, turn paths, sight distance requirements, aisle widths, aisle lengths and parking bay dimensions) associated with the development are constructed and maintained in accordance with the latest version of AS 2890.1:2004 Parking facilities Off-street car parking (Standards Australia, 2004), AS 2890.2:2018 Parking facilities Off-street Commercial Vehicle Facilities (Standards Australia, 2018) and AS 2890.6:2009 Parking facilities Off-street parking for people with disabilities (Standards Australia, 2009) (c) the swept path of the longest vehicle entering and exiting the site, as well as manoeuvrability through the site, is in accordance with the relevant AUSTROADS guidelines; (d) the development does not result in any vehicles queuing on the public road network; (e) heavy vehicles and bins associated with the development are not parked on local roads or footpaths in the vicinity of the site; (f) all vehicles are wholly contained on site before being required to stop; (g) all loading and unloading of materials is carried out on-site; (h) all trucks entering or leaving the site with loads have their loads covered and do not track dirt onto the public road network; and (i) the proposed turning areas in the car park are kept clear of any obstacles, including parked cars, at all times.	Appendix A	A Driver Code of Conduct has been developed to manage traffic and transport.
B32	Prior to the commencement of operation of any part of the development, the Applicant must prepare a Work Place Travel Plan and submit a copy to the Planning Secretary. The Work Place Travel Plan must: (a) be prepared in consultation with TfNSW; (b) outline facilities and measures to promote public transport usage, such as car share schemes and employee incentives; and	Section 0	Consultation requirements have been provided for the Work Place Travel Plan.

CoC No.	Requirement	OEMP Reference	How Addressed
	(c) describe pedestrian and bicycle linkages and end of trip facilities available on-site.		
B33	The Applicant must implement the most recent version of the Work Place Travel Plan for the duration of the development.	Section 6.4.3	A management action has been implemented to ensure the Work Place Travel Plan occurs for the duration of the development.
B38	Prior to the commencement of operation, the Applicant must install the stormwater management system in accordance with the finalised detailed design (as required by condition B38) and ensure the system is operational.	Section 6.3.3	A management action has been implemented to ensure the stormwater system is in accordance with the finalised detailed design.
B41	Prior to the commencement of operation, the Applicant must prepare an Operational Flood Emergency Response Plan to the satisfaction of the Planning Secretary. The Plan must form part of the OEMP required by conditions C5 and must: (a) address the relevant requirements outlined under condition B39; and (b) include details of: i. the flood emergency responses procedures to be implemented during operation; ii. updated assembly points, refuge areas and evacuation routes; iii. flood warning signs and depth indicators; iv. refuge and evacuation protocols for all employees, contractors and visitors; and v. awareness training for operational employees and any relevant persons associated with the development.	Appendix B	A Flood Emergency Response has been prepared to meet this requirement.
B42	The Applicant must: (a) not commence operation until the Operational Flood Emergency Response Plan required by condition B41 is approved by the Planning Secretary; and (b) implement the most recent version of the Operational Flood Emergency Response Plan approved by the Planning Secretary for the duration of the development.	Appendix B	A Flood Emergency Response has been prepared to meet this requirement.

CoC No.	Requirement	OEMP Reference	How Addressed
B43	Prior to the commencement of operation of the development, the Applicant must prepare a Water Management Plan to the satisfaction of the Planning Secretary. The Water Management Plan must form part of the OEMP required by condition C5 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) detail water use, metering, disposal and management on-site; (c) the management of wastewater streams on-site including the operation of the wastewater treatment plant (WWTP); (d) contingency measures to be implemented if the WWTP is out of operation i. contain a Contaminated Water Retention Plan including: ii. description of secondary containment including bunding; iii. protocols for the operation of the pollution control valve during pollution incidents; iv. disposal locations which are licenced to accept the contaminated water; v. stormwater impact assessment criteria, including trigger levels for investigating and potential adverse surface water impacts; vi. a protocol for the investigation and mitigation of identified exceedances of the stormwater impact assessment criteria; and vii. contain a Pollution Incident Response Management Plan.	Appendix D	A Water Management Plan has been prepared to meet this requirement. (c) There is no wastewater treatment plant applicable to this project
B44	The Applicant must: (a) not commence operation until the Water Management Plan required by condition B43 is approved by the Planning Secretary; and (b) implement the most recent version of the Water Management Plan approved by the Planning Secretary for the duration of the development.	Appendix D	This plan has been provided as an appendix to this OEMP.
B48	All waste materials removed from the site must only be directed to a waste management facility or premises lawfully permitted to accept the materials.	Section 6.5.3	A management action has been implemented to ensure the waste management facility is lawfully permitted to accept the waste.

CoC No.	Requirement	OEMP Reference	How Addressed
B49	The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014) and dispose of all wastes to a waste management facility or premises lawfully permitted to accept the waste.	Section 6.5.3	A management action has been implemented to ensure waste is classified appropriately.
B50	Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal.	Section 6.5.3	A management action has been implemented to ensure that waste is not received at the site.
B51	The Applicant must retain all sampling and waste classification data for the life of the development in accordance with the requirements of EPA.	Section 6.5.3	A management plan has been implemented to ensure sampling and waste classification data is retained for the life of the development.
B52	The Applicant must: (a) implement suitable measures to manage pests, vermin and declared priority weeds on the site; and (b) inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or priority weeds are not present on site in sufficient numbers to pose an environmental hazard or cause the loss of amenity in the surrounding area.	Section 8.1	A list of inspections that will be undertaken during the operational phase of the project has been provided.
B57	Prior to the commencement of operation of the development, the Applicant must prepare a Landscape Management Plan to manage the revegetation and landscaping works on-site, to the satisfaction of the Planning Secretary. The plan must form part of an OEMP in accordance with condition C5. The plan must: (a) detail the species to be planted on-site; (b) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and (c) be consistent with the Applicant's Management and Mitigation Measures outlined in Appendix 2.	Appendix C	This plan has been provided as an appendix to this OEMP.
B58	The Applicant must: (a) not commence operation until the Landscape Management Plan is approved by the Planning Secretary.	Appendix C	This plan has been provided as an appendix to this OEMP.

CoC No.	Requirement	OEMP Reference	How Addressed
	(b) must implement the most recent version of the Landscape Management Plan approved by the Planning Secretary; and (c) maintain the landscaping and vegetation on the site in accordance with the approved Landscape Management Plan required by condition B57 for the life of the development.		
C5	The Applicant must prepare an Operational Environmental Management Plan (OEMP) for the development in accordance with the requirements of condition C1 and to the satisfaction of the Planning Secretary.	This plan	This plan has been produced as a requirement of this condition.
C6	As part of the OEMP required under condition C5 of this consent, the Applicant must include the following: (a) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; (b) describe the procedures that would be implemented to: i. keep the local community and relevant agencies informed about the operation and environmental performance of the development; ii. receive, handle, respond to, and record complaints; iii. resolve any disputes that may arise; iv. respond to any non-compliance; v. respond to emergencies; and (c) include the following environmental management plans: i. Flood Emergency Response (see condition B41); ii. Water Management Plan (see condition B43); and iii. Landscape Management Plan (see condition B57).	a) Section 3.1 b) Section 4 c) i) Appendix B c) ii) Appendix D c) iii) Appendix C	a) Section 3.1 outlines roles and responsibilities. b) Section 5.1 outlines the operational complaints handling protocol - Section 7 outlines environmental incidents c) Appendix B – Flood Emergency Response Plan - Appendix D – Water Management Plan - Appendix C – Landscape Management Plan
C7	The Applicant must: (a) not commence operation until the OEMP is approved by the Planning Secretary; and	Section 5	This section outlines OEMP approval, review and updates.

CoC No.	Requirement	OEMP Reference	How Addressed
	(b) operate the development in accordance with the OEMP approved by the Planning Secretary (and as revised and approved by the Planning Secretary from time to time).		
C8	Prior to the commencement of operation, the Applicant must prepare an Operational Complaints Handling Protocol (OCHP) for the development. The OCHP must: (a) detail how complaints would be received by the Applicant; (b) detail how the contact details for receiving complaints would be communicated to surrounding businesses and/or residential receivers; and (c) include a complaints register to record the date, time and nature of the complaint, details of the complainant and any actions taken to address the complaint (d) be submitted to the Planning Secretary upon request. Note: Methods for receiving complaints could include, but are not limited to, email, a toll-free telephone number and/or a postal address. Methods for communicating contact details could include, but are not limited to, on-site signage and/or an advertisement published in a local paper	Section 5.1	Operational Complaints Handling Protocol
C9	The Applicant must: (a) not commence operation until the OCHP under condition C8 is submitted to the Planning Secretary; and (b) implement the most recent version of the OCHP submitted to the Planning Secretary for the duration of the development.	Section 5.1	Operational Complaints Handling Protocol
C13	Within 30 days of the back-up generator system being used to power the development during a power outage event (or as otherwise agreed to in writing by the Planning Secretary), the Applicant must prepare and submit a Back-up Generator Incident Report for the development to the satisfaction of the Planning Secretary. The report must include: (a) details regarding the: i. date and time of the power outage event; ii. total number of back-up generators used to power the development; iii. total number of hours the back-up generators were operated for; iv. total quantity of diesel fuel used by the back-up generators; and v. total amount of electricity produced by the back-up generators;	Section 6.7.3	A management action has been implemented outlining the requirement for a Back-up Generator Incident Report.

CoC No.	Requirement	OEMP Reference	How Addressed
	(b) if relevant, confirmation regarding whether neighbouring properties were made aware that the development's back-up generator system was operating (see condition B20); (c) an assessment of any air quality impacts resulting from the operation of the back-up generators; (d) an assessment and consideration of any additional measures which could be implemented to reduce future air quality impacts.		
C14	The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.	Section 7.2	Non-compliances are outlined in this section.
C15	A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	Section 7.2	Non-compliances are outlined in this section.
C16	A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 7.2	Non-compliances are outlined in this section.
C17	Within three months after the first year of commencement of operation of the development, and in the same month each subsequent year (or such other timing as agreed by the Planning Secretary), the Applicant must submit a Compliance Report to the Planning Secretary reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. Compliance Reports must be prepared in accordance with the Compliance Reporting Post Approval Requirements (Department 2020) and must also: (a) identify any trends in the monitoring data over the life of the development; (b) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (c) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Section 8.3	Compliance reporting is outlined in this section.
C18	The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least seven days before this is done.	Section 8.3	Compliance reporting is outlined in this section.
C19	Within one year of the commencement of operation of the development, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit (Audit) of the development. Audits must: (a) be prepared in accordance with the Independent Audit Post Approval Requirements (Department 2020)	Section 8.3	Auditing requirements are outlined in this section.

CoC No.	Requirement	OEMP Reference	How Addressed
	(b) be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; and (c) be submitted to the satisfaction of the Planning Secretary within three months of commissioning the Audit (or within another timeframe agreed by the Planning Secretary).		
C20	In accordance with the specific requirements in the Independent Audit Post Approval Requirements (Department 2020), the Applicant must: (a) review and respond to each Independent Audit Report prepared under condition C19 of this consent; (b) submit the response to the Planning Secretary and any other NSW agency that requests it, together with a timetable for the implementation of the recommendations; (c) implement the recommendations to the satisfaction of the Planning Secretary; and (d) make each Independent Audit Report and response to it publicly available no later than 60 days after submission to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done.	Section 8.3	Auditing requirements are outlined in this section.
C21	Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification, compliance reporting and independent auditing.	Section 4 and Section 8.3	Section 4 outlines incident notification, reporting and response as well as non-compliance notification. Section 8.3 outlines compliance and auditing requirements.
C22	At least 48 hours before the commencement of construction of the development and for the life of the development, the Applicant must: (a) make the following information and documents (as they are obtained or approved) publicly available on its website: i. the documents referred to in condition A2 of this consent; ii. all current statutory approvals for the development; iii. all approved strategies, plans and programs required under the conditions of this consent; iv. the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged;	Section 1.2	This OEMP will be made available on the Project website after it is approved by the Planning Secretary.

CoC No.	Requirement	OEMP Reference	How Addressed
	v. regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; vi. a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; vii. a summary of the current stage and progress of the development; viii. contact details to enquire about the development or to make a complaint; ix. a complaints register, updated monthly; x. the Compliance Report of the development; xi. any other matter required by the Planning Secretary; and (b) keep such information up to date, to the satisfaction of the Planning Secretary.		

3 Organisational structure, resources and responsibilities

3.1 Roles and responsibilities

The key roles and responsibilities of proponent are outlined in Table 3-1.

Table 3-1 Key Roles and responsibilities

Key Role	Roles and responsibilities relevant to this plan
Datacentre operations manager (DCOM)	- Responsible for checking requirements environmental risk assessment. - Responsible for providing guidance to staff, in house vendors, such as facility and security management teams and external maintenance vendors regarding environmental requirements. - Responsible for providing staff and contractors with a copy of this OEMP. - Responsible for enforcing controls of OEMP when on-site. - Responsible for reporting incidents and near misses to EHS Site Manager and Regional Environmental Compliance PM. - Responsible for ensuring that compliance task related to the OEMP are implemented. - Ensure all staff undertake the necessary environmental training - The DCOM or delegate will notify staff of an incident as appropriate, in accordance with the severity and status of the incident. - Responsible to report incidents and non-compliances to external authorities
Critical Environment Operation Manager (CEOM)	- Oversees all aspects of the critical environment (generators, air handling units (AHU), fire system etc) functions. - Responsible for ensuring that the critical environment team conforms to the requirements of this OEMP. - Responsible for checking that requirements are considered and included in the critical environment team standard operating procedures (SOPs).
Datacentre technician manager (DCTM)	- Responsible for ensuring that this OEMP is communicated to IT Infrastructure Junior Technicians. - Responsible for overseeing the implementation of the OEMP controls applicable to the activities of the team. - Responsible for informing EHS Site Manager of any non-conformance with this OEMP. - Responsible for investigating non-conformances and implementing corrective actions

Key Role	Roles and responsibilities relevant to this plan
Critical environment technician manager (CETM) and Engineers	▪ Responsible for ensuring that this OEMP is communicated to CE junior technicians and engineers. ▪ Responsible for overseeing the implementation of the OEMP controls applicable to the activities of the team. ▪ Responsible for informing EHS Site Manager of any non-conformance with this OEMP. ▪ Responsible for investigating non-conformances and implementing corrective actions
Environment, health and safety site manager	▪ Responsible for supporting an action plan with timeframes is developed for a non-compliance ▪ Responsible for supporting the incident reporting process ▪ Responsible for conducting on-site training
Regional environmental compliance project manager	▪ Responsible for recording non-compliances in Enablon (cloud-based software) ▪ Responsible for ensuring that an action plan with timeframes is developed for a non-compliance ▪ Responsible for monitoring and validating corrective actions to close out non-compliances ▪ Supports operation with external communication of environmental incidents and non-compliances.
All other workers	▪ Responsible for conforming with OEMP requirements and all relevant control measures. ▪ Responsible for informing the Site Manager of any non-conformance with OEMP. ▪ Responsible for investigating non-conformances and implementing corrective actions.
All vendors	▪ Responsible for implementing control measures associated with activities. ▪ Responsible for informing the Site Manager of any issues or non-conformances. ▪ Responsible for investigating non-conformances and implementing corrective actions. ▪ For any subcontracted works, the lead contractor is responsible for checking all permits, licences, approvals, and other notifications associated with the drivers operating plant or equipment

4 Training and awareness

To ensure that this OEMP is effectively implemented, each level of management is responsible for ensuring that personnel reporting to them are aware of the requirements of this OEMP.

4.1 Site specific induction

All personnel (including subcontractors) are required to attend a compulsory site induction that includes an environmental component prior to commencement of works on site. This is done to make all personnel involved in the Project aware of the requirements of the OEMP, the CoA and the REMMs. The DCOM (or delegate) will prepare the environmental component of the site inductions with support from the Environment, Health and Safety team. Short-term and temporary visitors to site will also be required to undertake this induction. Temporary visitors to site, for purposes such as deliveries, will be required to be accompanied by inducted personnel at all times.

The environmental component of the induction will cover applicable elements of the OEMP and will include as a minimum:

- Conditions of environmental licences, permits and approvals,
- Specific environmental management requirements and responsibilities,
- Mitigation measures for the control of environmental issues,
- Potential environmental emergencies on site (evacuation) and the emergency response procedures,
- Reporting and notification requirements for pollution and other environmental incidents,
- On-site training is in accordance with sustainability goals, this includes waste/water/electricity
- Any other key environmental issues.

4.2 Environment, health and safety fortnightly meetings

A fortnightly meeting to raise awareness of environmental, health and safety issues. These regular meetings will ensure environmental awareness occurs throughout operation.

Meeting minutes will be recorded and distributed to all personnel via email for awareness.

4.3 Environmental compliance training (Enablon Training)

Enablon is a cloud-based software used as an environmental compliance obligation register used to create tasks for the operational team to comply with regulatory, permits and other internal obligations. All of the requirements in this OEMP will be listed in the register as tasks and notification will be sent to the site teams for actions to be implemented.

4.4 Driver Code of Conduct

This conduct is to be provided to all delivery drivers, it outlines measures to minimise road and traffic noise.

5 Communication and stakeholder engagement

The proponent will consult (where required) and submit the required reporting and protocols required under the consent. This will initiate the required consultation and communication with the relevant agencies of the proponent's operating procedures.

Table 5-1 summarises the requirements under conditions of consent for liaison with government Public Authorities and relevant stakeholders during operation.

Table 5-1 Summary of the required consultation, approval and notification matrix

Key item	CoC	Timing	Consultation with TfNSW	Approval by the Planning Secretary	Notification/ Submission to the Planning Secretary
Notification of Commencement of Operation	A8	One month prior to commencement			Pending
Operational Noise Monitoring Plan	B8	Within three months of the commencement of earthworks		Approved	
Operational Noise Verification Report	B11	Within three months of the commencement of operation		Pending	
Nitrogen Dioxide Monitoring Procedure	B18	Prior to commencement of operation		Pending	
Power Outage Notification Protocol	B20	Prior to commencement of operation			Pending
Work Place Travel Plan	B32/ A10	Prior to commencement of operation	Pending	Pending	
Operational Flood Emergency Response Plan	B41	Prior to commencement of operation		Pending	
Water Management Plan	B43	Prior to commencement of operation		Pending	
Landscape Management Plan	B57/B58	Prior to commencement of operation		Pending	
Operational Environmental Management Plan	C7	Prior to commencement of operation		Pending	
Operational Complaints Handling Protocol	C8	Prior to commencement of operation			Pending
Incident Notification, Reporting and Response	C12	Immediately			If required
Non-Compliance Notification	C14	Within 7 days of any non-compliance			If required

Key item	CoC	Timing	Consultation with TfNSW	Approval by the Planning Secretary	Notification/ Submission to the Planning Secretary
Compliance Reporting	C17	Within three months after the first year of commencement of operation			If required
Independent Audit Report	C19/C20	Within one year of commencement of operation			If required

5.1 Operational complaints handling protocol

This protocol outlines how the proponent will implement up to date and accurate communications to the community, as well as manage any complaints. Various forums will be available for the community to make contact including: through email, visiting the community blog, telephone hotline and in-person.

To ensure surrounding businesses and residential receivers are aware of how to lodge complaints, details will be shown on the proponent's Community blog ([Kemps Creek datacenter project overview - Microsoft Local](#)) and on signage located outside the datacentre.

The community blog is a live webpage that is updated throughout the course of construction and will be further updated through the operation of the development. The community blog features contacts details to the proponent for any general queries or other matters. For community related questions, this link can be used on the blog: SydDC@microsoft.com.

Complaints will be recorded in a complaints register. The complaints register will include the following information:

- Date and Time of Complaint: When the complaint was received.
- Receiving method of the Complaint: Who the complaint was received by and what method.
- Details of the Complainant: Name and contact information (if provided).
- Actions Taken: Steps taken to address the complaint, including timelines and outcomes.
- Responsible Staff Member: The name of the staff member handling the complaint and method that the complaint was received.

The OCHP, along with the complaints register, will be submitted to the Planning Secretary. Further information is outlined in the Operational Complaints Handling Protocol in accordance with Condition C8.

6 Environmental management

6.1 Environmental risk

Potential environmental risks associated with the project operation are identified within this OEMP. Obligations and management actions have been developed in accordance with the requirements of the CoC requirements and best practice environmental management to manage potential environmental risks.

Potential environmental risks are identified in the MFST Aspects and Impacts Register that identifies:

- Specific undertakings arising from any formal environmental impact assessment
- Relevant development consent conditions
- Flood risk and flood management pollution control approvals/licences/permits and any conditions attached to these
- Statutory and contract obligations
- Environmental risks and opportunities with significant impacts with the activities involved
- Environmental objectives, targets, and measures (where practical) for the significant impacts, risks and opportunities
- SSD-9522 Conditions.

6.2 Urban design and visual

6.2.1 Existing environment

Mamre Road and Bakers Lane are the main vantage points which afford direct views of the site. The site is located in an emerging industrial precinct, with existing industrial development and rural residential areas located in surrounding areas. The precise siting of the various structures and hardstand areas of the site, including the data centre building, offices, loading docks, car parks and landscaping, has been strategically coordinated to provide a highly functional layout and coherent visual outcome within the existing landscape. Refer to Section 6.3 of the project EIS for further information on the existing urban design and visual environment.

6.2.2 Aspects and impacts

A total of 12 viewpoints were assessed for visual impact of the project. Visual impacts are largely anticipated in the short- to medium-term following the commencement of operations at the data centre, including:

- Major/moderate visual impacts from a viewpoint to the south of the site (799 Mamre Road, Kemps Creek).
- Moderate visual impacts from a viewpoint to the southeast of the site (833A Mamre Road, Kemps Creek).
- Moderate/minor visual impacts from viewpoints to the east of the site (127 Aldington Road, Kemps Creek and Mamre Road South, Kemps Creek).

- Minor visual impacts from a viewpoint to the west of the site (405 Luddenham Road, Luddenham).
- Minor/negligible visual impacts from a viewpoint immediately to the east of the site (Mamre Road, Kemps Creek).

6.2.3 Management Actions

Proposed landscape planting at the site is anticipated to be effective in helping to reduce visual impacts for a number of sensitive close-range properties. This will be most effective after 15 years and for those receptors who experience direct views at close to medium range or expansive views close to South Creek.

A Landscape Management Plan has been prepared for the operational phase of the project (refer to Appendix C). Management actions associated with operational urban design and visual aspects and impacts are outlined in Table 6-1.

Table 6-1 Urban design and visual management actions

Action	Responsibility	Timing	Reference
Landscape maintenance schedule is to be implemented.	DCOM or delegate	During operation	Operational Landscape Management Plan, CoC B52
Regular inspections of all landscape areas should be undertaken by the Assets Team to ensure that maintenance is carried out according to the plan. The inspections should not be less frequent than three (3) monthly (or immediately after high rainfall/wind/heat events) with the objective that all areas are visited at least once within that period and an inspection checklist prepared and filled out during each inspection and a Three Monthly Maintenance Audit Form Submitted.	DCOM or delegate	During operation	Operational Landscape Management Plan, Coc B52
Tree inspection forms are to be completed once a month to review the health and vigour of all tree species located across the site.	DCOM or delegate	During operation	Operational Landscape Management Plan

6.3 Soils, water and flooding

6.3.1 Existing environment

The existing soil and water environment is described as follows:

- In previous contamination investigations carried out at the site, as well as in an environmental site assessment carried out as part of the EIS, no contaminants of potential concern (COPCs) were detected above the laboratory limits of reporting.
- The site is located outside of the 1% Annual Exceedance Probability (AEP) and Probable Maximum Flood (PMF) flood extent.
- Gross pollutant trap (GPT) and bioretention basin treatment measures included as part of SSD-9522 are noted to be sufficient to achieve pollution reduction targets for the project.

Refer to Section 6.5 of the project EIS for further information on the existing soil and water environment.

6.3.2 Aspects and impacts

The potential operational soil and water impacts of the project are limited to operational flooding and stormwater impacts, both of which are anticipated to be negligible as outlined below:

- The site is located outside of the 1% AEP and PMF flood extent and the building finished floor levels have been raised further beyond flood planning levels.
- The wider industrial development stormwater drainage network has been designed, taking into account the future proposed development flows. Ultimately, the stormwater runoff from the site would discharge into the wider industrial estate bioretention and on-site detention basins before being discharged in South Creek.
- Although no site water quality measures are required to achieve the pollutant reduction targets, a 340 kL rainwater harvesting tank is proposed to capture 47% of the runoff from the SYD05/06 roof catchment and treat the runoff for reuse within the site, such as evaporative cooling systems and irrigation. Upstream of the rainwater harvesting tank, a Gross Pollutant Trap (GPT) is proposed to remove the larger pollutants and sediments. Additionally, oil and water separators are proposed to serve connections from the HV switching station.

6.3.3 Management actions

An Operational Flood Emergency Response Plan and a Water Management Plan have been prepared for the operational phase of the project (refer to Appendix B and Appendix D, respectively). Management actions associated with operational soil and water aspects and impacts are outlined in Table 6-2.

Table 6-2 Soil and water management actions

Action	Responsibility	Timing	Reference
BOM alert setup to provide a preliminary warning to occupants of the site of imminent flooding of the area.	DCOM/CEOM All workers	Prior to operation	Operational Flood Emergency Response Plan
A Site-specific Evacuation Plan is to be followed in the event of an emergency. This plan will be identified in the Operational Flood Emergency Response Plan. The evacuation will address the protocols for the timely location of staff and visitors in the event that an emergency occurs, both within the site or within the local area.	DCOM/CEOM All workers	During operation	SSD-10101987 REMM 24
Prior to the commencement of operation, the Applicant must install the stormwater management system in accordance with the finalised detailed design (as required by condition B38) and ensure the system is operational.	DCOM/CEOM	During operation	CoC B38

Action	Responsibility	Timing	Reference
Comply with section 120 of the Protection of the Environment Operations Act 1997 which prohibits the pollution of waters (without exception, as there is no EPL for this Project) by ensuring no unnatural or hazardous material enters the natural environment directly or through stormwater drainage.	DCOM/CEOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
To comply with Condition of Consent B43, the following will be undertaken: uphold water use as described in Section 3.6, metering as per Section 4.3, wastewater disposal as per Section 3.3 and 3.4, and other operational management requirements as described in the WMP.	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
To comply with Condition of Consent B43, the following will be undertaken: In a pollution event, follow the management measures detailed in the Pollution Incident Response Management Plan	DCOM	As required	SSD-10101987 Condition of Consent B43 and B44.
To comply with Condition of Consent B43, the following will be undertaken: The Proponent will implement the most recent version of the WMP approved by the Planning Secretary for the duration of the development.	DCOM	At all times – update immediately following any update from the Planning Secretary	SSD-10101987 Condition of Consent B43 and B44.
To comply with the PIRMP as required in Condition of Consent B43, the following will be undertaken: Spill kits will be stored on site where chemicals are located in case of a spill.	DCOM	At all times – kits to be replaced before they expire	SSD-10101987 Condition of Consent B43 and B44.
All chemicals and fuel will be stored in accordance with AS 1940:2017 The Storage and handling of flammable and combustible liquids	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
To comply with Condition of Consent B43, the following will be undertaken: No contaminated water will be discharged into stormwater, any contaminated water will be transported off site to a licensed facility.	DCOM	At all times; transportation as required	SSD-10101987 Condition of Consent B43 and B44.
To comply with Condition of Consent B43, the following will be undertaken: Fire water used within the Project's battery rooms which store lithium-ion batteries will drain to holding tanks and will be pumped out to trade waste tankers following a fire event for disposal at a licensed facility.	DCOM	As required	SSD-10101987 Condition of Consent B43 and B44.
To comply with Ecologically Sustainable Development planned mitigation measures as part of the EIS, the following will be undertaken: Reduce potable water consumption where possible	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
To comply with the PIRMP and this WMP as required in Condition of Consent B43, the following will be undertaken: staff training will be conducted and maintained.	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.

Action	Responsibility	Timing	Reference
Comply with monitoring requirements detailed in Section 8.	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
Comply with general reporting requirements per the OEMP.	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
In compliance with the POEO Act, notify relevant regulatory authorities when a pollution incident occurs (refer PIRMP for details)	DCOM	Immediately after a pollution incident occurs	SSD-10101987 Condition of Consent B43 and B44.
In compliance with the PIRMP, all staff will be aware of chemical containment processes	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
In accordance with the PIRMP, a spill kit will be available on site	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
In accordance with the PIRMP, all chemicals will be correctly contained, and the material safety data sheet will be available	DCOM	At all times	SSD-10101987 Condition of Consent B43 and B44.
In accordance with the PIRMP, the Project area will be cleaned and maintained regularly	DCOM	Weekly cleaning, maintenance as required	SSD-10101987 Condition of Consent B43 and B44.

6.4 Traffic and transport

6.4.1 Existing environment

The site is bordered by Mamre Road to the east and Bakers Lane to the north. Mamre Road currently has one lane in each direction and is located adjacent to the eastern side of the industrial area. Bakers Lane is a local road that intersects Mamre Road and provides access to a number of local land uses to the east of Mamre Road before it joins Aldington Road. Mamre Road north of Bakers Lane is already operating near capacity during both the AM and PM peak periods. Traffic flow distribution on Bakers Lane (east) is dependent on the peak period. The majority of traffic flows are eastbound in the AM and westbound in the PM. The traffic volumes on Bakers Lane (east) are comfortably within the capacity of the link. Refer to Section 6.6 of the project EIS for further information on the existing traffic and transport environment.

6.4.2 Aspects and impacts

The project is anticipated to generate traffic during the operational phase as a result of vehicular traffic from staff, visitors and servicing vehicles. Given the location of the site in an emerging industrial site, most staff are anticipated to drive to the site. It is estimated that approximately 250 two-way trips would occur daily during operation, with peak traffic movements (50 two-way trips) occurring between 8am and 9am. Access to the site during operation would be via the Mamre Road / Bakers Lane intersection. Operational traffic modelling carried out as part of the EIS indicates that this intersection would operate at satisfactory level of service for all future scenarios despite the increase in traffic volumes related to the operation of the project. As such, minimal operational impacts are anticipated for the surrounding road network.

Parking requirements have been estimated for the operational phase of the project as part of the EIS, with the proposed 120 parking spaces anticipated to be able to cater for daily staff and visitor parking requirements.

6.4.3 Management actions

Management actions associated with operational traffic and transport aspects and impacts are outlined in Table 6-3.

Table 6-3 Traffic and transport management actions

Action	Responsibility	Timing	Reference
Driver code of conduct is to be provided to all delivery drivers, it outlines measures to minimise road and traffic noise.	DCOM/ All workers	During operation	CoC B12
Work Place Travel Plan developed to outline measures to promote public transport usage, such as car share schemes and employee incentives	DCOM/ All workers	Prior to operation	CoC B32
Adequate bicycle parking and end of trip facilities are to be provided on site throughout the operational phase.	DCOM	Prior to operation	CoC B32

6.5 Waste

6.5.1 Existing environment

Prior to construction, the site was undeveloped land, meaning waste was not generated. Refer to Section 6.7 for further information on the existing waste environment.

6.5.2 Aspects and impacts

Small amounts of operational waste are anticipated to be generated from the site admin areas and maintenance works, including:

- General waste
- Comingled recycling
- Cardboard and paper
- Food and organic waste
- E-waste
- Bulky waste items
- Ad-hoc waste, such as batteries, plant and general maintenance waste.

Waste estimates for the operational phase, as outlined in Section 6.7 of the EIS, are included in Table 6-4.

Table 6-4 Operational waste estimates

Waste generation	SYD05	SYD06	SYD07
General waste (L/day)	107	36	79
Comingled recycling (L/day)	7	2	5

Waste generation	SYD05	SYD06	SYD07
Paper and cardboard recycling (L/day)	171	58	126
Food waste (L/day)	36	12	26

The project is also likely to generate significant quantities of e-waste during the operational phase in the form of server racks and associated data storage equipment at end of life.

6.5.3 Management actions

Management actions associated with operational waste aspects and impacts are outlined in Table 6-5.

Table 6-5 Waste management actions

Action	Responsibility	Timing	Reference
Recyclable and non-recyclable materials generated during operation are to be collected and disposed of by a licensed contractor. The following waste streams will be adopted during operation of the project: • General waste • Comingled recycling • Cardboard and paper • Food and organic waste • Ad-hoc waste, such as batteries, plant and general maintenance waste.	DCOM/ All workers	During operation	CoC B48
On-site training is to be provided to workers relating to a Waste and Recycling Policy with clear objectives and expectations.	DCOM/ All workers	During operation	SSD-10101987 EIS and Submissions Report
Recycling and waste areas are to be clearly marked and bins suitably labelled.	DCOM All workers	During operation	SSD-10101987 EIS and Submissions Report
A waste collection and recycling contract is to be implemented to collect all e-waste for refurbishment, reuse and recycling to ensure it is not disposed of to landfill.	DCOM/ All workers	During operation	SSD-10101987 EIS and Submissions Report
Waste storage locations are to be provided within loading dock areas that comply with BCA requirements and relevant Australian Standards.	DCOM/ All workers	During operation	SSD-10101987 EIS and Submissions Report
All waste must be assessed and classified, all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014) and dispose of all wastes to a waste management facility or premises lawfully permitted to accept the waste.	DCOM/ All workers	During operation	CoC B48 and B49.

Action	Responsibility	Timing	Reference
Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal.	DCOM/ All workers	During operation	CoC B50
All sampling and waste classification data for the life of the development must be retained in accordance with the requirements of EPA.	DCOM/ All workers	During operation	CoC B51
Any unexpected contamination must be managed in accordance with the unexpected contamination finds procedure. Any material identified as contaminated must be disposed off-site, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the site.	DCOM/ All workers	During operation	Best practice

6.6 Noise and Vibration

6.6.1 Existing environment

The nearest noise sensitive receivers to the site are residential receivers located in Luddenham to the west and in isolated rural areas to the south and east, commercial/industrial receivers to the north, and educational facilities to the east. Refer to Section 6.8 of the project EIS for further information on the existing noise and vibration environment.

6.6.2 Aspects and impacts

From an operational perspective, noise emissions were assessed in the EIS for both standard operations and emergency operations in accordance with the Noise Policy for Industry (NSW EPA, 2017). Assessment of potential operational noise impacts took into consideration equipment to be used and activities to be carried out during the operational phase, including maintenance testing of emergency generators. Equipment anticipated to generate the greatest operational noise includes the three load banks (to provide the electrical load required for maintenance testing of generators), the three site transformers, and emergency generators (to provide power during periods of critical power failure).

Predicted operational noise levels at residential receivers were assessed to exceed the relevant noise criteria during the day, evening and night time scenarios where no noise mitigation is applied. Operational noise levels at residential receivers were, however, predicted to comply with the relevant criteria following the implementation of noise mitigation. Noise levels at non-residential receivers were assessed to be compliant with the relevant noise criteria.

As noise sources associated with data centres, namely mechanical and electrical plant, have constant noise characteristics, sleep disturbance arising from high maximum noise levels is not anticipated to be an issue and was not assessed as part of the project EIS.

6.6.3 Management actions

Management actions associated with operational noise and vibration aspects and impacts are outlined in Table 6-6.

Table 6-6 Noise and vibration management actions

Action	Responsibility	Timing	Reference Document
Noise monitoring on-site and within the surrounding areas, commissioning tests shall be undertaken at two measurement locations, an Operational Noise Verification Report will be developed to analyse compliance with noise limits specified in CoC B6.	CEOM/ All workers	During operation	CoC B6, B11
Complaints received relating to operational noise and vibration should be addressed in line with the Operational Complaints Handling Protocol.	CEOM/ All workers	During operation	Best practice
A complaints register will be kept to record and track all complaints.	All workers	During operation	Operational Complaints Handling Protocol

6.7 Air quality and odour

6.7.1 Existing environment

The air quality impact assessment carried out as part of the project EIS identified 25 sensitive receivers within 2 kilometres of the site, including suburban and rural residential receivers, and educational facilities. Refer to Section 6.9 of the project EIS for further information on the existing air quality environment.

6.7.2 Aspects and impacts

As part of the Air Quality Impact Assessment for the project (Appendix 13 of the project EIS), two operational air quality scenarios were assessed, including:

- Justified worst-case scenario – all generators operating in a loss of mains power situation (the likelihood of this occurring is low)
- Realistic operations – routine maintenance

For the justified worst-case scenario, concentrations of particulate matter, CO, SO₂, benzene and PAHs were all assessed to be below the relevant assessment criteria. NO₂ concentrations under this scenario, however, were assessed to not be compliant with the relevant criteria at all receivers. However, the likelihood of all generators operating simultaneously is considered to be low.

For the realistic operations scenario, concentrations of all assessed pollutants were predicted to meet the impact assessment criteria under all routine maintenance conditions at all sensitive receivers. As such, the operation of the standby generators during maintenance and testing activity is not anticipated to adversely impact the air quality of the nearby sensitive receivers during normal operations.

6.7.3 Management actions

Management actions associated with operational air quality aspects and impacts are outlined in

Table 6-7.

Table 6-7 Air quality management actions

Action	Responsibility	Timing	Reference Document																																																																																																																																																																																
Maintenance testing of emergency generators is anticipated to occur during the daytime period, between 07:00am and 06:00pm (Monday to Saturday or Public Holidays) or 08:00am and 06:00pm on Sundays. The total testing regime for all 62 generators is summarised below: Table 3: Standby Generator Annual Testing Regime <table><tr><th rowspan="2">Month</th><th rowspan="2">Test</th><th colspan="2">Duration (min)</th><th colspan="2">Data Centre Gen Testing</th><th colspan="2">Admin Gen Testing</th><th rowspan="2">Total Gens Tested</th><th rowspan="2">Total Mins</th></tr><tr><th>Run</th><th>Cooldown</th><th>Number of tests</th><th>Gens run per test^a</th><th>Number of tests</th><th>Gens run per test^a</th></tr><tr><td>1</td><td>Bi-monthly, no load</td><td>10</td><td>0</td><td>30</td><td>2</td><td>2</td><td>1</td><td>62</td><td>320</td></tr><tr><td>2</td><td>No test</td><td></td><td></td><td></td><td></td><td></td><td></td><td>62</td><td></td></tr><tr><td>3</td><td>Quarterly, 70% load</td><td>30</td><td>5</td><td>60</td><td>1</td><td>2</td><td>1</td><td>62</td><td>2170</td></tr><tr><td>4</td><td>Bi-Monthly, no load</td><td>10</td><td>0</td><td>30</td><td>2</td><td>2</td><td>1</td><td>62</td><td>320</td></tr><tr><td>5</td><td>No test</td><td></td><td></td><td></td><td></td><td></td><td></td><td>62</td><td></td></tr><tr><td>6</td><td>Quarterly, 70% load</td><td>30</td><td>5</td><td>60</td><td>1</td><td>2</td><td>1</td><td>62</td><td>2170</td></tr><tr><td>7</td><td>Bi-Monthly, no load</td><td>10</td><td>0</td><td>30</td><td>2</td><td>2</td><td>1</td><td>62</td><td>320</td></tr><tr><td>8</td><td>No test</td><td></td><td></td><td></td><td></td><td></td><td></td><td>62</td><td></td></tr><tr><td>9</td><td>Quarterly, 70% load</td><td>30</td><td>5</td><td>60</td><td>1</td><td>2</td><td>1</td><td>62</td><td>2170</td></tr><tr><td>10</td><td>Bi-Monthly, no load</td><td>10</td><td>0</td><td>30</td><td>2</td><td>2</td><td>1</td><td>62</td><td>320</td></tr><tr><td>11</td><td>No test</td><td></td><td></td><td></td><td></td><td></td><td></td><td>62</td><td></td></tr><tr><td>12</td><td>Annual, 100% load</td><td>60</td><td>5</td><td>60</td><td>1</td><td>2</td><td>1</td><td>62</td><td>4030</td></tr><tr><td colspan="9">Total minutes per year</td><td>11820</td></tr><tr><td colspan="9">Total hours per year</td><td>197</td></tr><tr><td colspan="10">Note:</td></tr><tr><td colspan="10">a. Data Centre generator testing will be conducted separately from the admin generator testing.</td></tr></table>	Month	Test	Duration (min)		Data Centre Gen Testing		Admin Gen Testing		Total Gens Tested	Total Mins	Run	Cooldown	Number of tests	Gens run per test ^a	Number of tests	Gens run per test ^a	1	Bi-monthly, no load	10	0	30	2	2	1	62	320	2	No test							62		3	Quarterly, 70% load	30	5	60	1	2	1	62	2170	4	Bi-Monthly, no load	10	0	30	2	2	1	62	320	5	No test							62		6	Quarterly, 70% load	30	5	60	1	2	1	62	2170	7	Bi-Monthly, no load	10	0	30	2	2	1	62	320	8	No test							62		9	Quarterly, 70% load	30	5	60	1	2	1	62	2170	10	Bi-Monthly, no load	10	0	30	2	2	1	62	320	11	No test							62		12	Annual, 100% load	60	5	60	1	2	1	62	4030	Total minutes per year									11820	Total hours per year									197	Note:										a. Data Centre generator testing will be conducted separately from the admin generator testing.										CETM/CEOM All workers	During operation	SSD-10101987 EIS Appendix 13 (AQ3)
Month			Test	Duration (min)		Data Centre Gen Testing		Admin Gen Testing			Total Gens Tested	Total Mins																																																																																																																																																																							
	Run	Cooldown		Number of tests	Gens run per test ^a	Number of tests	Gens run per test ^a																																																																																																																																																																												
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Operation of standby generators during testing and maintenance should be minimised as far as practicable.																																																																																																																																																																																			

Action	Responsibility	Timing	Reference Document
The above testing schedule would give a cumulative total of 197 hours operation for all 62 generators combined. Therefore, the cumulative operation will not be more than the 200-hour exemption limit in Schedule 1 Clause 17 (1A) of the NSW POEO Act 1997.			
In the event of a loss of mains power, all practical measures are to be taken to reduce the duration of the outage to ensure that standby generators operate for the least amount of time possible.	CETM/CEOM All workers	During operation	SSD-10101987 EIS Appendix 13 (AQ4)
The Nitrogen Dioxide Monitoring Procedure is to be followed during operation, including the implementation of appropriate control measures to minimise the duration of each power outage event and adherence to relevant monitoring procedures during power outage events.	CETM/CEOM All workers	During operation	CoC B18 and B19.
The Power Outage Notification Protocol is to be implemented in the event of a power outage to inform nearby sensitive receivers that backup generators are in operation.	CETM/CEOM All workers	During operation	CoC B20 and B21.
Complaints received relating to operational noise and vibration should be addressed in line with the Operational Complaints Handling Protocol (refer to Section 5.1).	CETM/CEOM All workers	During operation	Best practice
The install and operate equipment in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the Protection of the Environment Operations (Clean Air) Regulation 2021 (as may be updated or replaced from time to time).	CETM/CEOM All workers	During operation	CoC B16
Within 30 days of the back-up generator system being used to power the development during a power outage event (or as otherwise agreed to in writing by the Planning Secretary), a Back-up Generator Incident Report will be prepared to: (a) Assess any air quality impacts resulting from the operation of the back-up generators; (b) As well as ensuring the consideration of any additional measures which could be implemented to reduce future air quality impacts.	CETM/CEOM All workers	During operation	CoC C13

6.8 Hazard and risk

6.8.1 Existing Environment

The existing site, prior to construction comprised of an undeveloped land portion, there was no storage of hazardous goods on site.

6.8.2 Aspects and impacts

A preliminary risk screening in accordance with State Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP 33) was carried out as part of the project EIS, which assessed dangerous goods to be stored on site during operation. These substances are outlined in Table 6-8.

Table 6-8 Dangerous goods to be stored on site

Substance	Quantity
Lithium-ion batteries	250 tonnes
Diesel	~1,650 tonnes
Transformer oil	120 kL

Since no thresholds set out by Table 1 of *Applying SEPP 33* (Department of Planning, 2011) are exceeded, the development is not considered to be potentially hazardous and SEPP 33 does not apply in terms of storage.

Details of the storage of diesel fuel for the generators during operation are outlined in Table 6-9.

Table 6-9 Diesel stored in back-up generators

Location	Number of generators	Generator capacity (kL)	Total fuel (kL)
Data hall	60	31	1,860
Administration building	2	6.5-7.5	15
Total	62	N/A	1,875

6.8.3 Management actions

Measures implemented during the construction phase, including appropriate fire resistance measures, adequate ventilation, smoke detectors, sprinkler systems, fire safety strategy, and adequate separation distances between fuel tanks and generators, would assist to minimise impacts associated with hazardous materials during operation.

Management actions associated with operational hazard and risk aspects and impacts are outlined in Table 6-10.

Table 6-10 Hazard and risk management actions

Action	Responsibility	Timing	Reference Document
The storage and use of hazardous materials is to be carried out in line with relevant Australian Standards.	CEOM/ All workers	During operation	CoC B22.
Placards and warning signs are to be maintained throughout operation, including on or near containers of diesel and at any entrance where emergency services may enter the site.	CEOM/ All workers	During operation	SSD-10101987 EIS Appendix 21 – SEPP 33 Report
The diesel fuel storage capacity of the site does not exceed 2,000 tonnes at any one time.	CEOM/ All workers	During operation	CoC A6
All equipment must be maintained in a proper and efficient condition; and operated in a proper and efficient manner.	CEOM/ All workers	During operation	CoC A19
The operation of the back-up generators and/or the associated enclosures do not preclude the ability for additional air pollution emission controls to be retrofitted.	CEOM/ All workers	During operation	CoC B17
A Pollution Incident Response Management Plan (PIRMP) will need to be developed to manage spill prevention and response on the Project.	CEOM/ All workers	During operation	CoC B22

6.9 Bushfire

6.9.1 Existing environment

The site is mapped as category 2 bushfire prone land. Area mapped as category 2 bushfire prone land represents a lower bush fire risk to surrounding development. The topography of the land within the site gradually falls to the west towards South Creek, with areas to the north and south of the site having a slight slope to the west. Refer to Section 6.10 of the project for further information on the existing bushfire potential.

6.9.2 Aspects and impacts

NSW Rural Fire Service requirements for industrial buildings include the provision of a setback from the bushfire prone vegetation which will minimise flame contact on a building. Defendable spaces/asset protection zones (APZs) have been assessed for the Data Centre in accordance with *Planning for Bushfire Protection 2019* and Australian Standard AS3959 – 2018 (using effective slope and predominant vegetation communities). APZs established and to be maintained for the project are as follows:

- Table A1.12.5 of *Planning for Bushfire Protection 2019* identifies that to prevent flame contact on the portion of the data centre located adjacent to the RE1 zoned land to the south (with forest vegetation), the minimum width of the APZ to prevent flame contact on the building is 22 metres.

- A 22-metre-wide APZ will also be required to the western aspect of the data centre to prevent flame contact on the building from the rehabilitated River Flat Eucalypt Forest.
- To prevent flame contact on the portion of the data centre located adjacent to the RE1 zoned land to the south (with grassland vegetation), the minimum width of the APZ to prevent flame contact on the building is nine metres.
- To prevent flame contact on the northern aspect of the data centre, an eight-metre-wide APZ is required to prevent flame contact on the building.

Vehicular access to the site is also required to be maintained. This will be provided from Mamre Road via the new industrial estate road network. The data centre is unlikely to be subject to a fire event that will create the need for the evacuation of the premises, or require the development of a bushfire management plan. However, the management of evacuation of the staff/visitors will need to be addressed in the preparation of a site-specific Evacuation Plan for the facility.

6.9.3 Management actions

Management actions associated with operational bushfire aspects and impacts are outlined in Table 6-11.

Table 6-11 Bushfire management actions

Action	Responsibility	Timing	Reference Document
Asset protection zones are to be maintained through regular inspections of all landscaped areas in line with the following actions: • Maintain a clear area of low-cut lawn or pavement adjacent to the buildings and utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to the building. • Keep areas under shrubs and trees raked and clear of combustible fuels. • Trees and shrubs should be maintained in such a manner that tree canopies are separated by two metres and understorey vegetation is not continuous (retained as clumps).	DCOM/ All workers	During operation	SSD-10101987 EIS Appendix 20

7 Environmental incidents

7.1 Notification requirements following an incident

In the event of an environmental incident, the Pollution Incident Response Management Plan (PIRMP) will be implemented.

The PIRMP covers:

- Pre-emptive controls and actions
- Spills of hazardous materials,
- Exposure to hazardous chemicals
- Emergency response procedures

The PIRMP includes:

- Chemicals and potential hazards on site,
- Pollution incident response actions, including pre-emptive actions and controls and emergency response procedures,
- Incident definition, incident notification and communication requirements, and
- List of key emergency personnel, a list of internal personnel & external agencies names, numbers & specific responsibilities for emergency planning and response.

The PIRMP will be kept on the site's sharepoint and communicated during the site induction.

All efforts will be undertaken immediately to avoid and reduce impacts of incidents. However, in the event of an incident, all required action will be taken to resolve it as quickly as possible in accordance with the PIRMP. The proponent will provide records of all environmental incidents and regulatory action to the Planning Secretary. The Critical Environment Operation Manager (CEOM) or delegate will notify staff as appropriate, in accordance with the severity and status of the incident. Incident notification requirements have been outlined in

Table 7-1.

Table 7-1 Incident notification requirements

Situation	CoC/guidelines	Notification requirement
Occurrence of any incident that is defined in the CoC as "an occurrence or set of circumstances that causes, or threatens to cause, material harm and may or may not be or cause material harm and which may not be or cause non-compliance"	CoC C12	Notify the Secretary as soon as possible within 24 hours. The notification will include the time and date of the incident, incident details and any consequent non-compliance with the CoC. Any requirement from the Secretary or other public authority to address the cause or impact of an incident will be complied with.
Pollution incidents on or around the site that: Involve actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or Result in	Part 5.7 of the Protection of the Environment Operations Act 1997	Notify the EPA via the EPA Environment Line (telephone 131 555) Notify the Secretary within 24 hours

Situation	CoC/guidelines	Notification requirement
actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations)		
Note 1: material harm is defined in the CoC as harm that: Involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial; or Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.		

7.2 Environmental Non-conformances

A non-conformance is a failure to comply with a requirement noted in Section 2.2, Table 2-1 and Table 2-2, standard or procedure such as this OEMP or associated documents. Environmental non-conformances may be identified through improvement opportunities, regular environmental inspections or monitoring, internal or external audits, complaints, community consultation, observations or through incident management. Any member of the Project team may raise a non-conformance or improvement opportunity.

Non-conforming activities may be stopped, if necessary, by the Datacentre operations manager, delegate or other project personnel. The works will not commence until a corrective / preventative action has been closed out. The Datacentre operations manager may also stop works in these circumstances.

Where non-conformances are identified during a review of compliance, they will be communicated to the Datacentre operations manager. This will then be recorded on an environmental action list by the Datacentre operations manager that will be issued to the relevant supervisor for action. Actions will be assigned an implementation priority in a collaborative way by the inspection team based on environmental risk. Timeframes will be set to ensure any damage incurred is rectified and any chance of recurrence is eliminated as soon as practicable. Following corrective action, the Datacentre operations manager will close out the non-compliance. The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.

A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance in accordance with CoC C15.

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

A non-compliance will also be recorded in Enablon (cloud-based software) by the regional environmental compliance project manager. An action plan with timeframes will be developed by the datacenter operations manager with support of the environment health and safety site manager and the regional environmental compliance project manager. The corrective action will be monitored, and performance will be validated by the regional compliance project manager who will close out the non-compliance.

8 Monitoring, inspections and auditing

8.1 Environmental inspections

An indicative program of site inspections is outlined in Table 8-1. Copies of all environmental inspections will be kept and actions closed out within agreed timeframes.

Table 8-1 Site inspection program

Item	Frequency	Sub-plan	Reporting requirement	Responsibility
Environmental inspection	Quarterly	This OEMP	Inspection checklist	DCOM or delegate
Inspection of all landscape areas	Every 3 months	Operational Landscape Management Plan	Maintenance Audit Form	DCOM or delegate
Tree inspection	Once a month	Operational Landscape Management Plan	Tree Inspection Form	DCOM or delegate
Inspection of the oil and water separators in accordance with supplier recommendations.	Six-monthly intervals or as recommended by supplier.	Water Management Plan	Quarterly environmental inspection report	DCOM or delegate
Inspection of rainwater tankscreens. The inspection should be carried out in general accordance with the recommended inspection requirements within the Penrith City Council WSUD Inspection and Maintenance Guidelines (Penrith City Council, 2022)	Six-monthly intervals.	Water Management Plan	Quarterly environmental inspection report	DCOM or delegate
Inspection of chemical and diesel storages and surrounding area for leaks.	Quarterly	Water Management Plan	Quarterly environmental inspection report	DCOM or delegate
The PIRMP will be tested and reviewed	Within three months of the conditions listed in Section 9 of the PIRMP	Water Management Plan	Quarterly environmental inspection report	DCOM or delegate

Inspection of the broader industrial estate bioretention system and detention basin in collaboration with industrial estate management team to confirm the treatment system is operating effectively. Where corrective actions are required, the industrial estate management team (Altis Fraser Barings) should carry out the corrective actions. The inspection should be carried out in general accordance with the recommended inspection requirements within the Penrith City Council WSUD Inspection and Maintenance Guidelines (Penrith City Council, 2022)	Yearly	Water Management Plan	Quarterly environmental inspection report	DCOM or delegate
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8.2 Environmental monitoring

Monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of this OEMP, and to address approval requirements. The monitoring requirements for required aspects are included in the relevant environmental management sub-plans and summarised in Table 8-2.

Table 8-2 Operational phase monitoring required by the project approval

REMM/CoC	Description	Sub-plan	Reporting requirements	Responsibility
7.2 (13), B11	Noise monitoring on-site and within the surrounding areas, commissioning tests shall be undertaken at two measurement locations	Operational Noise Management Plan	Operational Noise Verification Report	Critical Environment Operation Manager or delegate
B18	Nitrogen dioxide monitoring during a power outage event	Nitrogen Dioxide Monitoring Procedure	Back-up Generator Incident Report	Critical Environment Operation Manager or delegate
A6	Maintenance testing of generators to ensure no more than 197 hours operation for all 62 generators	Nitrogen Dioxide Monitoring Procedure	This will be recorded in Enablon	Critical Environment Operation Manager or delegate
A6	The diesel fuel storage capacity of the site does not exceed 2,000 tonnes at any one time.	OEMP	Quarterly Environmental Inspection Report	Critical Environment Operation Manager or delegate

8.3 Auditing and compliance

In accordance with C19, independent audits will be conducted. Audits will include works undertaken by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary. External audits will be undertaken in accordance with the project approval and the Independent Audit Post Approval Requirements (Department 2020). An indicative audit schedule is outlined in Table 8-3.

Table 8-3 Indicative audit schedule

CoC	Item	Timing	Reporting requirements	Responsibility	Recipient
C17/C18	Compliance Report	Within three months after the first year of commencement of operation of the development, and in the same month each subsequent year	The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Planning Secretary and notify the Planning Secretary in writing at least seven days before this is done.	DCOM and CEOM or delegate	Planning Secretary, The proponent
C19	Independent Environmental Audit	Within one year of commencement of operation and every 3 years after	Submitted to the satisfaction of the Planning Secretary within three months of commissioning the Audit (or within another timeframe agreed by the Planning Secretary).	DCOM and CEOM or delegate	Planning Secretary, The proponent
C20	Independent environmental audit response and timetable	60 days after submission of the environmental audit report to the Planning Secretary	Make each Independent Audit Report and response to it publicly available no later than 60 days after submission to the Planning Secretary and notify the Planning Secretary in writing at least 7 days before this is done	DCOM and CEOM or delegate	Planning Secretary and any other NSW agency that requests it

8.4 Other reporting

A summary of the required compliance reporting for the operational phase of the project is outlined in Table 8-4.

Table 8-4 Reporting requirements

Reference	Item	Timing	Reporting requirements	Responsibility	Recipient
Operational Landscape Management Plan	Landscape Maintenance Schedule	As specified within the schedule (there are numerous items required at different intervals over 6-12 months)	Maintenance Report	CEOM and DCOM or delegate	The proponent
Operational Complaints Handling Protocol	Complaints Register	At the time of a complaint	Details of the date, time and nature of a complaint	CEOM and DCOM or delegate	Planning Secretary upon request
CoC B51	Waste classification data	During operation	All sampling and waste classification data for the life of the development must be retained in accordance with the requirements of EPA.	CEOM and DCOM or delegate	The proponent
CoC C1	Aspects and Impacts Register	During operation	The register will be regularly reviewed and updated with any new risks during operation	CEOM and DCOM or delegate	The proponent

9 Document Control

Documents are developed and maintained in line with AS/NZS ISO 9001 Quality Management Systems.

The Master controlled copies of this OEMP and supporting documents, will be held within the Project's document management system where copies of these documents are accessible to project personnel and relevant stakeholders as necessary.

All controlled documents once printed are considered "uncontrolled". The control of records includes identification, storage, protection, retention periods and disposition with records being kept for a minimum of five (5) years or as otherwise specified in contracts and/or environmental planning approval documentation.

9.1 OEMP review and updates

Continual improvement is achieved through constant measurement and evaluation, and audit and review of the effectiveness of this OEMP.

The OEMP will be updated accordance with CoC C10, within three months of the following:

- the submission of a Compliance Report under condition CoC C17;
- the submission of an incident report under condition C12;
- the submission of an Independent Audit under condition C19;
- the approval of any modification of the conditions of this consent; or
- the issue of a direction of the Planning Secretary under condition A2(b) which requires a review, the strategies, plans and programs required under this consent must be reviewed.

Additionally, this OEMP will be updated as required:

- if necessary to either improve the environmental performance of the development
- cater for a modification or comply with a direction,
- the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary.

Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review required under condition C10, or such other timing as agreed by the Planning Secretary.

Minor changes to the OEMP and sub-plans would not be submitted for approval to the Planning Secretary. Minor changes to the OEMP and sub-plans would typically include those that:

- Are editorial in nature, e.g. staff and agency/authority name changes,
- Do not increase the magnitude of impacts on the environment when considered individually or cumulatively,
- Do not compromise the ability of the Project to meet approval or legislative requirements.

10 References

Australian Standard AS 1055 Acoustics – 2018

Australian Standard AS 3959 – 2018

Biodiversity Conservation Act 2016,

<https://legislation.nsw.gov.au/view/html/inforce/current/act-2016-063>

Commonwealth Environment Protection and Biodiversity Conservation Act 1999,

<https://www.legislation.gov.au/C2004A00485/latest/text>

Environmental Planning and Assessment Act 1979,

<https://legislation.nsw.gov.au/view/whole/html/inforce/current/act-1979-203>

Environmental Planning and Assessment Regulation 2000,

<https://legislation.nsw.gov.au/view/whole/html/2021-03-12/si-2000-0557>

Kemps Creek Data Centre, Noise and Vibration Impact Assessment, Arup Pty Ltd, 01/09/2022

Noise Policy for Industry, NSW EPA, 2017, <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/noise/17p0524-noise-policy-for-industry.pdf>

Planning for Bushfire Protection 2019,

https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0005/174272/Planning-for-Bush-Fire-Protection-2019.pdf

Protection of the Environment Operations Act 1997,

<https://legislation.nsw.gov.au/view/html/inforce/current/act-1997-156>

Protection of the Environment Operations (Clean Air) Regulation 2021,

<https://legislation.nsw.gov.au/view/pdf/asmade/si-2021-485>

State Environmental Planning Policy (State and Regional Development) 2011,

<https://legislation.nsw.gov.au/view/html/inforce/2020-05-15/epi-2011-0511>

State Environmental Planning Policy (Infrastructure) 2007,

<https://legislation.nsw.gov.au/view/html/inforce/2016-02-19/epi-2007-0641>

State Environmental Planning Policy No 19 – Bushland in Urban Areas,

<https://legislation.nsw.gov.au/view/html/2018-04-03/epi-1986-0014>

State Environmental Planning Policy No 33 – Hazardous and Offensive Development,

<https://www.planning.nsw.gov.au/sites/default/files/2023-03/hazardous-and-offensive-development-application-guidelines-applying-sepp-33.pdf>

State Environmental Planning Policy No 55 – Remediation of Land,

<https://legislation.nsw.gov.au/view/html/inforce/current/epi-1998-0520>

State Environmental Planning Policy (Western Sydney Aerotropolis) 2020,

<https://legislation.nsw.gov.au/view/html/inforce/2020-09-30/epi-2020-0545>

State Environmental Planning Policy (Western Sydney Employment Area) 2009,

<https://legislation.nsw.gov.au/view/whole/html/2020-02-01/epi-2009-0413>

Appendix A Driver Code of Conduct

All staff of the construction site (including subcontractors), whether directly or indirectly, who engage in the movement of delivery trucks or motor vehicles on the site shall abide by the following code of conduct. All drivers of vehicles including employee and contractor truck drivers will be required to sign a register of inducted drivers confirming that they agree to the obligations, requirements, and directions in regard to the Traffic Management component of and Driver's Code of Conduct. The signed drivers code of conduct register shall be kept on the premises at all times and be readily available upon request by authorised Council or other government officers.

In the event that a statutory requirement overlaps the scope of this plan then the statutory requirements will take precedence. If there is a real or perceived difference between the statutory regulations and this document then the contractor or staff member must first seek clarification from the proponent on the implementation of that action for which the difference is identified.

- a) Drivers to be appropriately licenced by TfNSW or another Australian state for the vehicle size and combination.
- b) Drivers will abide by the (NSW) Road Rules 2014 as amended at all times when travelling on public roads and within the site.
- c) It is prohibited to be under the influence of alcohol while operating a motor vehicle in accordance with the NSW Road Rules or as specified in contractual agreements for all employees. This specifically includes consumption by any worker who will operate machinery or a vehicle during their work period.
- d) It is prohibited to be under the influence of drugs, other than alcohol, while operating a motor vehicle in accordance with NSW Road Rules or as specified in contractual agreements for all employees. This includes illicit drugs and those which may directly or indirectly have an effect such as those accompanied by the warning of "This medicine may cause drowsiness and may increase the effect of alcohol. If affected do not drive a motor vehicle or operate machinery".
- e) Contractors will specifically be required to abide by this code of conduct and management plan at all times while engaged in performing their duties during their work period. Failure of a contractor to comply with this code of conduct (without due cause) may result in reprimand or severance of employment by the land owner/proprietor in accordance with relevant government policies and contractual agreements for all employees. Failure of compliance will be recorded by the Site Manager.
- f) Drivers should adjust their driving speeds and turning movements during times of poor weather including rain, fog and wind. Drivers should also turn on headlights / fog lights during fog weather conditions.
- g) Drivers will comply with the direction of authorised staff when within the site.
- h) Drivers queued in the site will travel into the site as far as possible to form the queue. When space becomes available ahead of their vehicle the driver will progress forward into the available space to allow for additional queueing behind the vehicle.
- i) Drivers will follow the nominated vehicle movement routes referred to in the Construction Traffic Management Plan component and **Annexure G**, including movements limited by, prevailing traffic conditions, vehicle size and vehicle mass. Drivers are to obey temporary

changes in travel routes as directed by regulatory signage or under the direction of Police or traffic controller at work sites and drive their vehicles in a compliant manner appropriate to the size of the vehicle and road conditions.

Appendix B Flood Emergency Response



van der meer

FLOOD EMERGENCY RESPONSE PLAN

OPERATIONAL PHASE

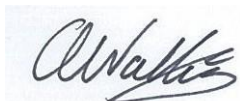
SYD-05 & SYD 06

769 MAMRE ROAD, KEMPS CREEK

1st November 2024

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Document Control Record

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REVISION STATUS

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A	DRAFT	11/10/2024	Max Yu
B	Final	01/11/2024	Vahid Bazzaz
C	Final	28/02/2025	Vahid Bazzaz

Recipients are responsible for eliminating all superseded documents in their possession.

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This document and its contents are intended for the addressee only and contains opinions held by the Author based on material available at the time and expresses those opinions for the purposes of consideration by the Addressee and not for general publication without written consent.

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1. Introduction

van der Meer Consulting has been engaged to prepare an Operational Flood Emergency Response Plan (OFERP) for Microsoft's Data Centre currently in construction as of the 11th of October 2024. The project is subject to potential flooding risks that can impact the project's progress, assets, and personnel safety.

This OFERP has been developed to supplement the Operational Environmental Management Plan (OEMP), which is an annexure to the Sub-Consultant Agreement with Arup for the Occupation Certificate of the SYD05 and SYD 06 buildings.

The Kemps Creek Data Centre consists of the three buildings referred to as SYD05, SYD06 and SYD07 and lies within a larger industrial precinct known as the YARDS. This OFERP outlines a strategy that demonstrates the contractor's approach to manage the emergency response to flood events over 1% Annual Exceedance Probability (AEP) and up to the Possible Maximum Flood (PMF) during the operational phase of SYD05 and SYD 06.

The purpose of this OFERP is ensure the safety of all employees and personnel involved in the operation of the data centre in the event of a flood emergency.

NOTE: Operations manages all Major Environmental Events within the Business Resilience Plan (BRP). This will include the requirements of an Operational Flood Evacuation and Emergency Response Plan (OFERP).

1.1 Condition Compliance Table

Table 1 below outlines the development conditions relevant to the updated OFERP of this site, and the relevant section of the report addressing the condition is outlined below.

Table 1: Condition Compliance Table

Condition	Addressed in this document
Flood Management	
B39. Prior to the commencement of construction of the development, the Applicant must prepare a Flood Emergency Response Plan to the satisfaction of the Planning Secretary. The Plan must form part of the CEMP and OEMP required by conditions C2 and C5 and must:	
(a) be prepared by a suitably qualified and experienced person(s);	
(b) address the provisions of the Floodplain Risk Management Guide (OEHL, 2007);	Section 3
(c) include details of:	
(i) the flood emergency responses for both construction and operation phases of the development;	Refer to previous FERP
(ii) predicted flood levels;	Section 3.1.4
(iii) flood warning time and flood notification;	Section 5.3.3 & 5.4.3
(iv) assembly points and evacuation routes;	Refer to previous FERP
(v) evacuation and refuge protocols; and	Refer to previous FERP
(vi) awareness training for employees and contractors.	Refer to previous FERP
B41. Prior to the commencement of operation, the Applicant must prepare an Operational Flood Emergency Response Plan to the satisfaction of the Planning Secretary. The Plan must form part of the OEMP required by conditions C5 and must:	
(a) address the relevant requirements outlined under condition B39	See above
(b) include details of:	
(i) the flood emergency responses procedures to be implemented during operation	Section 5
(ii) updated assembly points, refuge areas and evacuation routes;	Section 5.4
(iii) flood warning signs and depth indicators;	Section 5.2.3
(iv) refuge and evacuation protocols for all employees, contractors and visitors; and	Section 5.4
(v) awareness training for operational employees and any relevant persons associated with the development.	Section 4.3

1.2 Relevant Legislation

Table 2 details the legislation, planning instruments and guidelines considered during development of this sub-plan.

Table 2: Relevant Legislation

<u>Legislation</u>	<u>Description</u>	<u>Relevance to this plan</u>
Environmental Planning and Assessment Act 1979	This Act establishes a system of environmental planning and assessment of development proposals for the State.	The development conditions and obligations are incorporated into this OFERP.
State Emergency and Rescue Management Act 1989	This Act is applicable to all emergencies as defined below: In this Act: "Emergency" means an emergency due to an actual or imminent occurrence (such as fire, flood, storm, earthquake, explosion, accident, epidemic or warlike action) which: a) endangers, or threatens to endanger, the safety or health of persons in the State; or b) destroys or damages, or threatens to destroy or damage property in the State, being an emergency which requires a significant and co-ordinated response.	The development conditions and obligations are incorporated into this OFERP.

1.3 Guidelines

Guidelines that have specific requirements relating to the Operational Flood Emergency Response include:

- Flood Emergency Response Planning Classification of Communities, Floodplain Risk Management Guideline, Department of Environment & Climate Change (DECC), 2007.
- Flood risk management manual, Department of Planning and Environment (DPE), 2023
- Support for emergency management planning, DPE, 2023
- New South Wales State Flood Plan (EMPLAN), State Emergency Management Committee, dated 2nd December 2021

- Penrith City Local Flood Emergency Sub-plan, dated 8th February 2022
- Bureau of Meteorology - Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 3.15, 2024
- NSW SES - The Application of Timelines to Evacuation Planning, Steve Oppen, dated February 2004
- Australian Emergency Manuals Series, Manual 20: Flood Preparedness, Commonwealth of Australia 2009.
- Australian Emergency Manuals Series, Manual 21: Flood Warning, Commonwealth of Australia 2009.
- Australian Emergency Manuals Series, Manual 22: Flood Response, Commonwealth of Australia 2009.

1.4 Relevant Project Documentation Referenced

The below reports and documentation completed by other consultants is also referenced in this report:

- ARUP – Kemps Creek Data Centre Stormwater and Flooding Report – Doc Number SYD05-06-07_C-R-0001 Rev 2 Dated 16th April 2021
- Costin Roe Consulting - Overland Flow Report, SSD 9522, Mamre Road and Southern Link Road, Orchard Hills, Reg G, dated 16th May 2019d
- Advisian – South Creek Floodplain Risk Management Study – Revision E – Dated 26th February 2020
- Advisian – Wianamatta South Creek Catchment Flood Study – Existing Conditions – Revision I – Dated 21st May 2022
- Advisian – Wianamatta South Creek Catchment Flood Study – Cumulative Impact Assessment – Revision E – Dated 24th January 2023
- BMT - Flood Emergency Response Plan - Construction Phase (Sydney Children's Hospital Stage 1 and Minderoo Children's Comprehensive Cancer Centre) – Project No A12063 – Dated 01st September 2022.

2. Background and Scope

2.1 Site Description

The site is located at 769 Mamre Road, Kemps Creek NSW 2178 and is part of a larger industrial development precinct known as “The YARDS”. The site footprint has an area of approximately 6 hectares (ha) or 60 000 square metres (sq.m). The data centre is located approximately 40 kilometres (km) west of the Sydney Central Business District (CBD). The site lies adjacent to a natural watercourse known as “South Creek” to the west and a smaller, unnamed watercourse to the south.

A locality plan for the site is provided in Figure 1 below:

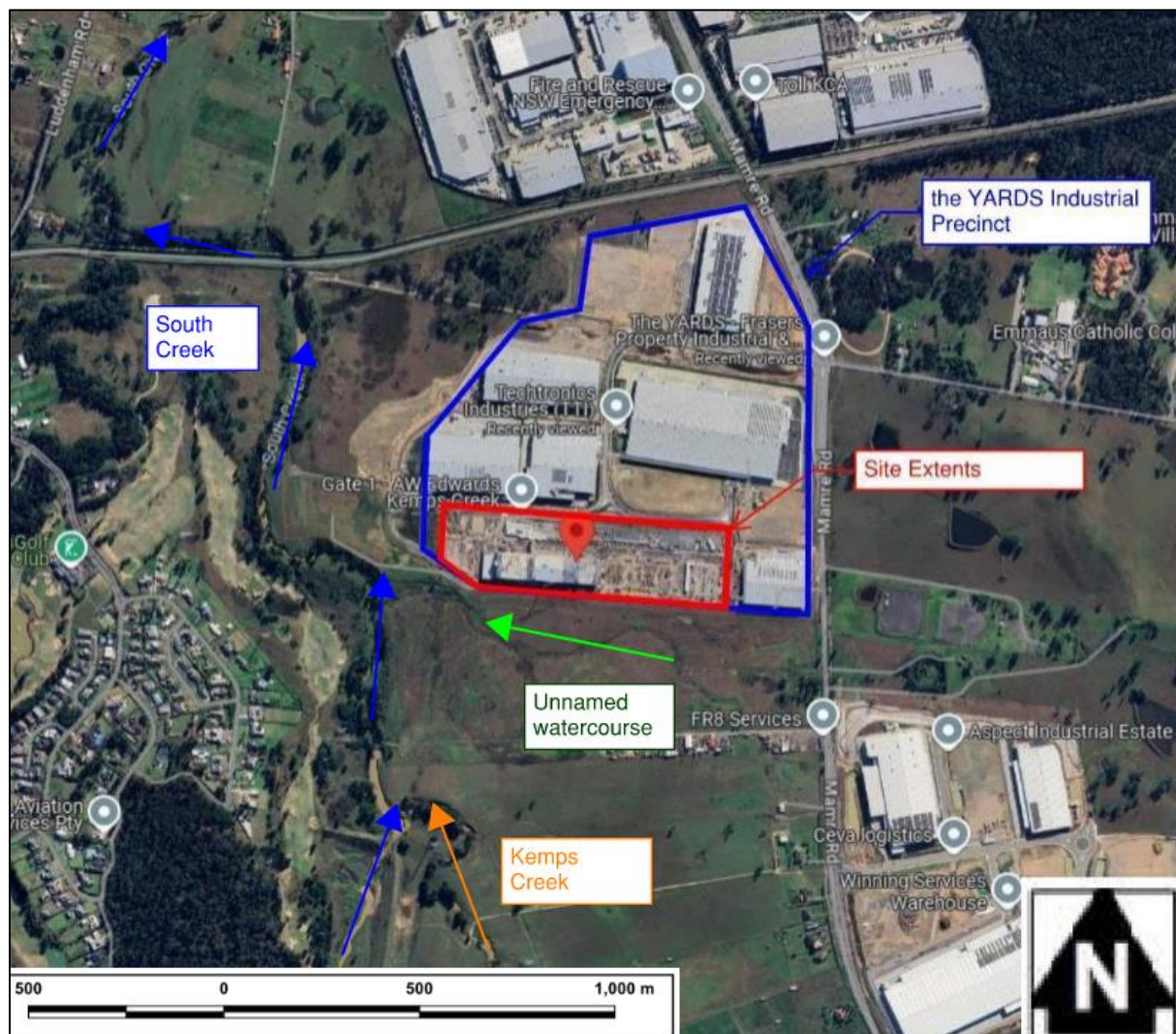


Figure 1: Site overview (Source: Google Maps)

2.2 Completed Works

List of completed works on site are as below:

- Two (2) multi-storey buildings
 - Tenant spaces
 - Facility support areas
 - Open areas for external containerised plants
- Water storage systems
- Diesel fuel storage areas
- HV electrical switching station.
- On-grade carparks

2.3 Site Access

Vehicular access to the site is available through Mamre Road east of the site onto Wubin Lane, Giba Drive and then onto Buda Way and Gudyung Close. Two (2) entrances to the site are located on the western end of the northern boundary on Buda Way (Gate 1 & 1A) and one (1) entrance is located on the eastern boundary on Gudyung Close (Gate 2), shown below in Figure 2. Further details regarding the site access points can be found in “Construction Traffic Management Plan” by McLaren Traffic Engineering.

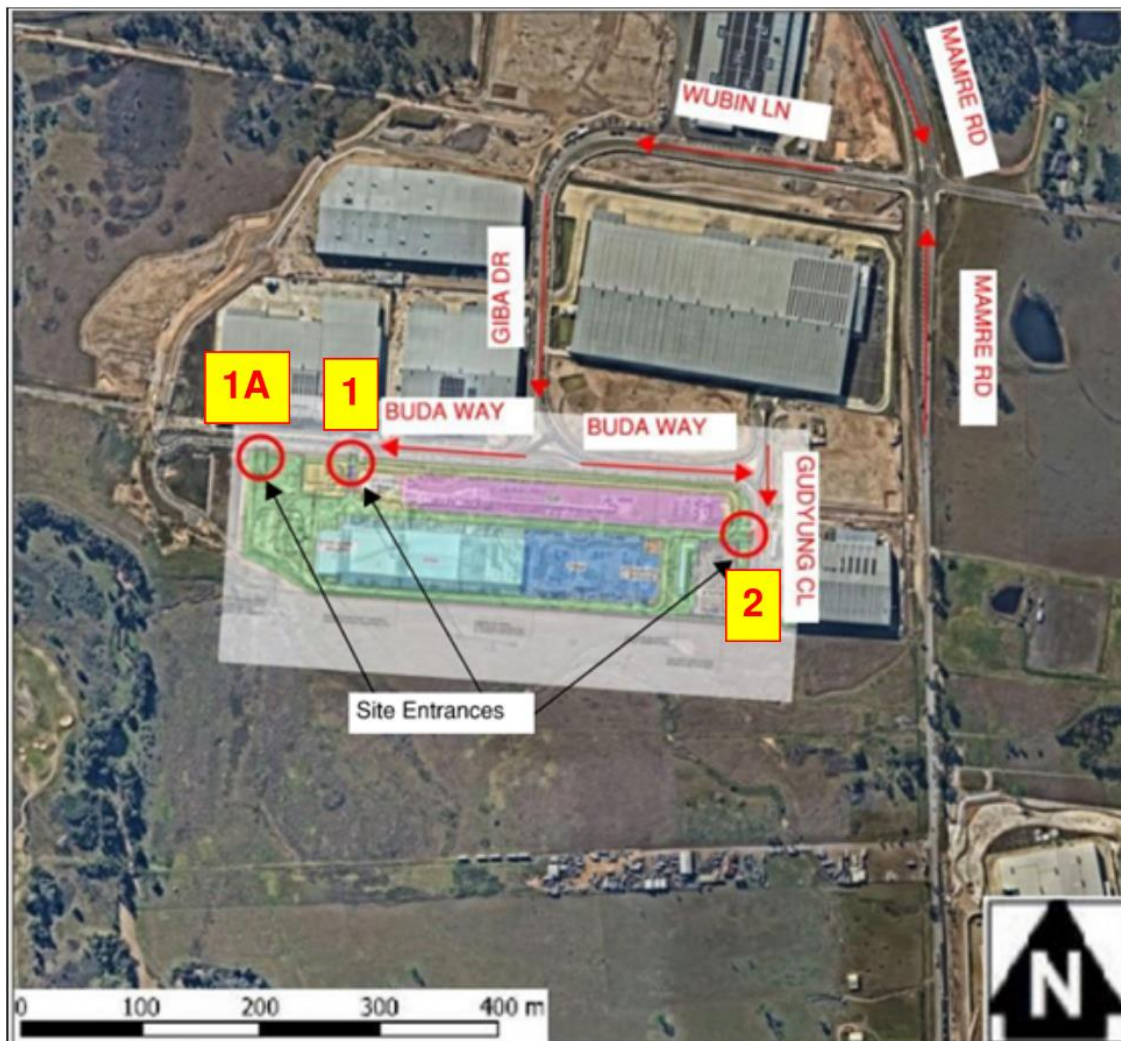


Figure 2: Site access (Source: Nearmap)

2.4 Nearby Developments

Developments within the precinct that have been completed before the 11th of October 2024 include the following shown below in Figure 3.



Figure 3: Nearby developments (Source: Nearmap)

3. Existing Flood Behaviour

The site during operation can be affected by the following types of flooding:

- Mainstream flooding from South Creek to the west and the Unnamed Watercourse to the south (Backwater effects from the confluence with the much larger Hawkesbury River is not considered an issue as it is located at a sufficient distance downstream).
- Localised flooding due to short, intense rainfall.

The above flooding mechanisms can occur independently or more rarely, concurrently. When occurring concurrently, in most cases they will reach their peak at different times. It is however not uncommon to have overland flooding caused by intense rain just before floodwaters rise from the nearby creek.

3.1 Mainstream Flooding

To understand the existing flooding behaviour within the catchment where this site is located, existing flood risk management plans have been reviewed as listed below.

- Overland Flow Report – SSD 9522 – Mamre Road & Southern Link Road Orchard Hills NSW by Costin Roe Consulting, dated 16th May 2019
- Wianamatta South Creek Catchment Flood Study – Existing Conditions by Advisian, dated 23rd May 2022
- Wianamatta South Creek Catchment Flood Study – Cumulative Impact Assessment, by Advisian, dated 24th January 2023

3.1.1 Flood Studies

Flood levels and extents for the operational phase of the site are provided from the flood impact study titled “Overland Flow Report – SSD 9522 – Mamre Road & Southern Link Road Orchard Hills NSW” by Costin Roe Consulting, dated 16th May 2019. This study used a TUFLOW model to study the effects of the proposed YARDS landscape and development on the flooding behaviour of nearby South Creek.

Critical durations and hazard maps were extracted from the flood study titled “Wianamatta South Creek Catchment Flood Study – Existing Conditions” by Advisian, dated 23rd May 2022. This study used an XP-RAFTS hydraulic model with LiDAR topography data dated from 2019. This model was updated from the previous model in 2015. Hydrographs and time to peak flood were extracted from another study by Advisian titled “Wianamatta South Creek Catchment Flood Study – Cumulative Impact Assessment”, dated 24th January 2023.

3.1.2 Catchment Description

The location of the site lies adjacent to South Creek downstream of the confluence between South Creek and Kemps Creek. The catchment area leading into the confluence near the site

is approximately 172 sq.km or 17 200 ha. The catchment primarily comprises of rural residential properties with ongoing developments that include an airport currently under construction and some urban residential properties.

Catchment details are given below in Figure 4:

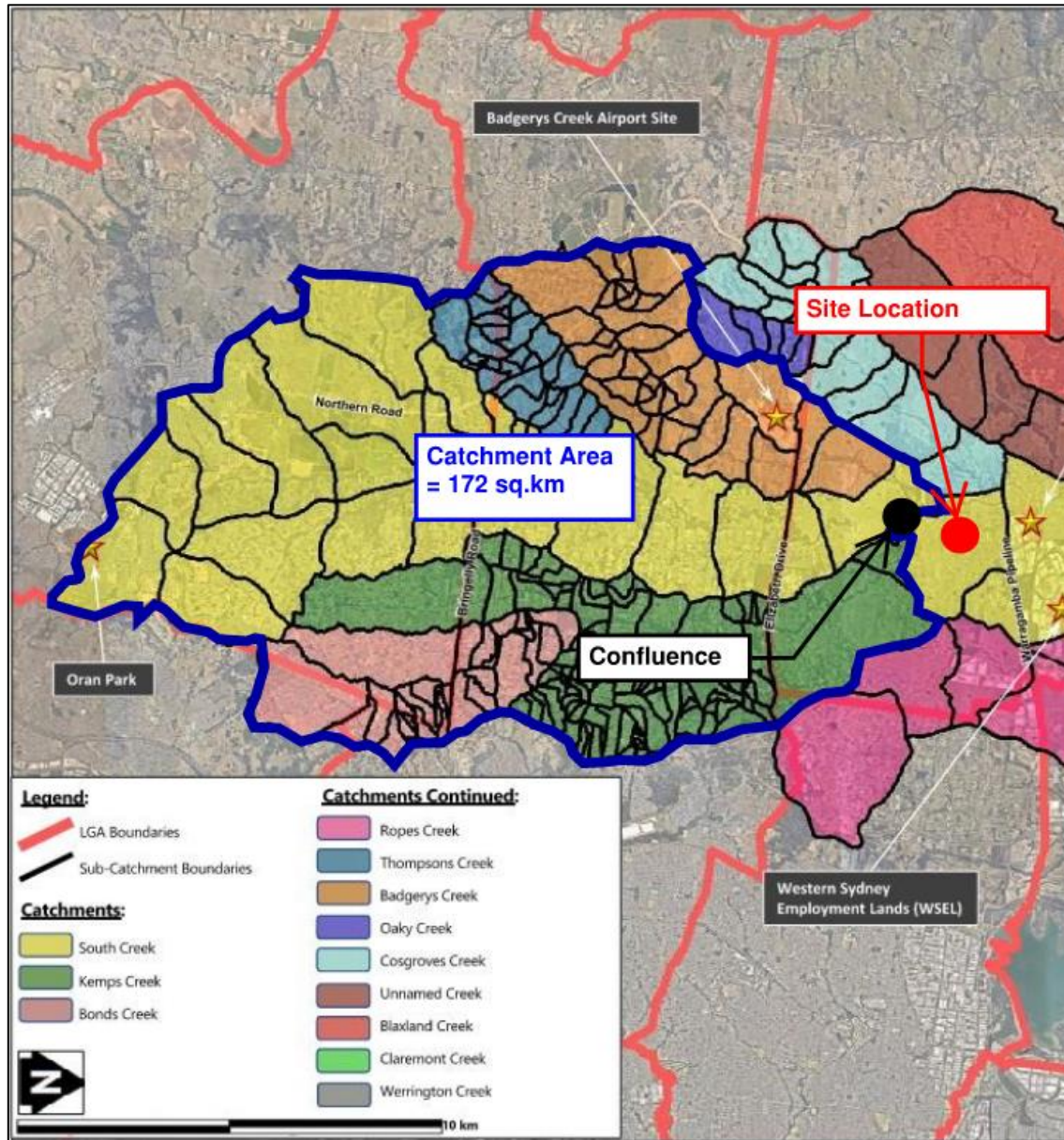


Figure 4: Catchment overview (Advisian, 2023)

Due to the location of the site next to an existing waterway, it is expected that the site would be affected by mainstream flooding of South Creek nearby. As the catchment area leading up to the site is large sized (172 sq.km), it is expected that mainstream flooding would most likely take place with low intensity rainfall over long time periods.

The critical duration (or time of concentration) for rainfall and runoff leading into the site were derived from the Section 5.2 of the Wianamatta South Creek Catchment Flood Study by

Advisian (2022), summarised in Table 3 below up to the Possible Maximum Flood (PMF) event:

Table 3: Time of Concentration

Recurrence Interval	5% AEP	1% AEP	PMF
Time of Concentration (h)	36	36	9

3.1.3 Flood Extents

As the site is part of a larger industrial development precinct known as “The YARDS, the site proposed flooding behaviours has been already investigated in Overland Flow Report – SSD 9522 – Mamre Road & Southern Link Road Orchard Hills NSW by Costin Roe Consulting, dated 16th May 2019.

According to The Overland Flow report by Costin Roe, the site is above the 1% AEP and 0.5% AEP flood level but would be partially inundated in the PMF event.

According to Overland Flow report, the flood extents for the 1% AEP event are given in Figure 5 below:

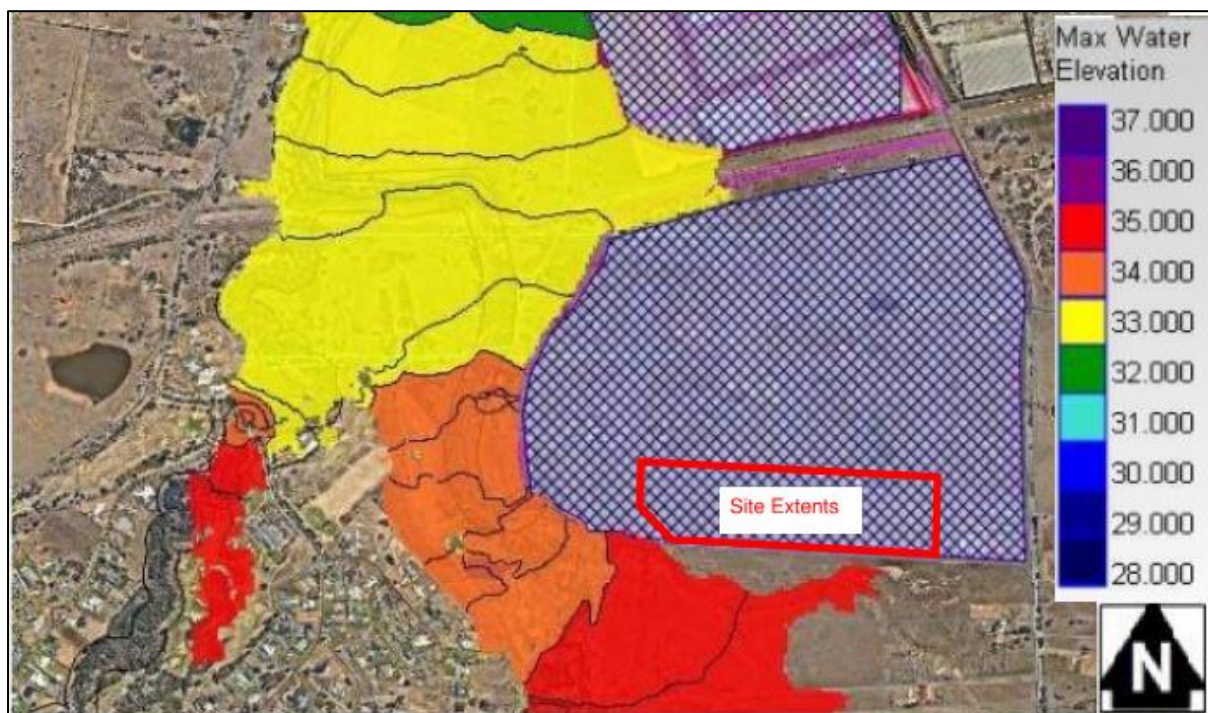


Figure 5: 1% AEP flood extents (Costin Roe, 2019)

Peak flood extents for the 0.5% AEP event are given in Figure 6 below:

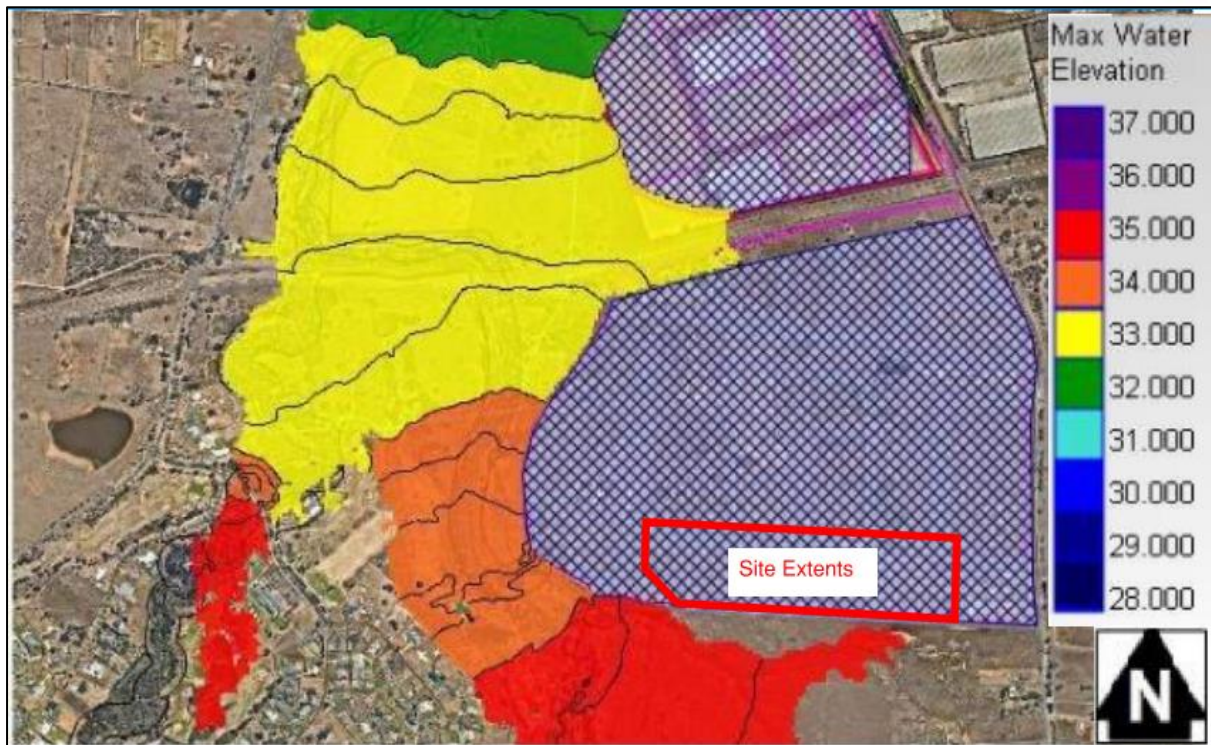


Figure 6: 0.5% AEP flood extents (Costin Roe, 2019)

Also, peak flood extents for the PMF event are given in Figure 7 below:

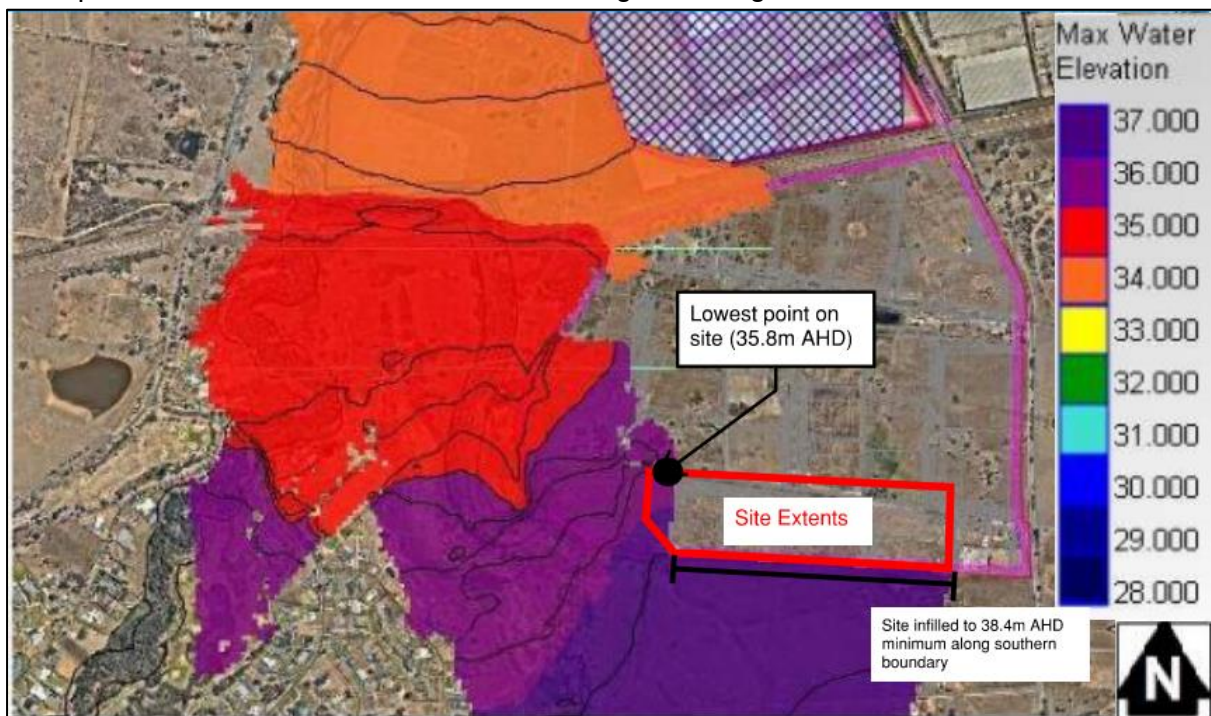


Figure 7: PMF flood extents (Costin Roe, 2019)

3.1.4 Flood Levels & Depths

Peak flood levels and depths on site for the 1% AEP, 0.5% AEP and PMF events are given in Table 4 below. The lowest point on the site is located at the northwestern end on a driveway and lies at an elevation of 36.3m AHD.

For the PMF event, although the peak flood level is at 37.3m AHD along the southern boundary, the site is infilled to a minimum elevation of 38.4m AHD along there and will not flood from the south. The flood level at the lowest point of the site is at 36.8m AHD, resulting in a maximum flood depth of 0.5 m at that point.

Table 4: Peak flood levels and depths

Recurrence Interval	1% AEP	0.5% AEP	PMF
Peak Level (m AHD)	35.3	35.5	37.3
Peak Depth (m)	0.0	0.0	0.5

3.1.5 Time to Peak

Hydrograph measurements have been made by Advisian (2023) at the nearest location downstream at Warragamba Pipeline, presented in Figure 8 and summarised in Table 5 below:

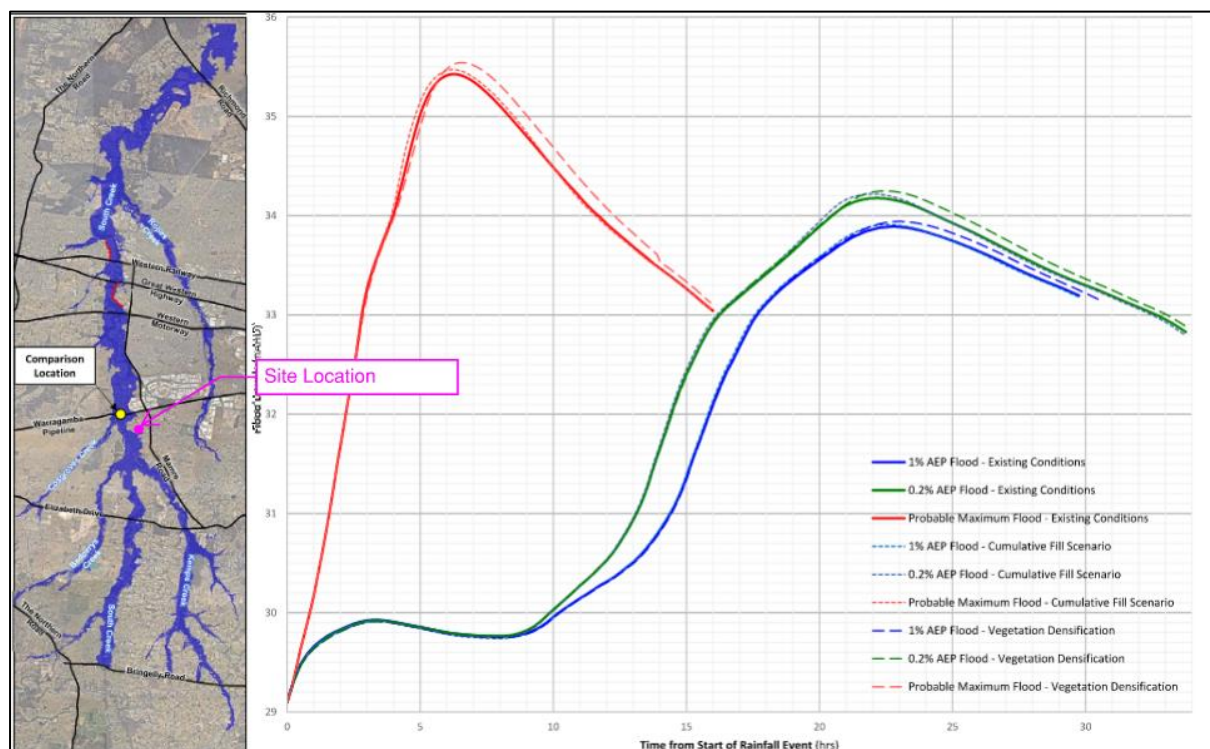


Figure 8: Time to peak flood graph (Advisian, 2023)

Table 5: Time to peak flood

Recurrence Interval	1% AEP	0.2% AEP	PMF
Time to Peak Flood (h)	23	22	6

3.2 Localised Flooding

Localised flooding on-site can result for high intensity, short duration storms and can result in flooding from overland flows. These are controlled by the following on-site measures (See Appendix C below for plans):

- Roof drains and downpipes (Refer to Arup Drawing No. SYD05-06-07_C-F-0010 for more details).
- Pavement drains and pipes along driveways (Refer to Arup Drawing No. SYD05-06-07_C-D-0092 for more details).
- Trench drains across driveways (Refer to Arup Drawing No. SYD05-06-07_C-D-0092 for more details).
- Swales along site boundaries (Refer to Arup Drawing No. SYD05-06-07_C-D-0091 for more details).
- On-site detention basins

4. Emergency Response Considerations

The main types of responses to a flood emergency are the following:

4.1 Evacuation

Evacuate to an area above the reach of floodwaters in the PMF. This is the preferred response as recommended by the SES and the DECC, provided that the risks of evacuating are deemed acceptable.

4.2 Shelter in Place

Shelter in place (SIP) within the site and wait until floodwaters have receded and the emergency has passed. SIP is to be considered an alternative to evacuation only when the risks of evacuating are higher than the risks of SIP. SIP requires flood-free access to a suitable shelter above the PMF level. The shelter must be protected from the weather, be structurally stable in a PMF and have sufficient floor area for all people likely to be on site at any one time. This is not the preferred response for this site as recommended by the SES and DECC and is only applicable if evacuation is impossible from the site which is not the case.

4.3 Training

Training for all occupants is to be conducted through a site induction led by the Flood Warden. This induction is to be undertaken by all new personnel starting work on the site. These include but are not limited to:

- Awareness and importance of this OFERP to all occupants
 - Nature of flooding risks to this site
 - Dangers of navigating floodwaters (e.g. adopting a “*if it’s flooded, forget it*” approach)
- Procedures for evacuating the site
 - Notifications of flood warnings and orders to evacuate the site
 - Assembly points and evacuation routes
- Drills to enforce evacuation procedures for all occupants

Extra training is to be provided to the Flood Warden and Operations Manager on the following:

- Conducting site inductions.
- Organising drills for all occupants
- Co-ordinating evacuation efforts during flood events

In addition, the Penrith SES will employ public education strategies to raise flood awareness to people within the locality of this site. These include but are not limited to:

- Dissemination of emergency kits, flood-related brochures, booklets and locally tailored flood action guides in flood liable areas, including this site.

- Talks (including public meetings and FloodSafe Community Information Nights) and visual displays (including photographs and video) oriented to the community
- Publicity given to this plan and to flood-orientated SES activities through local media outlets, including articles in local newspapers about the flood threat and appropriate responses

4.4 Emergency Response Classification

According to the Advisian Flood Study (2020), the area which the site lies within is considered to have “Rising Road Access” (RRA). This is because the site lies within the PMF extents and has road access outside of these extents. See Figure 9 below for more information.

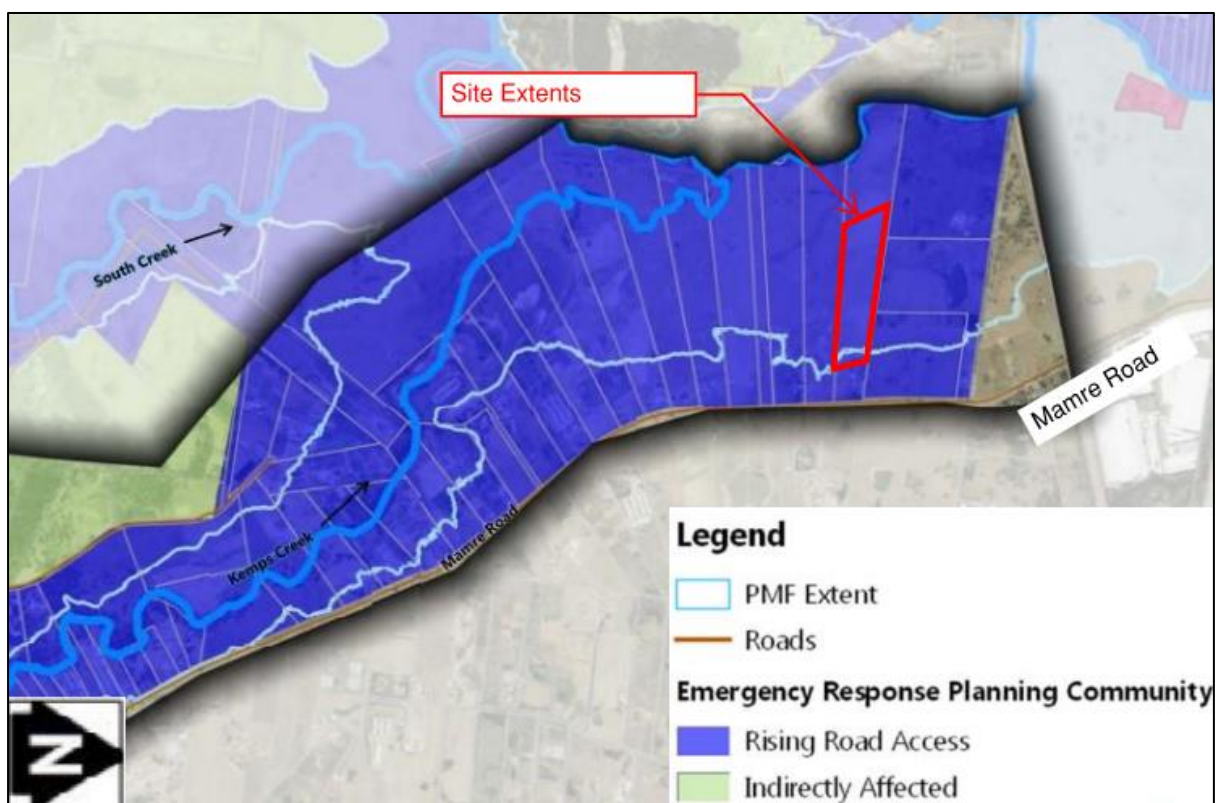


Figure 9: Emergency Response Classification (Advisian, 2020)

According to the Floodplain Risk Management Guideline by the DECC (2007), areas with RRA are defined as below:

“Areas with Rising Road Access (RRA) are those areas where access roads rising steadily uphill and away from the rising floodwaters. The community cannot be completely isolated before inundation reaches its maximum extent, even in the PMF. Evacuation can take place by vehicle or on foot along the road as floodwater advances. These communities contain low-lying areas from which people will be progressively evacuated to higher ground as the level of inundation increases. This inundation could be caused either by direct flooding from the river system or by localised flooding from creeks.”

Figure 10 below provides a visualisation of a site with RRA:

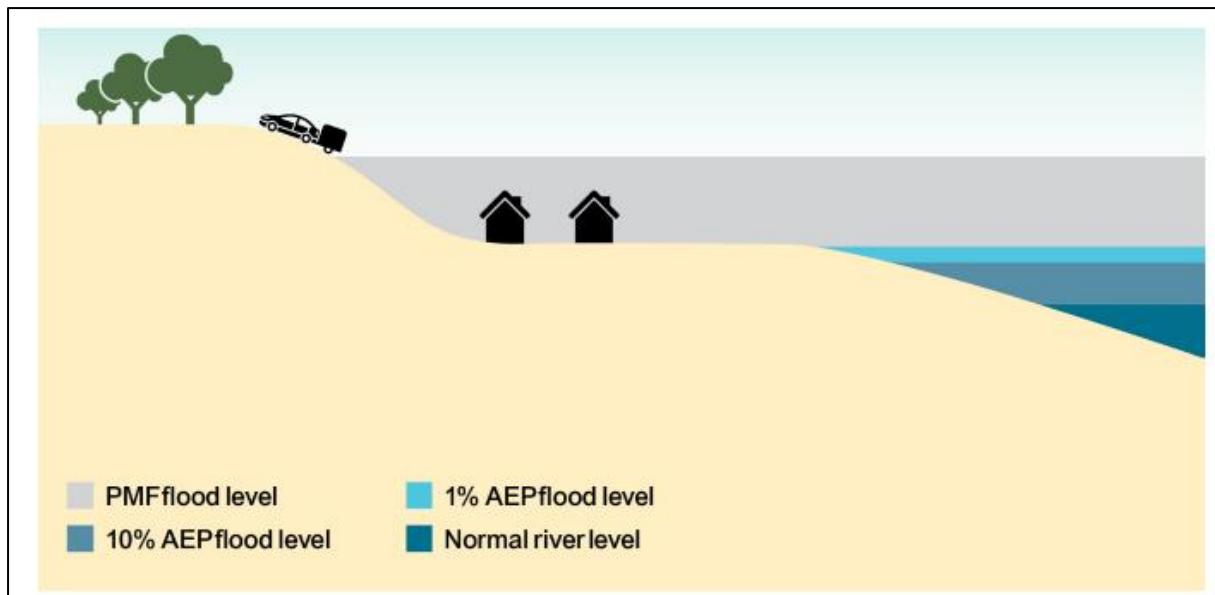


Figure 10: Rising Road Access property (DECC, 2007)

The DECC recommends the following courses of action for areas with RRA as defined in Table 6 below of their Floodplain Risk Management Guideline (2007), for flood events up to the Possible Maximum Flood (PMF).

Table 6: Emergency Response Table (DECC, 2007)

Classification	Response Required		
	Resupply	Rescue/Medivac	Evacuation
High Flood Island	Yes	Possibly	Possibly
Low Flood Island	No	Yes	Yes
Area with Rising Road Access	No	Possibly	Yes
Areas with Overland Escape Routes	No	Possibly	Yes
Low Trapped Perimeter	No	Yes	Yes
High Trapped Perimeter	Yes	Possibly	Possibly
Indirectly Affected Areas	Possibly	Possibly	Possibly

According to Table 6, the DECC recommends that an **evacuation of the site** should take place in the event of flooding.

4.5 Flood Mitigation Measures

The following actions should be implemented on-site during operation to limit impacts from flood events at and beyond the 1% AEP for the future works and upgrades

- All electrical equipment/machinery which cannot withstand water inundation within the warehouse or externally are to be raised above the 1% AEP flood level (35.3m AHD) for the ongoing and future works or upgrades
- The materials of any structures below the 1% AEP flood line are to be flood compatible (i.e. – masonry, steel etc.) for the ongoing and future works or upgrades

- Any risk and hazard areas or hazardous materials stored on site must be raised above the 1% AEP flood level plus 0.5m freeboard (35.8m AHD), bunding is not preferred.
- Ensure that any stockpiled materials do not have an increased risk of being washed off-site.
- Prepare an Operational Flood Evacuation and Emergency Response Plan (OFERP) for the construction and operation phases of the development to ensure all contractors and employees are aware and inducted into the plan.

5. Operational Flood Emergency Response Plan

5.1 Summary

As identified by the various sources, this site is unaffected by the 1% AEP and 0.5% AEP event flood but will be partially inundated at the western end by the PMF event flood. The depth of inundation on site will be up to 1.0 m at the northwestern end of the site.

The overall approach to the flood emergency response is to adopt the following as a precautionary measure and in line with other sites within the precinct:

- Evacuation of the site for flood events over the 1% AEP and up to the PMF. This evacuation procedure shall be conducted in the case of mainstream flooding from South Creek.
- Closure of the site and shutdown of all services inside in the case of inundation.

5.2 Monitoring before Emergencies

5.2.1 Weather

The Bureau of Meteorology (BoM) operates a nearby weather station named “BADGERYS CREEK AWS” at Badgerys Creek located approximately 8km south of the site. This weather station has a rain gauge that can provide rainfall measurements at 10-minute intervals. The BoM can provide long-range forecasts for up to 7 days into the future for potential inclement weather.

5.2.2 Flood Levels

WaterNSW provides the monitoring of flood levels by a flood gauge by South Creek, at Elizabeth Drive, Badgerys Creek (Site number 212320, BOM reference 567070). The gauge records water level and rainfall and estimates flows based on a rating curve and is located approximately 7 km upstream from the site. The gauge has a catchment area of 88 sq.km, approximately half of the catchment area leading into the site. See Figure 11 below for its location relative to the site.

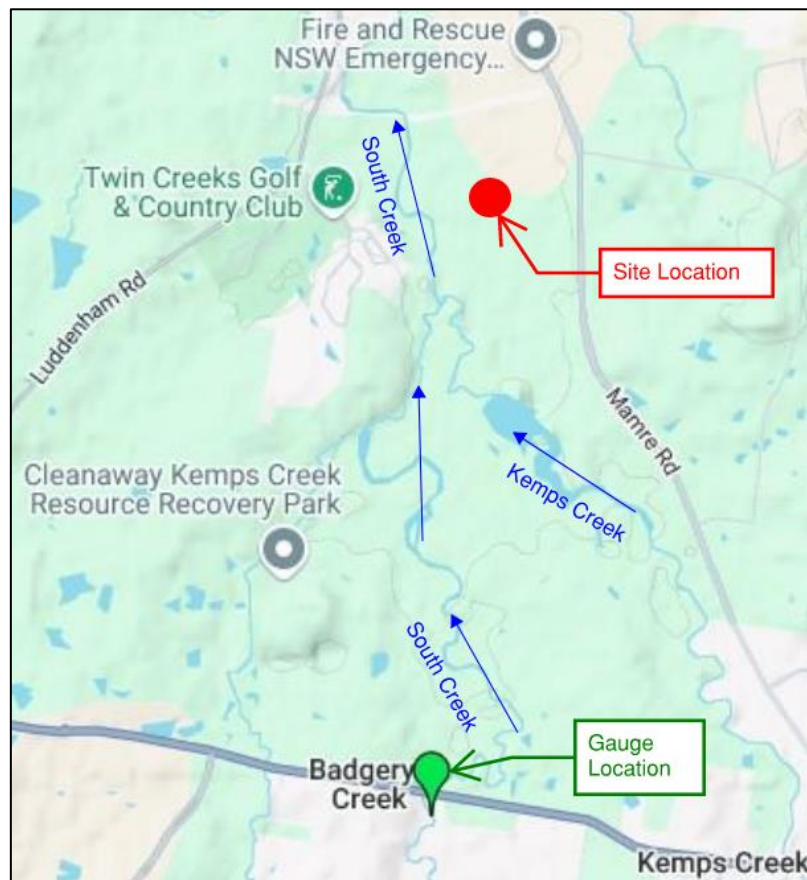


Figure 11: Flood gauge location (WaterNSW, 2024)

5.2.3 On-site monitoring

The following will be provided on-site to monitor flood activity within the immediate vicinity:

- On-site rain gauges
- The site security CCTV cameras on-site to monitor nearby streams outside.

5.3 Alert before emergencies

The following alerts are to be sent out to the area surrounding the site:

5.3.1 Flood Watch

The BoM can provide a preliminary warning for weather systems that are likely to produce flooding of the site a few days in advance. The level of flooding is expected to be above a minor flooding level. The local Penrith Unit of the SES is responsible for issuing this alert to the area surrounding the site.

5.3.2 Flood Warning

The BoM can provide a more detailed warning to occupants of the site of imminent flooding of the area in the coming hours. These may include the following:

- Approximate time of peak flood, based on BoM forecasts
- Approximate location of peak flood, based on BoM forecasts
- Approximate level of peak flood, based on BoM forecasts
- Community/subdivision specific areas impacted with the Penrith LGA.

The following will trigger a flood warning based on nearby weather and stream data:

- 20 mm in 30 minutes recorded in the on-site rain gauge or nearby weather station.
- Flood level of 32.0 m AHD recorded at the on-site flood gauge
- Moderate (Level 1) flood warning recorded at the Elizabeth Drive flood gauge upstream, according to “Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 3.15” (BoM, 2024).

5.3.3 Flood Warning Time

The warning time given to the occupants of the site is defined by the time from the issuance of the flood warning to the time at which action must be taken. This time can vary depending on the intensity of the flood event on-site and upstream. During this time, it is advised that preparations for a potential evacuation should take place and be communicated to all occupants present on the site.

The following warning times are given below in Table 7:

Table 7: Flood warning time

Recurrence Interval	0.5% AEP	PMF
Flood Warning Time (h)	5.5	2

5.4 Action during Emergencies

During an official flood warning, the SES can issue further warnings to occupants of the site to take imminent action:

- **Prepare to Evacuate - Watch and Act:** Warns people that they need to prepare to evacuate so they can act quickly if evacuation is necessary. Flooding is likely to cut evacuation routes and potentially inundate property. This warning advises the safest actions for the community to take in a flood emergency.
- **Evacuate Now/Before - Emergency Warning:** Warns that lives and properties are at-risk due to dangerous flooding, and that people need to evacuate an area immediately or when instructed by emergency services. Flooding is likely to cut evacuation routes and inundate property. This warning advises people what to do if instructed to evacuate and where to go.

The following will also trigger an evacuation order based on nearby weather and stream data:

- 50 mm in 30 minutes or 70 mm in 1 hour of rain recorded in the on-site rain gauge or nearby weather station.

- Flood level of 33.8 m AHD recorded at the on-site flood gauge.
- Major (Level 2) flood warning recorded at the Elizabeth Drive flood gauge upstream, according to “Service Level Specification for Flood Forecasting and Warning Services for New South Wales – Version 3.15” (BoM, 2024).

5.4.1 Assembly Point

The assembly point is the place on site where all occupants and visitors should gather before the all clear to evacuate is given. Ideally the assembly point should be:

- Located away from the peak PMF flood extents
- Located on a high point on site away from overland flow paths and drainage infrastructure.

Figure 12 below provides a plan of the assembly point within the site and the recommended evacuation route out of the data centre.

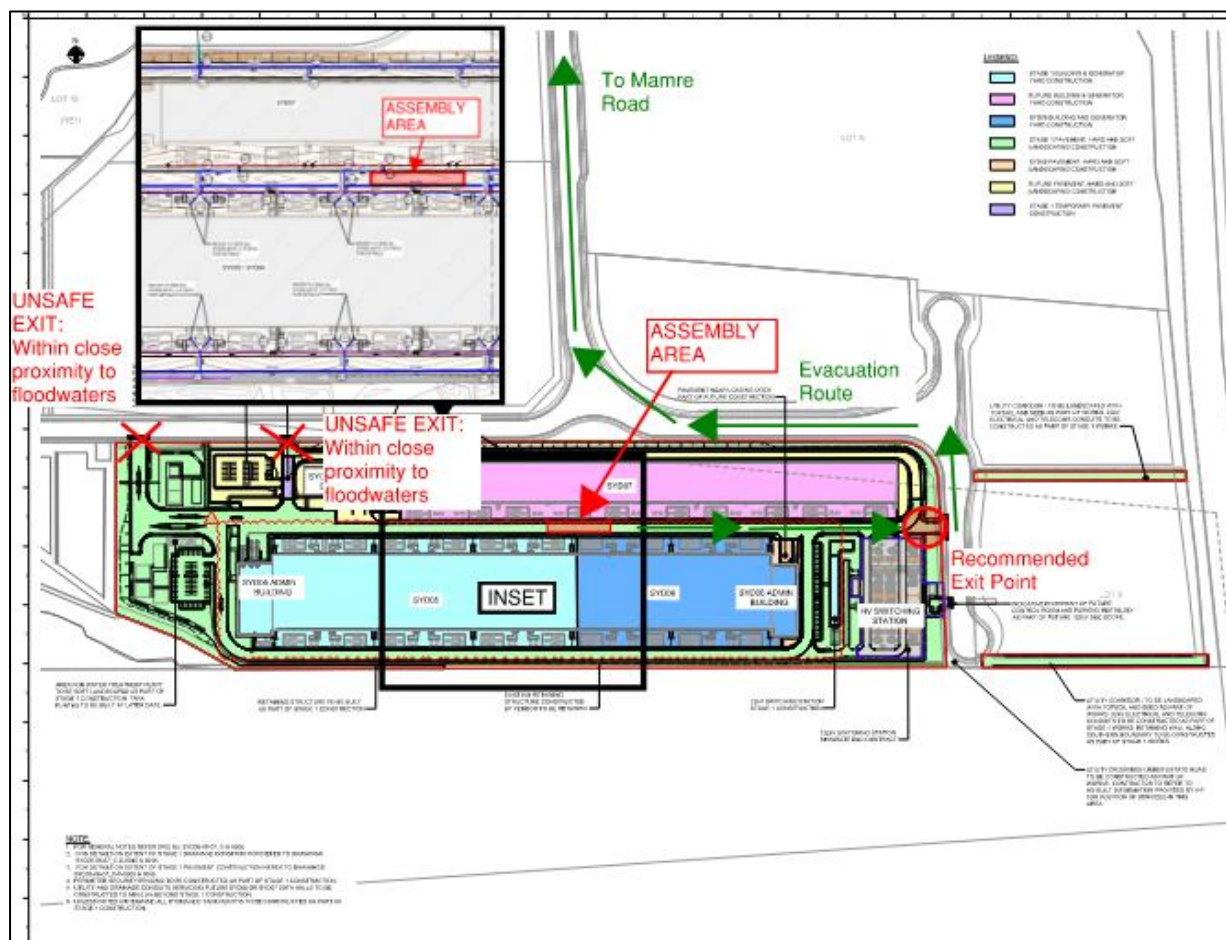


Figure 12: Assembly point and evacuation out of site (Arup, 2023)

5.4.2 Evacuation Route

The route starts by heading northbound along Mamre Road and then a right turn is to be made to head northeast bound along Erskine Park Rd. This then leads into the Western (M4) Motorway heading eastbound.

Figure 13 below provides an overview of the evacuation route to the nearest available SES corridor in accordance with the SES Flood Evacuation Route Guidelines for the Hawkesbury Nepean Valley.

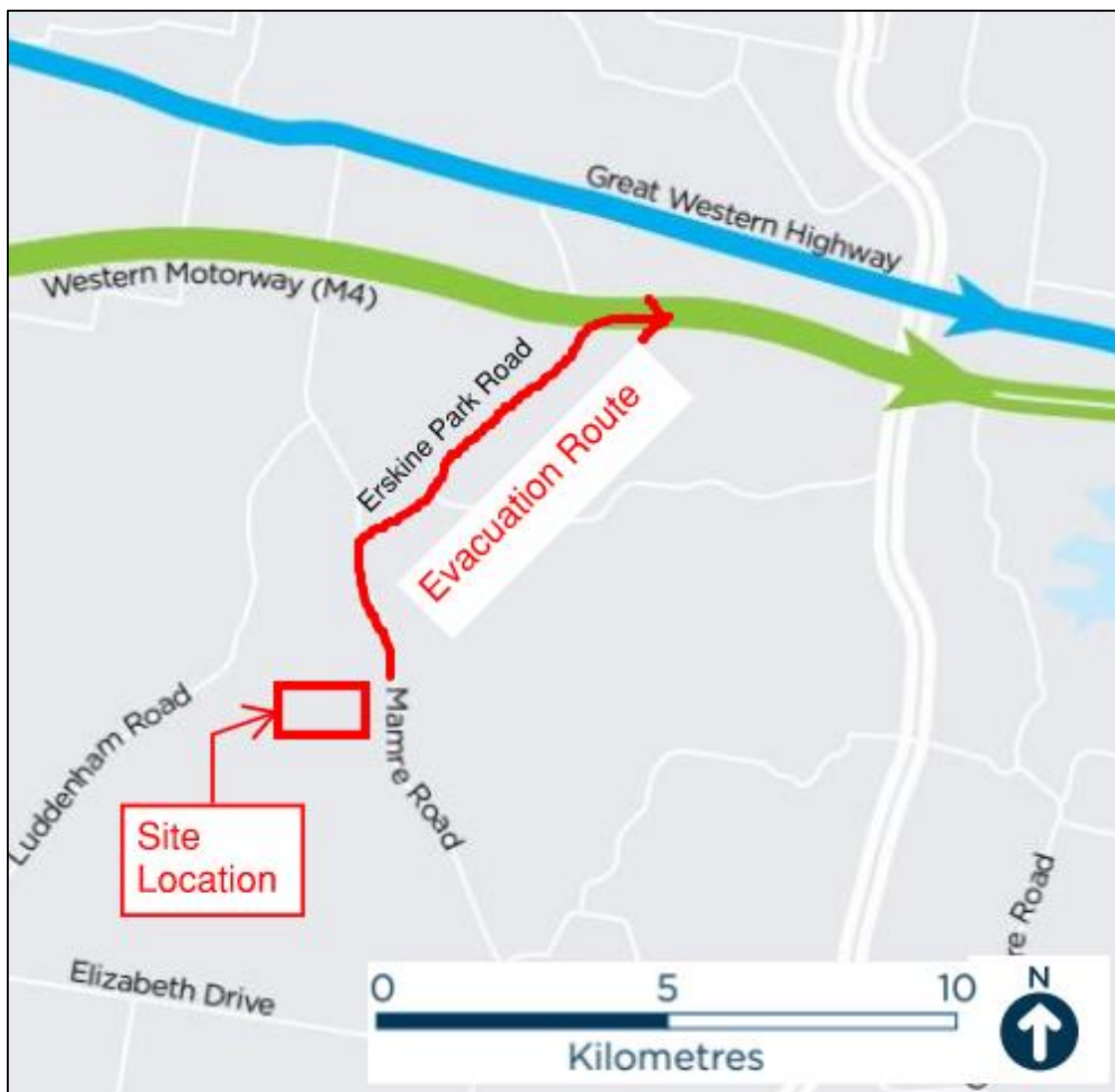


Figure 13: Evacuation route overview (SES, 2023)

Figure 14 provides a detailed guide to the evacuation route and any potential hazards faced along the way for the 1% AEP and PMF flood scenarios. Description of hazards are provided in Appendix B.

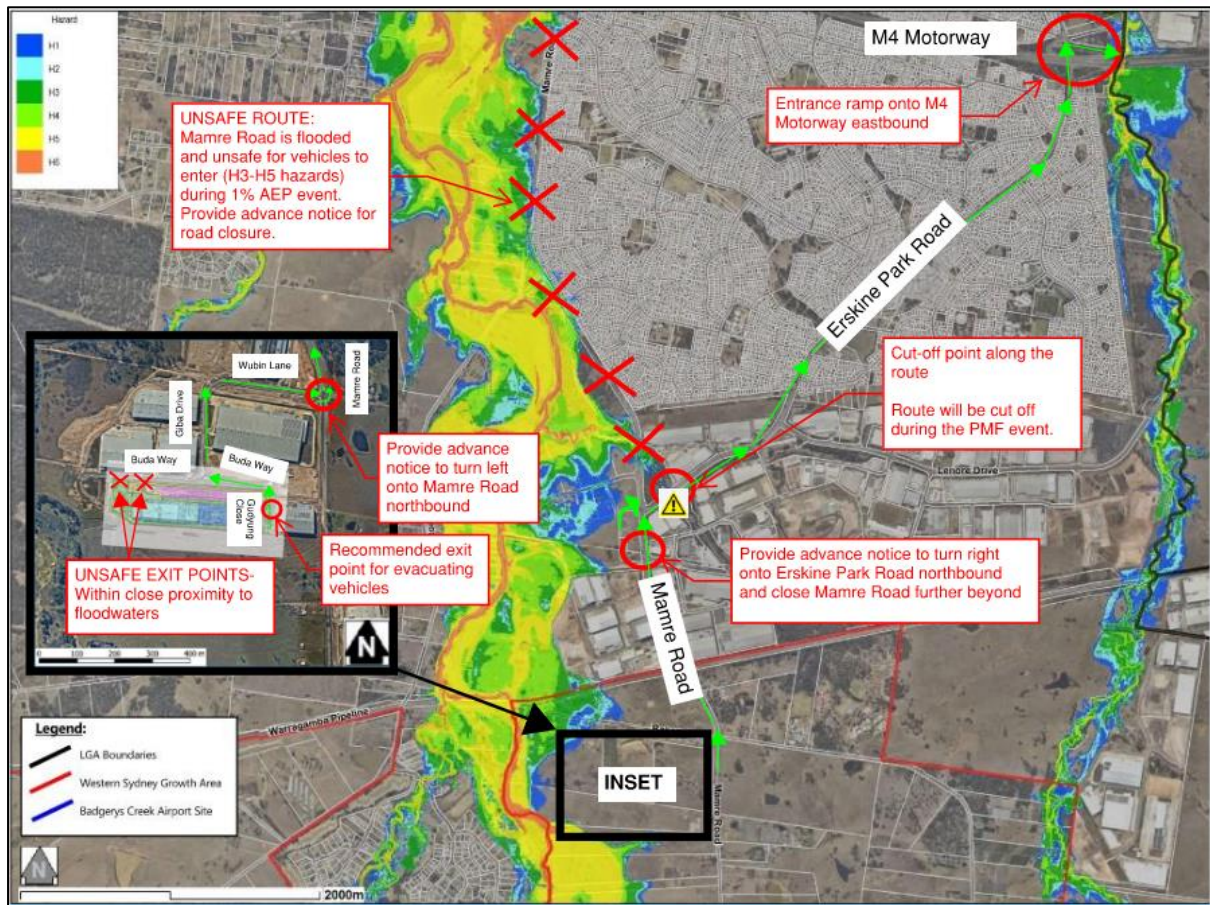


Figure 14: Evacuation route details (Advisian, 2022)

5.4.3 Evacuation Time

The available time during which occupants of the site can evacuate is determined by the time from the issuance of the evacuation order to the time of the closure of the evacuation route.

The following evacuation times are given below in Table 8 after which it is likely the evacuation route will be cut off:

Table 8: Available evacuation time

Recurrence Interval	0.5% AEP	PMF
Evacuation Time (h)	2	1

Assuming the worst-case scenario:

- All on-site parking spaces are occupied
- All roadside parking spaces are occupied (vehicles are parked 5 m apart)
- One occupant per vehicle
- Only one lane accessible to vehicles out of site

It is estimated that there would no more than 200 vehicles on-site at the time of flooding. The SES assumes a minimum evacuation rate of 600 cars per lane per hour. Based on this, it

would take around 20 minutes for all vehicles to leave the site. Once out of the site, assuming the vehicles are moving at half-speed due to traffic, it would take another 10 minutes for vehicles to make it on Erskine Park Road and beyond the cut-off point. This means that all occupants on site are able to make it onto the designated evacuation route in **30 minutes maximum**, which is within the 1 hour evacuation time window available during the PMF flood event.

5.4.4 Evacuation Route Cut-off

Along the evacuation route, it is possible that Erskine Park Road could become cut-off at the creek overpass at the elevation of 33.2m AHD (See Figure 14 above). This is most likely to happen during the PMF event. Table 9 below shows the status of the evacuation route with each design flood.

Table 9: Evacuation Route Status

Recurrence Interval	Peak Flood Level (m AHD)	Status of Evacuation Route
1% AEP	31.5	Not Impacted
0.5% AEP	31.7	Not Impacted
PMF	33.7	Cut-off (H4+ hazard present)

5.4.5 Refuge Locations (non-PMF event)

For non-PMF flood events where the evacuation route along Erskine Park Road is accessible, the following location can be used as refuge. These locations are located on high ground away from major floodways and are shown in Figure 15 below:

- Blackwell Public School
- Banks Public School
- St Clair Shopping Centre
- Clairgate Public School
- James Erskine Public School
- Erskine Park High School

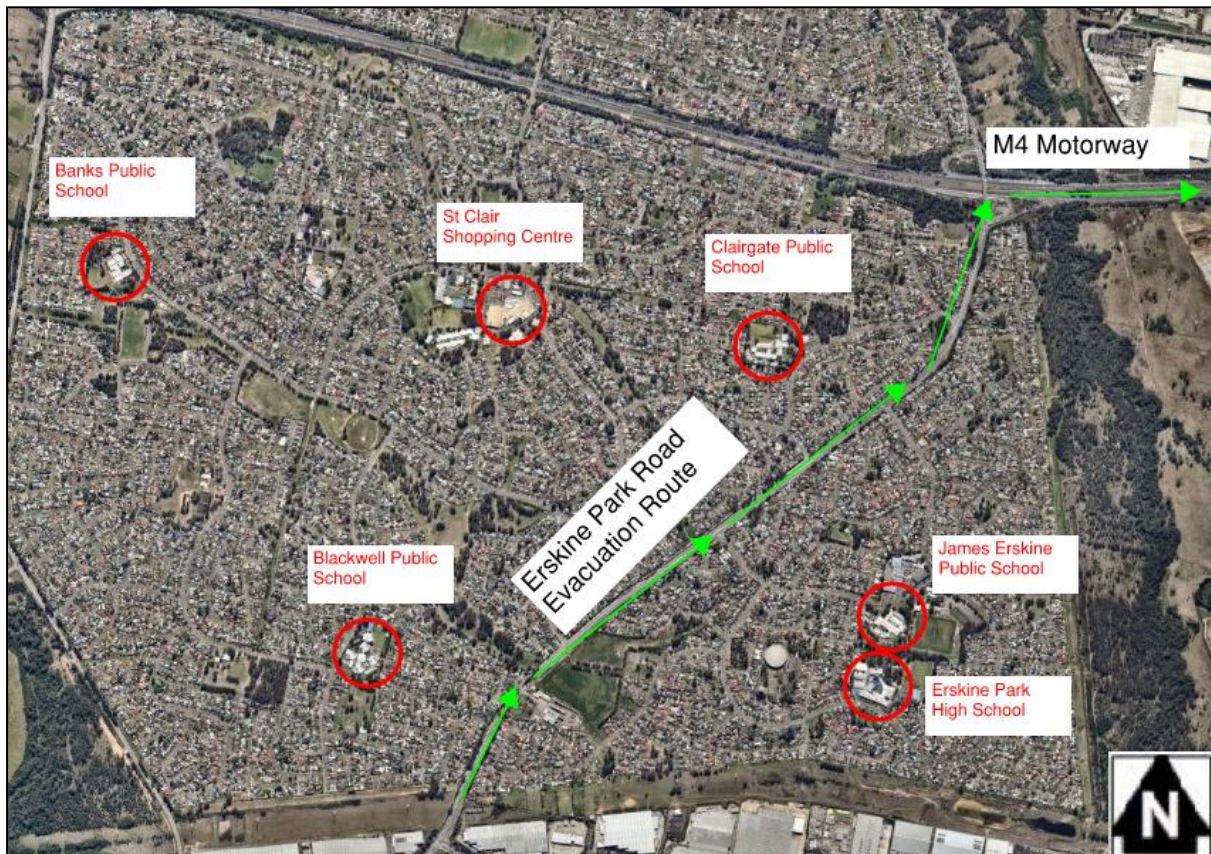


Figure 15: Refuge locations (non-PMF event) (Source: Nearmap)

5.4.6 Alternative Refuge Locations (PMF event)

In the case of a peak PMF flood event where the evacuation route along Erskine Park Road is cut-off, an alternative evacuation route along Bakers Lane and refuge locations are proposed. These locations are located on a ridge away from major floodways and are shown in Figure 16 below:

- Mamre Anglican School
- Trinity Catholic Primary School
- Emmaus Catholic College



Figure 16: Alternative refuge locations (PMF event) (Source: Nearmap)

5.5 After Emergencies

Once the flood levels recede below the trigger level and the danger posed by flooding has passed, the team will assess the following if it is safe to return to the site.

- Likelihood of flood damage to roads.
- Likelihood of flood damage to structures.
- Determine if flood waters have receded.
- Check any inundated or water affected power boxes and electrical equipment. To be conducted by an electrician.
- The power is to remain off until assessed by the electrician.
- Once it is deemed safe to return to site, the following are to be undertaken:
 - Check wastewater and water systems on site and schedule maintenance/servicing if required.
 - Any equipment, materials or debris moved by the flood water should be returned to rightful area or discarded if damaged beyond repair/use.

Additionally, the Penrith SES will issue the following:

- An “all clear” message which is to be conveyed in the same manner as a flood warning message.

6. Roles and Responsibilities

The roles and responsibilities are listed below in Table 10:

Table 10: Roles and responsibilities

Organisation/Position	Responsibilities
NSW State Emergency Service (SES)	• Issue flood warnings and evacuation orders to site personnel. • Maintain flood warning systems for areas affected by flooding. • Assist police in evacuation procedures and road closures.
Roads and Maritime Services (RMS)	• Determine road closures for state roads.
Penrith City Council	• Provide information to site occupants about safe evacuation routes and flooded roads. • Determine road closures for local roads
NSW Police	• Enforce evacuation orders issued by the SES. • Guide traffic along the evacuation corridors for a safe and orderly evacuation. • Close flooded roads and roads as ordered by the RMS and council.
Operations Manager	• Appoint flood wardens to be on site during operational hours. • Assist with the flood warden in evacuation procedures on site. • Maintain a register of all the personnel and visitors on site for assembly and ensure all persons are evacuated off the site. • Close the site down and shut off all services during the evacuation • Assess post-flooding impacts on site and determine whether to return to site or not.
Flood Warden	• Monitor and issue flood warnings from the BoM/SES to site occupants and visitors. • Lead evacuation procedures for all occupants and visitors on site. • Maintain communication with external stakeholders and emergency services (SES, council, police) as well as other Flood Wardens through the YARDS precinct during evacuation. • Ensure that the site flood management measures and infrastructure are functional • Lead site inductions on flood awareness and annual drills of the flood emergency response procedures • Participate in a review of this OFERP annually and following a flood event
First Aid Officer	• Prepare and maintain Flood Emergency Kit (SIP support systems),
Staff and Visitors	• Maintain calm and follow directions provided by the Flood Warden and Operational Manager.

7. Emergency Contacts

List of emergency contacts are below in Table 11:

Table 11: Emergency contacts

Contact Name	Telephone number	Address
Penrith City Council	(02) 4732 7777	601 High St, Penrith NSW 2750
NSW State Emergency Service (SES) – Penrith Unit	132 500	27 Fowler St, Claremont Meadows NSW 2747
Emergency Services General	000	N/A
Hospital – Nepean Hospital	(02) 4734 2000	Somerset St, Kingswood NSW 2747
NSW Police – St Marys Police Station	(02) 9677 7499	38-42 King St, St Marys NSW 2760
Fire and Rescue NSW – St. Marys Fire Station	(02) 9493 1077	1 Marsden Rd, St Marys NSW 2760
Bureau of Meteorology – NSW Flood Warning Centre	(02) 9296 1511	N/A
Additional Contact Numbers		
Flood Warden	Cem Otay 0422 246 528	1 Denison Street North Sydney NSW 2060
Operational Manager	Cem Otay 0422 246 528	1 Denison Street North Sydney NSW 2060
Occupants Health & Safety Manager	Ash Kumar 0439 954 866	1 Denison Street North Sydney NSW 2060

8. Conclusion

This Operational Flood Emergency Response Plan provides information and guidelines for evacuation procedures that need to be taken in the event of major flooding at Microsoft's Data Centre at 769 Mamre Road, Kemps Creek NSW.

8.1 Further studies

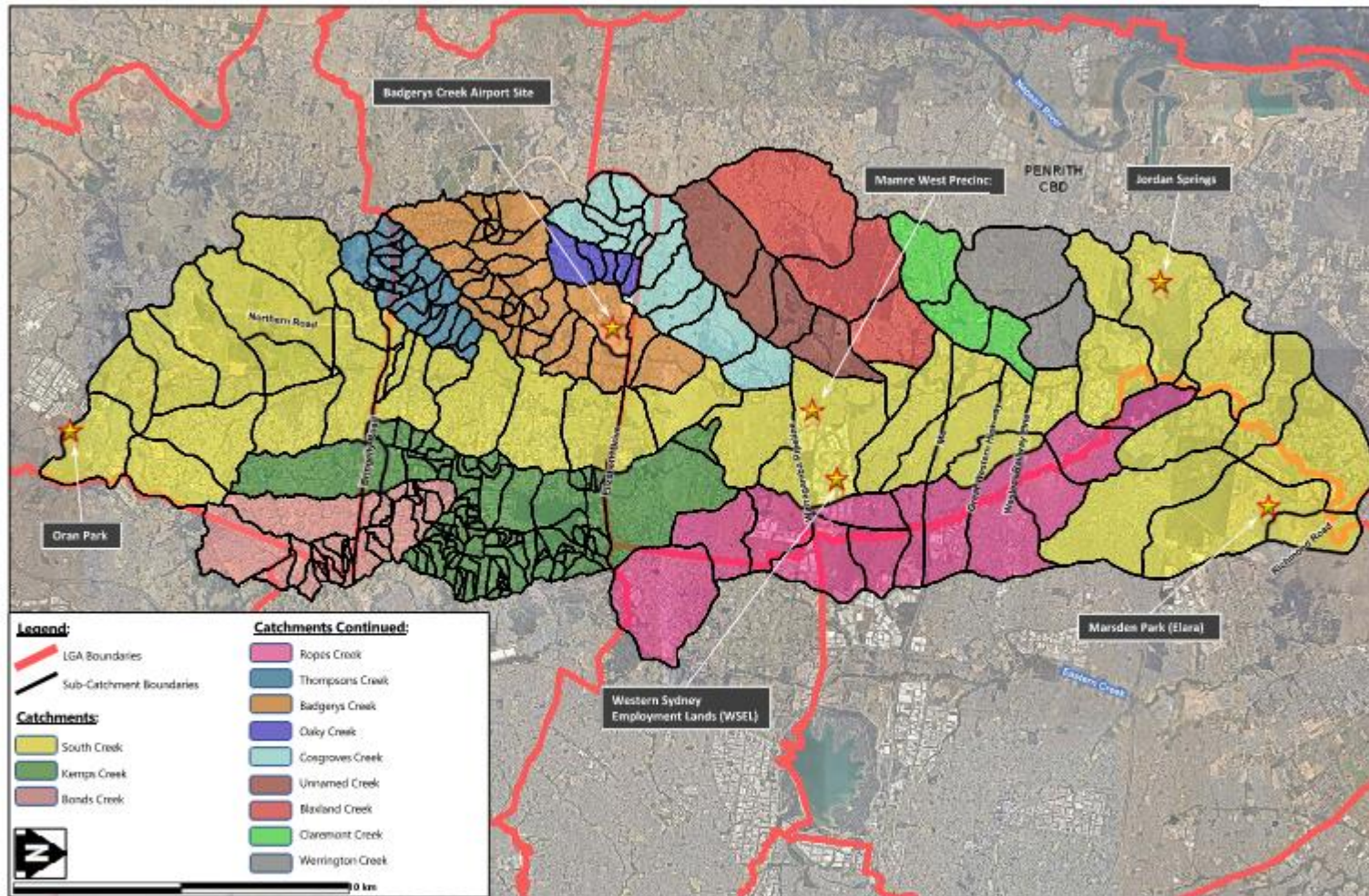
It is likely that more developments will be built near and/or upstream of the site in the future. The impacts of these developments on flood behaviour will also impact downstream sites including this one and will thus, require additional revisions of flood results and this OFERP for this site. This includes but are not limited to:

- Developments of additional lots within the YARDS precinct.
- Developments further south along Mamre Road and upstream along South Creek.
- Ongoing construction of Western Sydney International Airport upstream and its completion in the near future.

BRISBANE	Level 1, 51 Alfred Street, Fortitude Valley QLD 4006	P 07 3021 6600	E QLD-enquiries@vandermeer.com.au
CANBERRA	Level 9, 2 Phillip Law Street, Canberra ACT 2601	P 02 6243 4839	E ACT-enquiries@vandermeer.com.au
MELBOURNE	Level 6, 379 Collins Street, Melbourne VIC 3000	P 03 8614 5555	E VIC-enquiries@vandermeer.com.au
NEWCASTLE	Level 1, 17 Bolton Street, Newcastle NSW 2300	P 02 4910 4035	E NC-enquiries@vandermeer.com.au
SYDNEY	Level 6, 39 Chandos Street, St Leonards NSW 2065	P 02 9436 0433	E NSW-enquiries@vandermeer.com.au

Appendix A – Costin Roe & Advisian Flood Figures

FIGURE 2.2



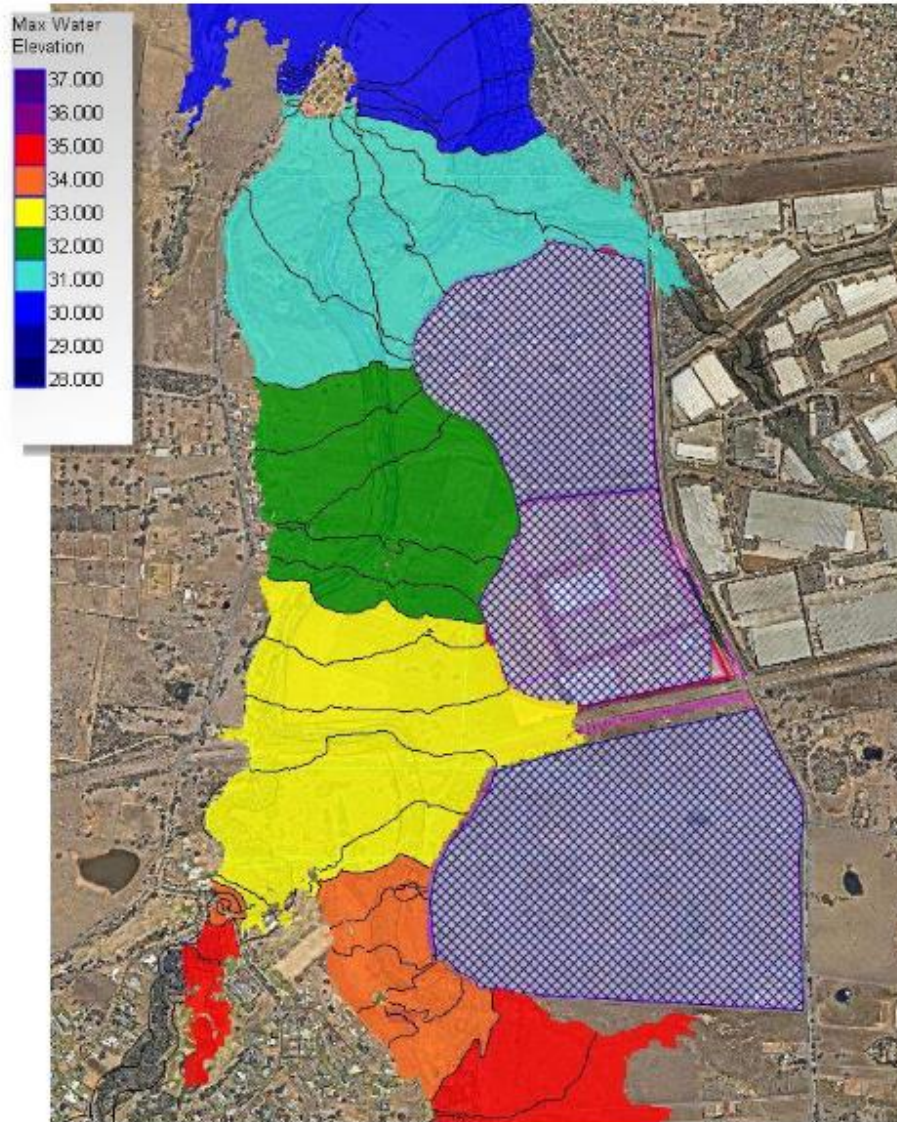


Figure B5 – 1% AEP Flood Levels (Post-Development)

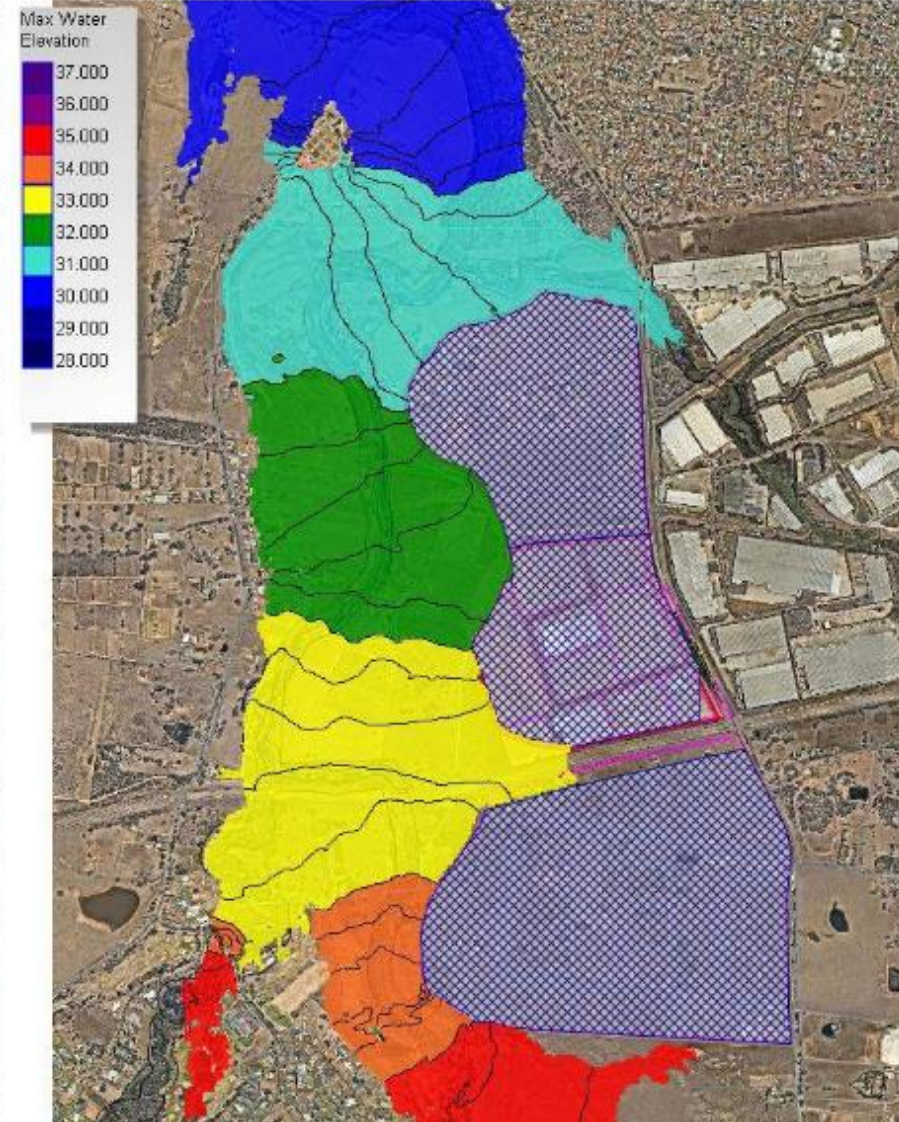


Figure B8 – 0.5% AEP Flood Levels (Post-Development)

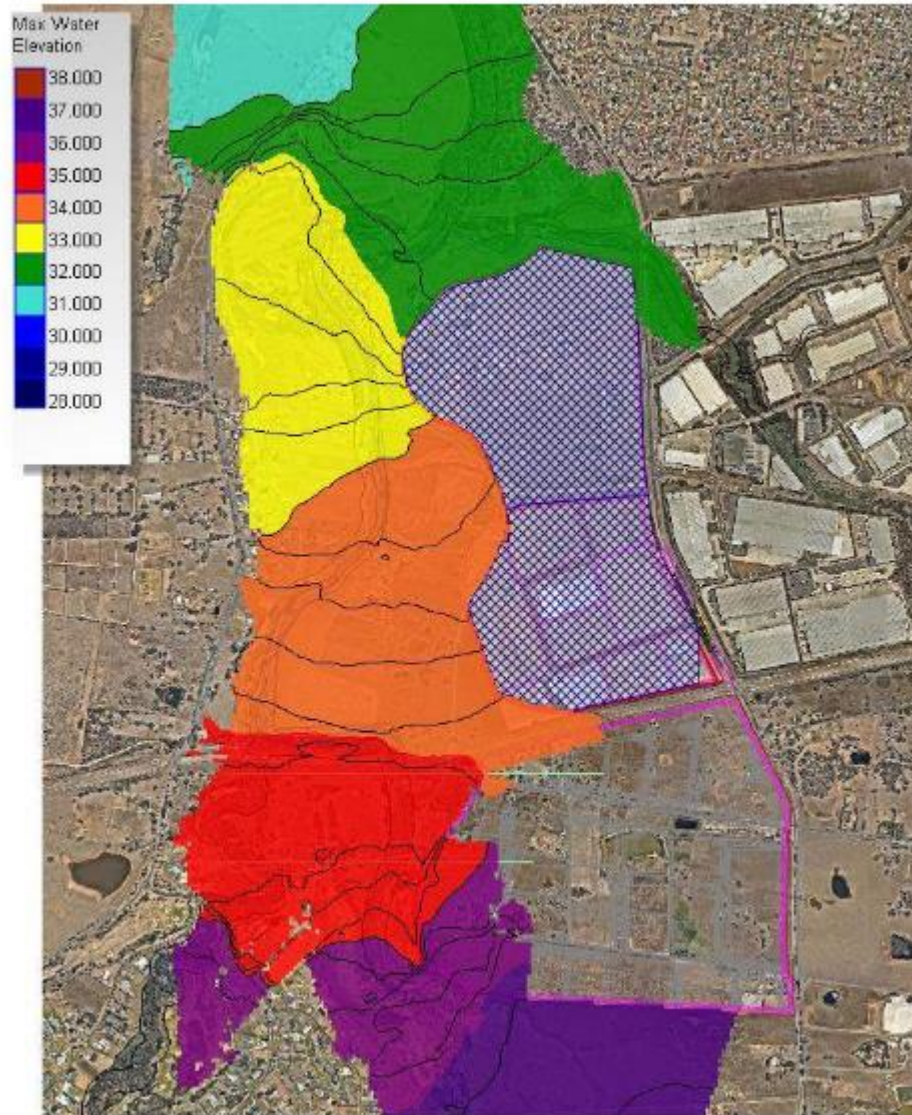


Figure B11 – PMF Flood Levels (Post-Development)

FIGURE 6.31

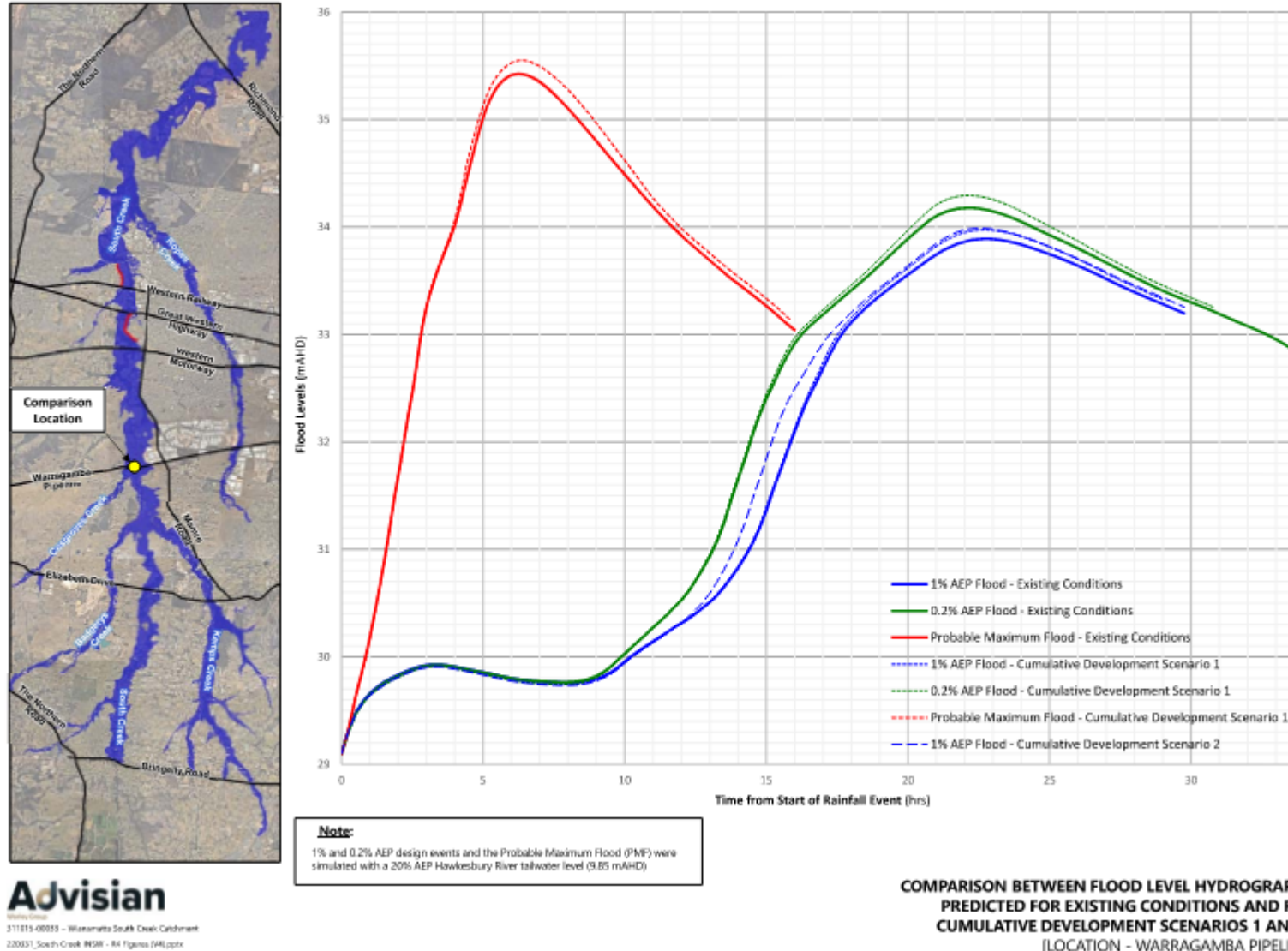
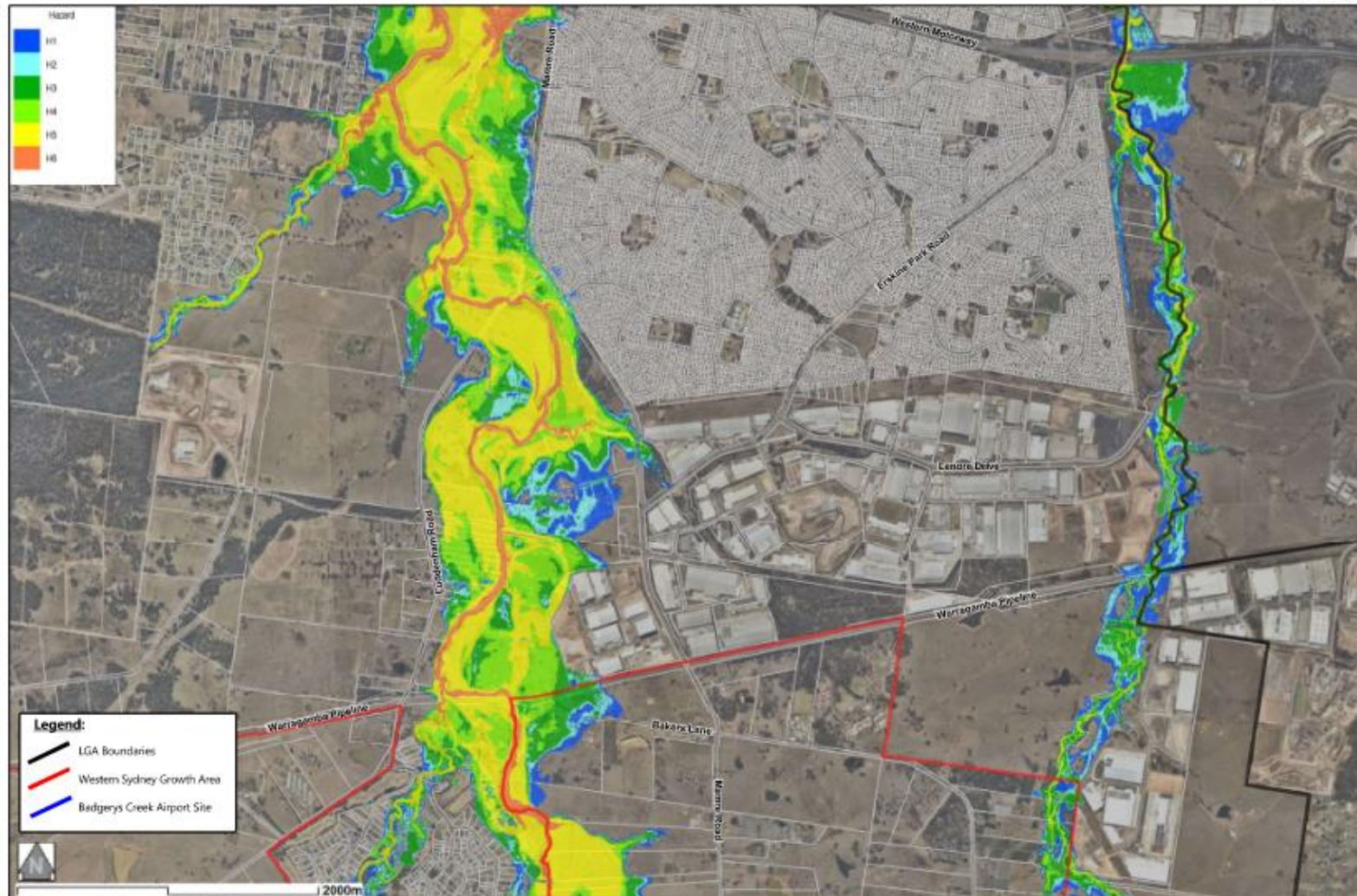


FIGURE 6.5



Advisian

311015-00055 - Warrumbidgee South Creek Catchment FS
311015-00055_F2 Figures and Appendices (Rev 1).pptx

**PROVISIONAL FLOOD HAZARDS AT THE
PEAK OF THE 1% AEP FLOOD
[BASE CASE - EXTENT 5 of 8]**

Appendix B – AR&R Flood Hazard Classification

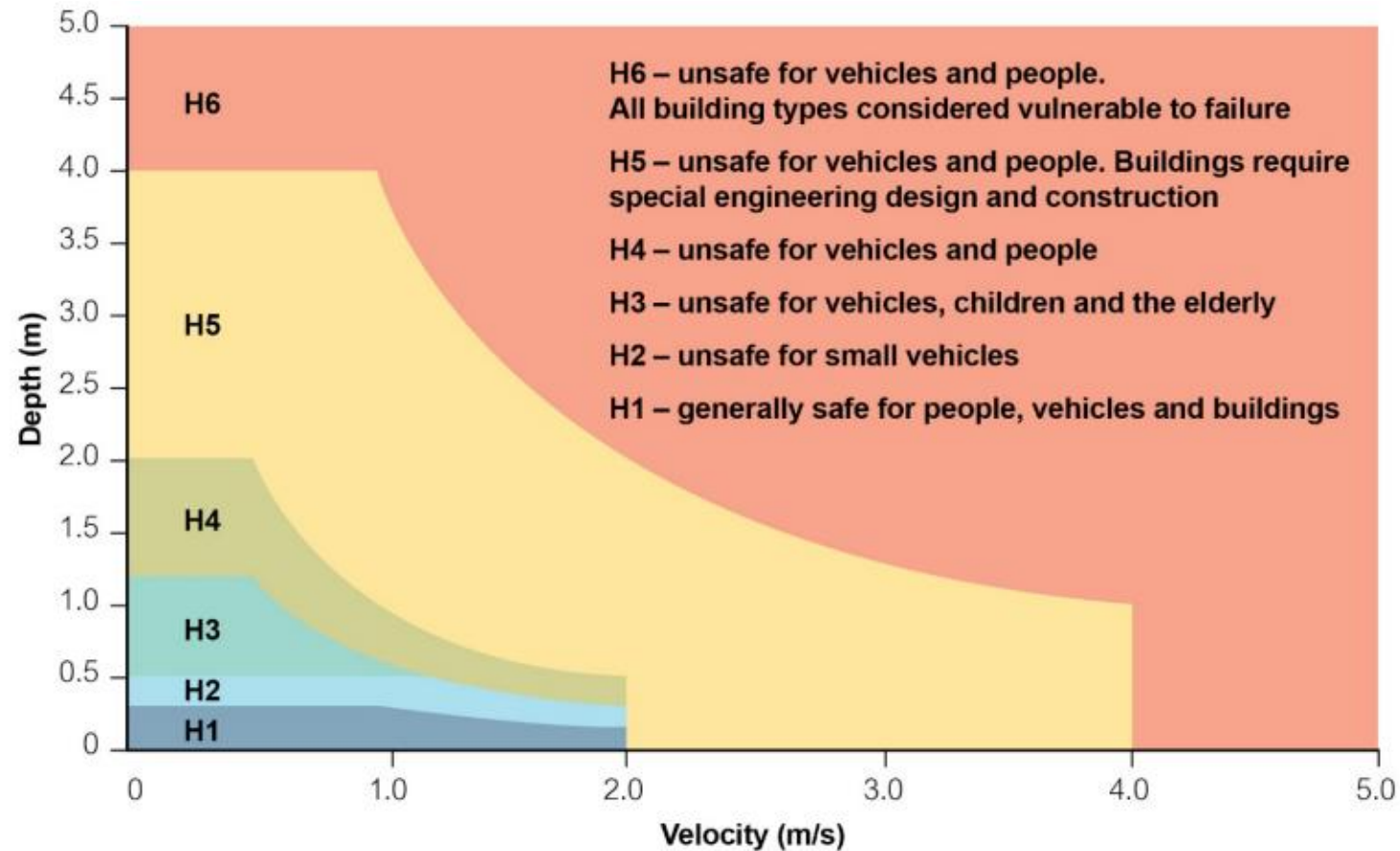
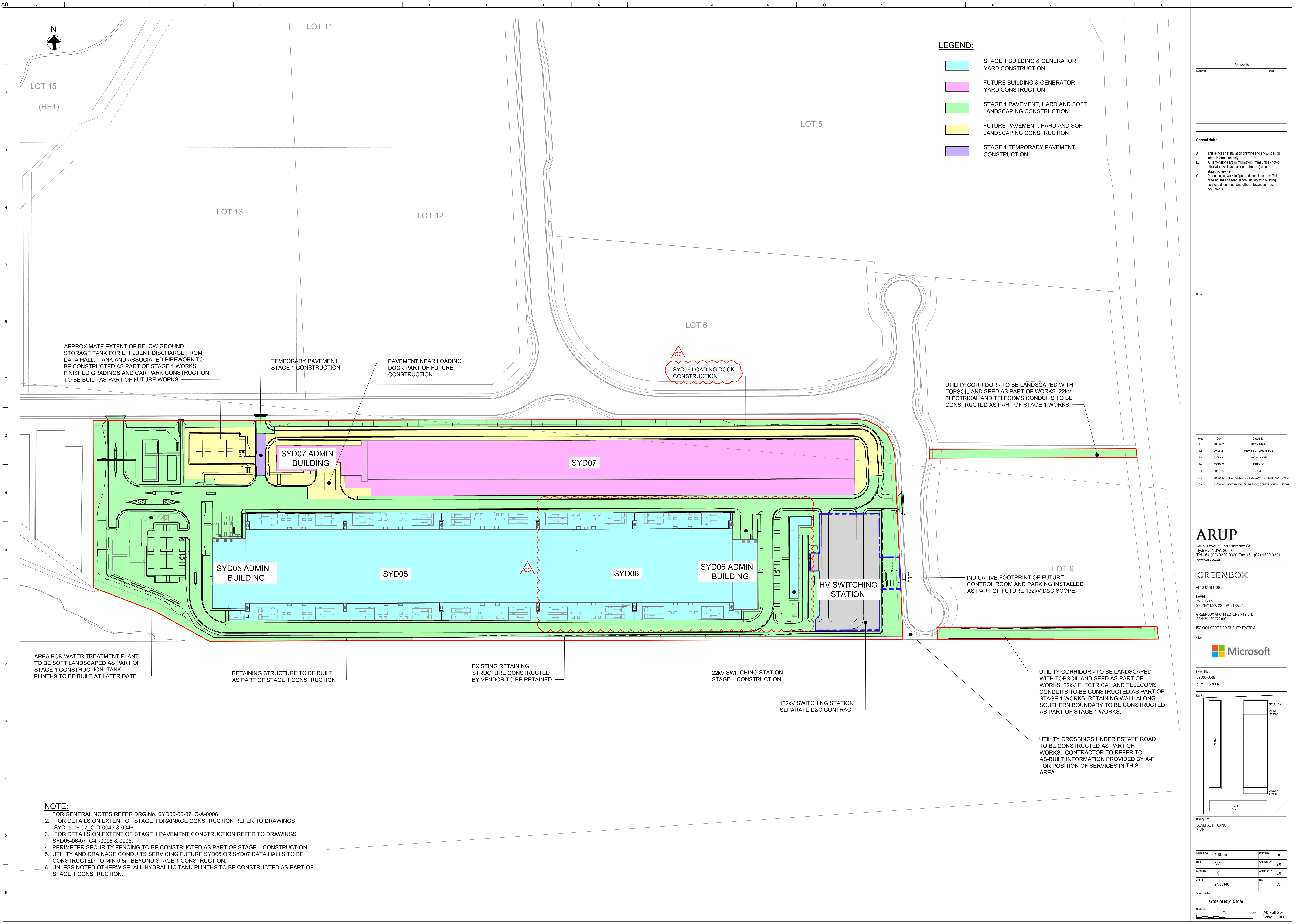


Figure 1 General flood hazard vulnerability curve

Source: Figure 6 AIDR 2017b

Appendix C – Arup Site Plans



NOTE:

1. FOR GENERAL NOTES REFER DRG No. SYD05-06-07_C-A-0006.
2. FOR DETAILS ON EXTENT OF STAGE 1 DRAINAGE CONSTRUCTION REFER TO DRAWINGS SYD05-06-07_C-D-0045 & 0046.
3. FOR DETAILS ON EXTENT OF STAGE 1 PAVEMENT CONSTRUCTION REFER TO DRAWINGS SYD05-06-07_C-P-0005 & 0006.
4. PERIMETER SECURITY FENCING TO BE CONSTRUCTED AS PART OF STAGE 1 CONSTRUCTION.
5. UTILITY AND DRAINAGE CONDUITS SERVICING FUTURE SYD06 OR SYD07 DATA HALLS TO BE CONSTRUCTED TO MIN 0.5m BEYOND STAGE 1 CONSTRUCTION.
6. UNLESS NOTED OTHERWISE, ALL HYDRAULIC TANK PLINTHS TO BE CONSTRUCTED AS PART OF STAGE 1 CONSTRUCTION.

- LEGEND:**
- STAGE 1 BUILDING & GENERATOR YARD CONSTRUCTION
 - FUTURE BUILDING & GENERATOR YARD CONSTRUCTION
 - STAGE 1 PAVEMENT, HARD AND SOFT LANDSCAPING CONSTRUCTION
 - FUTURE PAVEMENT, HARD AND SOFT LANDSCAPING CONSTRUCTION
 - STAGE 1 TEMPORARY PAVEMENT CONSTRUCTION

General Notes:

A. This is not an installation drawing and shows design intent information only.

B. All dimensions are in millimeters (mm) unless noted otherwise. All levels are in metres (m) unless stated otherwise.

C. Do not scale work to figures dimensions only. This drawing shall be read in conjunction with building services documents and other relevant contract documents.

Notes:

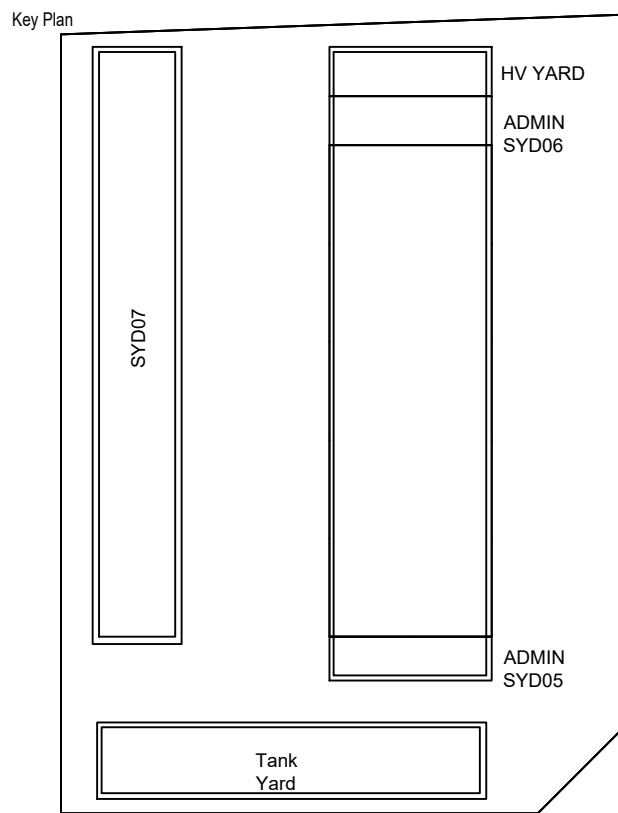
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T2	20/09/21	REVISED 100% ISSUE
T3	08/10/21	100% ISSUE
T4	13/10/22	PRE-IFC
C1	20/04/23	IFC
C2	28/09/23	IFC - UPDATES FOLLOWING VERIFICATION SI
C3	02/09/24	UPDATED TO INCLUDE 910KV CONSTRUCTION IN STAGE 1

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Microsoft

Project Title
SYD05-06-07
KEMPS CREEK



Drawing Title
GENERAL PHASING
PLAN

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Subsidiary	IFC	Approved By	EM
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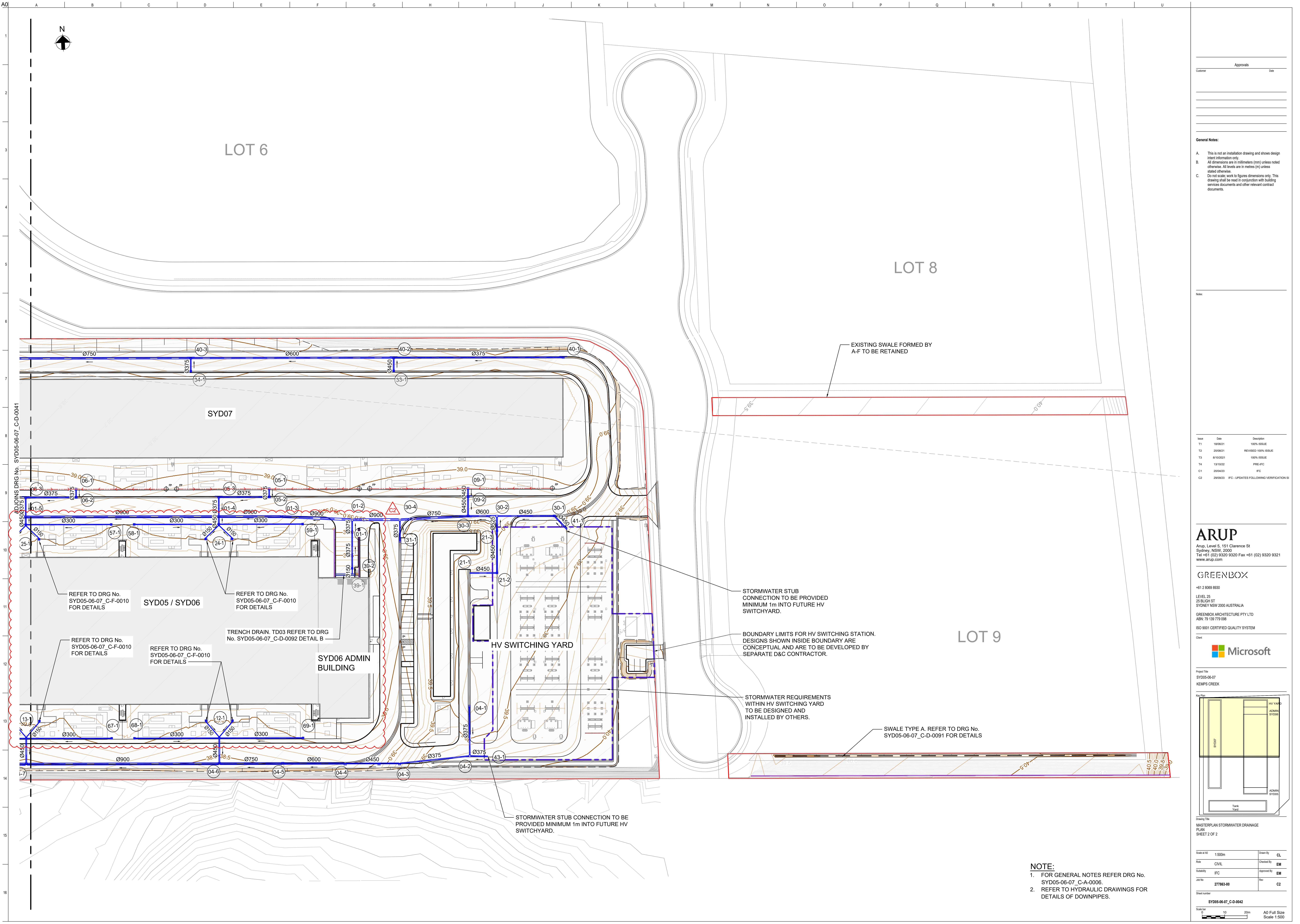
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NOTE:

1. FOR GENERAL NOTES REFER DRG No. SYD05-06-07_C-A-0006.
2. REFER TO HYDRAULIC DRAWINGS FOR DETAILS OF DOWNPIPES.



Approvals	
Customer	Date

- General Notes:
- A. This is not an installation drawing and shows design intent information only.
 - B. All dimensions are in millimeters (mm) unless noted otherwise. All levels are in metres (m) unless stated otherwise.
 - C. Do not scale: work to figures dimensions only. This drawing shall be read in conjunction with building services documents and other relevant contract documents.

Notes:

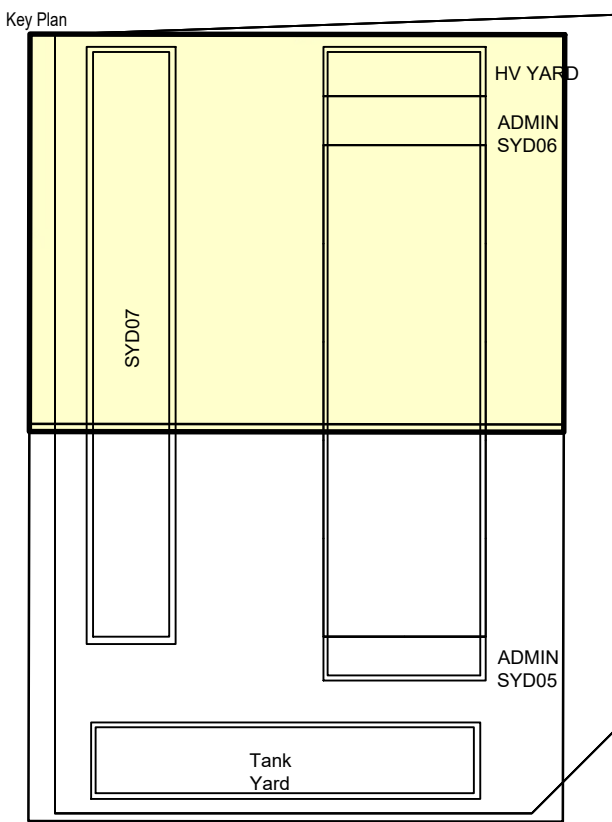
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T2	20/09/21	REVISED 100% ISSUE
T3	6/10/2021	100% ISSUE
T4	13/10/22	PRE-IFC
C1	20/04/23	IFC
C2	29/09/23	IFC - UPDATES FOLLOWING VERIFICATION SI

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ISO 9001 CERTIFIED QUALITY SYSTEM



Project Title
SYD05-06-07
KEMPS CREEK



Drawing Title
MASTERPLAN STORMWATER DRAINAGE
PLAN
SHEET 2 OF 2

Scale at A0	1:500m	Drawn By	CL
Role	CIVIL	Checked By	EM
Subsidiary	IFC	Approved By	EM
Job No	277883-00	Rev	C2

Sheet number
SYD05-06-07_C-D-0042
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- NOTE:**
- FOR GENERAL NOTES REFER DRG No. SYD05-06-07_C-A-0006.
 - REFER TO HYDRAULIC DRAWINGS FOR DETAILS OF DOWNPIPES.

Appendix C Landscape Management Plan



SYD05-06
LOT 2 MAMRE RD, KEMPS CREEK, NSW

OPERATIONAL LANDSCAPE MANAGEMENT PLAN



DOCUMENT STATUS

ISSUE	DESCRIPTION	SIGNATURE	DATE
REV. A	FOR REVIEW	DV	10.10.24
REV. B	FOR REVIEW	DV	20.11.24
REV. C	FOR REVIEW	DV	20.02.25



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5.	MONITORING AND MAINTENANCE MEASURES	PAGE 11
6.	PROTECTIVE MEASURES	PAGE 19
7.	MONITORING AND REPORTING	PAGE 20
8.	BUSHFIRE PROTECTION	PAGE 21
9.	APPENDIX A: LANDSCAPE DOCUMENTATION	PAGE 23
10.	APPENDIX B: MAINTENANCE AUDIT FORM	PAGE 61



This Operational Landscape Management Plan relates to the ongoing operation and management of the associated revegetation and landscaping for the industrial site during the construction of future stages and following construction of each stage.

This Operational Landscape Management Plan to manage the revegetation and landscaping for the proposed industrial development site at Lot 2 Mamre Rd, Kemps Creek, NSW has been prepared to meet the requirements of the DPIE Environmental Performance & Management Conditions.

The Landscape Management Plan (LMP) purpose is to manage the revegetation and landscaping works on-site. The LMP shall:

- a) detail the species to be planted on-site;
- b) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and
- c) ensure any plantings in the vicinity of Endeavour Energy electricity easements do not exceed a mature height of 3 metres;
- d) be consistent with the Applicant's Management and Mitigation Measures in the Development Consent.

BACKGROUND

The project is located in Kemps Creek, NSW and involves the development of warehouse and distribution uses at Lot 2 Mamre Rd. This Operational Landscape Management Plan relates to the ongoing Operation and Management of the associated revegetation and landscaping for the industrial site following construction. The plan sets out to highlight the tasks required, who is responsible and what are the timeframes that the management service is working to. Furthermore, although the Landscape Management Plan & Landscape Documentation are consistent, they should be read in conjunction with the SYD05-06-07 Kemps Creek Landscape Specification.



The approved landscape documentation is listed below:

L-01	COVERSHEET
L-02	OVERALL LANDSCAPE MASTERPLAN
L-03	LANDSCAPE CONCEPT PLAN 01
L-04	LANDSCAPE CONCEPT PLAN 02
L-05	LANDSCAPE CONCEPT PLAN 03
L-06	INTERNAL ROAD FRONT SETBACK (DETAIL PLAN)
L-07	LANDSCAPE SECTION A-A
L-08	LANDSCAPE SECTION B-B
L-09	LANDSCAPE SECTION C-C
L-10	LANDSCAPE SECTION D-D
L-11	LANDSCAPE SECTION E-E
L-12	LANDSCAPE SECTION F-F
L-13	SWITCHYARD: EAST ELEVATION
L-14	SWITCHYARD: SOUTH ELEVATION
L-15	INDICATIVE PLANT SCHEDULE
L-16	INDICATIVE PLANT SCHEDULE
L-17	TYPICAL SPECIFICATION & MAINTENANCE NOTES
L-18	SONGLINES
L-19	LANDSCAPE CONCEPT PLAN
L-20	ENTRY ARRIVAL LANDSCAPE
L-21	3D VIEW
L-22	APPENDIX A: LANDSCAPE DOCUMENTATION

OPERATION LANDSCAPE MANAGEMENT PLAN

The relevant areas pertaining to this Operational Landscape Management Plan refer to the planting areas for the SYD05-06. Detailed below is the approved landscape planting schedule detailing the plant growth size, planting densities, installation size and quantities as detailed in the individual schedules for each planting area on site:

Overall Planting Schedule:

CODE	BOTANICAL NAME	PRE-GROW POT SIZE	POT SIZE (NON PRE-GROW)	DENSITY	QUANTITY
Trees					
CUP	<i>Cupaniopsis anacardioides</i>	200L	400L	As Shown	25
WFL	<i>Waterhousea floribunda</i>	200L	400L	As Shown	34
AC	<i>Angophora costata</i>	200L	200L	As Shown	9
EE	<i>Eleacarpus eumundii</i>	200L	75L	As Shown	53
EMM	<i>Eucalyptus moluccana</i>	200L	200L	As Shown	43
EMA	<i>Eucalyptus maculata</i>	200L	200L	As Shown	12
ER	<i>Elaeocarpus reticulatus</i>	200L	75L	As Shown	124
MCWG	<i>Magnolia 'Coolwyn Gloss'</i>	200L	400L	As Shown	3
TL	<i>Tristaniopsis 'Luscious'</i>	200L	100L	As Shown	53
BA	<i>Brachychiton acerifolius</i>	200L	100L	As Shown	31
XAR	<i>Xanthorrhoea arborea</i>	200L	200L	As Shown	3
ET	<i>Eucalyptus tereticornis</i>	200L	75L	As Shown	46
BSE	<i>Banksia serrata</i>	200L	200L	As Shown	50
Shrubs					
DEX	<i>Doryanthes excelsa</i>	150mm	200mm	2/m ²	925
GRG	<i>Grevillea 'Robyn Gordon'</i>	150mm	150mm	2/m ²	2,510
GRP	<i>Grevillea 'Royal Poorinda'</i>	150mm	150mm	2/m ²	962
CC	<i>Callistemon citrinus</i>	150mm	200mm	2/m ²	1,903
SSF	<i>Syzygium 'Resilience'</i>	150mm	200mm	2/m ²	1,271
ACF	<i>Acacia floribunda</i>	150mm	300mm	2/m ²	848
WF	<i>Westringia fruticosa</i>	150mm	300mm	2/m ²	2,585
PMM	<i>Pittosporum 'Miss Muffet'</i>	150mm	300mm	2/m ²	2,581
Groundcovers					
LL	<i>Lomandra longifolia</i>	Tubestock	150mm	4/m ²	3,786
LT	<i>Lomandra longifolia 'Tanika'</i>	Tubestock	150mm	4/m ²	3,301
MP	<i>Myoporum parvifolium</i>	Tubestock	150mm	4/m ²	3,410
DR	<i>Dianella revoluta</i>	Tubestock	150mm	4/m ²	3,000
VH	<i>Viola hederacea</i>	Tubestock	150mm	4/m ²	4,010
CGL	<i>Carpobrotus glaucescens</i>	Tubestock	150mm	4/m ²	676

SOFTSCAPE METHODOLOGY

The following methodology highlights the measures and management schedules for the planting areas for the SYD05-06 to be undertaken by the engaged Landscape Contractor. Ongoing maintenance and management of the specified planting will be undertaken by a Landscape Contractor generally in accordance with the items detailed below, as well as additional works as required where identified during routine inspections. The Contractor is to keep a log book recording when and what maintenance work has been undertaken and what materials, including toxic materials have been used. The log book should be made available for inspection upon request.

Fertilising:

The intent is to replenish the soil with fertiliser appropriate for all the native species and garden beds across site to ensure plants have the required amount of nutrients to flourish. Fertiliser is to be applied as per the manufacturers specification during August (end of winter) and in March (beginning of Autumn), 6 months apart to ensure plants have time to replenish and flourish between applications. This will be completed as part of the maintenance program by the Landscape Contractor.

Herbicide & Pesticide Application:

The landscape management requires herbicide and pesticide to be applied to all plants to ensure no unwanted weeds or pests develop within the garden beds and on the plants themselves. The purpose of this process is monitor the continued health of plants and to prevent the on set of weeds that may impact the ability for the plant to establish and survive long term. Weeding is to occur around the base of the trees and planted areas at intervals outlined by the Landscape Contractor. All weeds, debris, clippings, etc. shall be removed off site as soon as possible by the Landscape Contractor. Herbicide, similar to the fertilising application is to be applied only as per the manufacturer's specification during both August and March, 6 Months apart to allow the plant material to flourish where possible. As per the Landscape Specifications, a biological control test is recommended as a first trial approach. If this control is unsuccessful, herbicides that are NATSPEC approved may be used.

In relation to Pesticide this aims to respond to all occurrences of insect attack, pests or disease amongst the plant material to ensure the plant is not hindered in growth or visual impact. Pesticide application is to be applied only as per the manufacturer's specification during Spring however plants are to be continually monitored during other inspections and work time frames to ensure no diseases are become present.

Horticultural Work & Inspection

The purpose for Horticultural work is to undertake inspections of all plants within garden beds and tree planting. These inspections aim to monitor plant health, tree stakes, hedging, weed control, litter collection, pruning and damage due to vandalism to all plant stock. In relation to pruning work shall be implemented to maintain dense foliage and encourage suitable growth habits. Any branches overhanging or obstructing pathways and roads shall be removed as directed by the Data Centre Operations Manager (DCOM). Furthermore, underpruning of trees is to be undertaken in areas that require maximised sight lines for security camera view preservation, CPTED and traffic management requirements. Underpruning promotes an elevated crown and clear stem to allow for a clear line of sight through/under the tree. This is applicable for all trees located in close proximity to site entrances, roads, carparks, and around security cameras.

Shrub planting has been proposed to not exceed 3m within close proximity of the substation however should be monitored and pruned where necessary if they exceed this expectation. Furthermore, pruning in accordance with Endeavour Energy requirements should be undertaken for any branches/tree canopies that are within 3m of powerlines or electrical easements.

Monitoring of plants is required to ensure all plants are showing signs of good health and vigour. In regards to vandalism and replacements, all plants that have failed, been damaged or stolen and mulch that has been removed or eroded during the Defects Liability Period due to inadequate or incorrect maintenance and supervision by the Landscape Contractor, are to be replaced at the Landscape Contractors own expense. Plants lost due to vandalism or theft during the Maintenance Period, beyond the control of the Landscape Contractor, are to be replaced at the Client's expense. The Landscape Contractor shall be responsible for theft, vandalism and willful damage up to the date of the Defect's Warranty Period as per the maintenance contract.

The general horticultural work and inspection is to be undertaken twice a month throughout the year to ensure that each of the tasks highlighted above are ongoing in order for plants to flourish and the design intent of the documentation to be maintained.

Mulching

The intent is to ensure that garden beds are installed with 75mm depth of mulch as specified in the landscape documentation to retain moisture in soil, maintain soil temperature and suppress weeds where required. The landscape management for mulching also includes reinstating mulch to the depths as specified where subsided or reduced in the garden bed and irrigation pipes are exposed. As per the Landscape Specification, the garden beds should be inspected fortnightly and topped up by the Landscape Contractor during the defects liability period and by the client after handover where required.

Tree Inspection

Tree inspection forms are to be completed once a month to review the health and vigour of all tree species located across the site. These ensure that trees are constantly monitored for any diseases and other elements that may hinder the overall growth habit and health. In addition to this, allow the Contractor to review if any tree replacements are required in accordance with the maintenance schedule. In addition to this, tree audits should be undertaken by a qualified Arborist longer term to review tree health and ensure all specimens are free from dead limbs that may become susceptible to limb drop and other risks.

Typical Tree Inspection Form:

General

Date	Reference
Purchaser	
Supplier	Inspected by (supplier/purchaser/agent)
Species	Batch identification

Labelling	Yes/No
Health and vigour	Yes/No
Freedom from pests/disease	Yes/No
Freedom from injury	Yes/No
Self-supporting	Yes/No
Stem taper	Yes/No
Pruning	Yes/No
Apical dominance	Yes/No
Crown symmetry	Yes/No
Included bank	Yes/No
Trunk position	Yes/No
Compatibility of graft unions	Yes/No
Indication of north	Yes/No

Conformance with specification

Conforming	Yes/No
Comments	

Balance

Balance	Yes/No
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MAINTENANCE OF ENVIRONMENTAL FACTORS

In response to the Environment Management Guidelines for Construction, measures have been put in place to mitigate any greater impacts to the surrounding environment, flora and fauna. All plant stock has been selected carefully to respond to the requirements for the industrial development and that respond to the existing ecological community. Both native planting and planting indigenous to the local area have been selected to minimise the effects of invasive species, exotics and pests on the local ecological community.

In addition to this, the continued management of environmental factors is critical through the operational and maintenance periods to ensure there is no disturbance to the local ecological community. The contractor under the operational and maintenance contract is to be across all statutory obligations relating to activities, products and services that may pose risks to the environment. These risks include any form of pollution or impact to the air, water and land environments of the site or any adjoining sites, as well as any adverse effects of waste management.

Landscape Maintenance Schedule

TASK DESCRIPTION	FREQUENCY: 0-6 MONTHS	FREQUENCY: 6-12 MONTHS
TREES		
VISUAL INSPECTION OF ALL TREES	FORTNIGHTLY IN SUMMER/ MONTHLY IN WINTER	MONTHLY IN SUMMER/ ONCE IN WINTER
MANUALLY INSPECT WATER LEVELS TO TREES	FORTNIGHTLY IN SUMMER/ MONTHLY IN WINTER	MONTHLY IN SUMMER/ ONCE IN WINTER
INSPECT DAMAGE TO TREES	FORTNIGHTLY IN SUMMER/ MONTHLY IN WINTER	MONTHLY IN SUMMER/ ONCE IN WINTER
REPLACE ANY TAPING TO TREES	FORTNIGHTLY IN SUMMER/ MONTHLY IN WINTER	MONTHLY IN SUMMER/ ONCE IN WINTER
PRUNE DEAD OR DAMAGED BRANCHES	FORTNIGHTLY IN SUMMER/ MONTHLY IN WINTER	MONTHLY IN SUMMER/ ONCE IN WINTER
CHECK FOR AND REPORT PESTS & DISEASES	FORTNIGHTLY	MONTHLY
REPLACE FAILED OR DAMAGED TREES	FORTNIGHTLY AS REQUIRED	MONTHLY AS REQUIRED
PRUNE BRANCHES IN PROXIMITY TO POWERLINES AND ELECTRICAL EASEMENTS	AS REQUIRED	AS REQUIRED
SPRAY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS	AS REQUIRED	AS REQUIRED
ADJUST & OR REPLACE STAKES & TIES WHERE NECESSARY	AS REQUIRED	AS REQUIRED
TURF		
MOW ALL TURF AREAS TO MAINTAIN HEIGHT BETWEEN 25-35MM	WEEKLY IN SUMMER/ MONTHLY IN WINTER	FORTNIGHTLY IN SUMMER/ EVERY 2 MONTHS IN WINTER
TRIM EDGES OF ALL TURF AREAS	WEEKLY IN SUMMER/ MONTHLY IN WINTER	FORTNIGHTLY IN SUMMER/ EVERY 2 MONTHS IN WINTER
REMOVE CLIPPINGS FROM SITE	WEEKLY IN SUMMER/ MONTHLY IN WINTER	FORTNIGHTLY IN SUMMER/ EVERY 2 MONTHS IN WINTER
REMOVE LITTER & DEBRIS FROM TURF AREAS	WEEKLY IN SUMMER/ MONTHLY IN WINTER	FORTNIGHTLY IN SUMMER/ EVERY 2 MONTHS IN WINTER
CHECK FOR AND REPORT PESTS & DISEASES	FORTNIGHTLY	MONTHLY
SPRAY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS	AS REQUIRED	AS REQUIRED
MONITOR AND APPLY FERTILISER TO TURF AREAS	6 MONTH INTERVALS - AUTUMN/SPRING	YEARLY - SPRING
MULCH		
REMOVE LITTER & DEBRIS FROM MULCH AREAS	FORTNIGHTLY	MONTHLY
REMOVE WEED GROWTH IN MULCH AREAS	FORTNIGHTLY	MONTHLY
TOP UP MULCH LEVELS	ANNUALLY	ANNUALLY
PLANTS		
CHECK FOR AND REPORT PESTS & DISEASES	FORTNIGHTLY	MONTHLY
SPRAY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS	FORTNIGHTLY	MONTHLY
PRUNE DAMAGED OR DEAD BRANCHES	FORTNIGHTLY	MONTHLY
REMOVE WEED GROWTH IN PLANT AREAS	FORTNIGHTLY	MONTHLY
REPLACE FAILED OR DAMAGED PLANTS	FORTNIGHTLY AS REQUIRED	MONTHLY AS REQUIRED
ADJUST OR REPLACE STAKES AND TIES WHERE NECESSARY	FORTNIGHTLY AS REQUIRED	MONTHLY AS REQUIRED
GENERAL WATERING TO ALL STREET TREES		
IRRIGATION BY WATER CART OR HOSECOCK AS REQUIRED TO MAINTAIN PLANT VIGOR	WEEKLY FIRST 6 MONTHS, FORTNIGHTLY THEREAFTER DEPENDENT ON RAINFALL	MONTHLY DEPENDENT ON RAINFALL CONDITIONS
URGENT WORKS		
REPORT ANY THEFT, DAMAGE OR VANDALISM	WEEKLY	AS REQUIRED

MONITORING AND MAINTENANCE MEASURES

Landscape Management Principles

The following landscape management principles have been identified as being consistent with the Landscape Plans;

- Minimise environmental impacts that may result from landscape management activities and utilise environmentally sustainable practices
- Preserve, enhance and improve the landscape character of the industrial estate
- For new and replacement plantings, the use of endemic plant species where appropriate
- Provide a safe environment, minimising potential risks to people, buildings and property
- Apply best practise landscape maintenance in landscape areas
- Target noxious weeds and feral animals through the use of integrated pest management approaches
- Maintain high quality outdoor spaces and streetscapes
- Maintain high quality passive recreation areas
- Appropriate funding, planning and management of landscape maintenance to provide a measurable improvement of the landscape appearance, safety and amenity.

Below is a summary of general maintenance and ongoing management requirements for revegetation and landscaping works.

Tree Protection

Avoid whipper-snipping grass at the base of trees as this can cause ring-barking and tree death. Clip around the base by hand where trees are planted into grass. Where trees are planted in paved areas, adjacent to the trunk, use:

- Ground covers
- Gravel
- Permeable paving surrounds
- Tree grates.

Fertilizing, Composting and Mulching

All trees whether native or exotic will perform better when the soil conditions are healthy. Building healthy soils is the key to achieving the long-term maintenance goals of landscape areas. Soil health is primarily achieved with regular applications of organic soil conditioners such as animal manures, decomposed green waste or proprietary blends of compost.

Fertilizing and composting are not critical maintenance activities except where there are obvious deficiencies but should be assessed on an annual basis by observation and leaf analysis.

Maintain an adequate level of mulch in planter beds in order to maximize water conservation and suppress weeds.

MAINTENANCE ACTION REQUIRED	FREQUENCY
Where obvious deficiencies are evident 60 grams/plant (trees) controlled release fertiliser such as Nutricote;	Only to be applied if the plant is noticeably under stress and the plant will benefit from the application of the fertiliser. Inspect annually; however apply in late spring if required.
3 x 20 grams slow release fertiliser tablet per plant N;P;K ratio – 18:3:10	Only to be applied if the plant is noticeably under stress and the plant will benefit from the application of the fertiliser. Inspect annually; however, apply in late spring if required.
Where soils are dry, hydrophobic and as a regular maintenance procedure, top up all garden beds with 30-50mm depth of soil conditioner as composted animal manure.	Bi-annually, applied at any time of the year
Maintain mulch to a depth of 75mm by periodic applications. Use the same mulch as originally specified in the Landscape Plan	As required, generally once per year

Pruning

All pruning shall be carried out by a qualified arborist AQF Level 3 and to be in accordance with AS 4373- 2007 Pruning of Amenity Trees. Pruning will be an ongoing process, which will require the periodic removal of unsightly, dead wood, hazardous branches and view obstructing branches.

Prune trees to maintain driver sight lines, remove dead wood from over hanging paths and carparks to maintain vegetation health and to remove branches that are likely to pose a risk to public safety.

Suitable timing for pruning should be determined by the arborist so as to maintain vegetation health, however all trees should be inspected regularly and especially after high winds to determine if any action is required.

Suggested Inspection times:

Start of Spring (September)

Start of Autumn: (March)

Proposed avenue style tree planting along the internal roads and driveways will require under pruning to accommodate site lines. This should be achieved over a period of time to lift the crown and provide a clear trunk to a maximum height of 3 metres with a desirable height of 2m.

Dead limbs containing hollows should not be removed unless there is a risk to public safety; limbs with hollows that are pruned from trees should be left in a suitable location on the ground to provide habitat.

Removed timber and native vegetation, unless diseased, should be considered for re-use on-site either as habitat logs in bushland areas where appropriate, or mulched in garden beds.

Trees in setback to be under pruned to a clear trunk of 2m. Foliage to be pruned back to allow security camera vision along fence lines and around buildings.

Soil Management for Trees

Wherever trees are to be planted it is important to understand whether the existing in situ topsoil can be used as backfill, whether new topsoil, soil mix, soil conditioner or amendments needs to be imported, or if a mix of the above is best. In general, the greater the soil/subsoil depth (the effective root depth) - the larger the tree that can be supported with minimal maintenance. The ideal soil profile for trees will have at least 3 horizons where the “A” horizon is the topsoil, the “B” horizon is Subsoil and the “C” horizon is the Subgrade. The minimum recommended topsoil depth for trees is 250mm with a minimum subsoil depth of 200mm. This will provide the tree with the minimum moisture/nutrient reserve and anchorage capacity. In addition to a physical inspection of the soil to be used to assess field texture and structure and drainage capability, soils should also be analysed by a soil laboratory for the following properties at a minimum:

- pH
- Salinity (electrical conductivity)
- Cation exchange properties and exchangeable cations
- Major and minor nutrients
- Organic matter (%).

Where tree specimens in container sizes 25 litres or larger are to be planted, the subsoil should also be tested for:

- pH
- Salinity (electrical conductivity)
- Cation exchange properties and exchangeable cations
- Aggregate stability.

The most common amendments used to bring soils up to a standard suitable for plant growth are:

- Lime or dolomite to make acid pH soils more alkaline.
- Lime or Gypsum to enhance exchangeable calcium and eliminate sodicity
- Gypsum to make clay soils more friable
- Composts and/or manures to improve organic matter and nutrients levels
- Single or complete fertilisers often with trace elements to correct a particular deficiency or multiple deficiencies.

It is important that the backfill soil is returned in the layers in which it was excavated so that topsoil with organic content is placed back near the top 300mm of the backfill. Where the existing site topsoil backfill is unsuitable or insufficient it can be made up with:

Sandy loam or site won topsoil mixed with;	70-100% by volume	Eg. 8 parts washed sand/2 parts sandy loam/1 part compost.
Composted soil conditioner conforming with AS 4454	0-30% by volume	Amendments as reported by the soil test results.

Where the tree pit is deeper than 300mm (usually for trees in containers over 45 litres) and the existing site subsoil is unsuitable or insufficient a topsoil medium low in organic matter is required so that the organic matter does not “sour” at depths where there is less oxygen, It can be made up with a sandy, well-drained medium which contains low organic matter An example of the components may be:

Sandy loam	60-80% by volume
On-site clay loam or clay topsoil or subsoil Composted soil conditioner conforming with AS 4454	20-30% by volume

Tree Replacement

To ensure that the density, species and design intent of established tree plantings is maintained, any trees that die should be replaced immediately with the largest specimen that can be reasonably procured and practically handled into position. All trees supplied are to conform to the recommendations of AS 2303 and be true-to- species and type, and free of disease, fungus, infection and/or any other impediment to their future growth and that they have been fully acclimatized for the conditions of the site. Trees are to be supplied from an accredited plant supplier that will need approval from the project superintendent.

(Please refer to Appendix A for the Landscape documentation and plant schedules.)

Supply trees with the following properties:

- Free from injury.
- With calliper at any given point on the stem greater than the calliper at any higher point on the stem.
- Health: Foliage size, texture and colour at time of delivery consistent with that of healthy specimens for the nominated species.
- Vigour: Extension growth consistent with that exhibited in vigorous specimens of the species nominated.
- Damage: Free from damage and from restricted habitat due to growth in nursery rows.
- Stress: Free from stress resulting from inadequate watering, excessive shade or excessive sunlight experienced at any time during their development.
- Site environment: Grown and hardened off to suit anticipated site conditions at the time of delivery.
- Tree stock in containers less than 45 L: Self-supporting at dispatch.
- Indication of north: Trees in containers greater than 100 L or of Size Index greater than 140: Label the northerly aspect during growth in the nursery and maintain during transit.
- Root development: Grown in their final containers for the following periods:
- Plants < 25 L size: More than 6 weeks.
- Plants > 25 L size: More than 12 weeks.
- Pests and disease: Free from attack by pests or disease.
- Native species with a history of attack by native pests: Restrict plant supply to those with evidence of previous attack to less than 15% of the foliage and ensure absence of actively feeding insects.

REPLACEMENT PLANTING	FREQUENCY
Replace failed or damaged plantings.	As required
Water replacement plantings for a minimum of 12 weeks after planting	As required to ensure survival

Tree Surrounds and Stakes

Stakes and ties are used to support plants and avoid trampling. Developing plants exposed to high winds may require staking. Replace tree stakes when damaged and/or remove them when no longer required and the plant is self-supporting. All stakes to be installed as per the landscape construction details in the landscape set – Appendix A.

Planting Areas

In general mass planted beds are either planted with native species or exotic or combination of both. The key difference in the management of native plants are their requirements for low- phosphorous fertilisers and a lower fertiliser rate than exotic species generally.

Natives also have lower water requirements in comparison to exotics and are adapted to the harsher Australian conditions. Endemic native plants will tolerate site soils without amendment better than exotics, and if no fertilisers are added there may be a lesser invasion by exotic weeds. Therefore, for the long-term landscape management, endemic plant species should always be considered first for any new gardens. The edges of the beds will be defined by garden edging as specified in the landscape documentation in Appendix A. Beds shall be weed free and mulched annually to suppress weed growth and maintain moisture content within the soil. Where irrigation is not present, gardens beds should be watered during dry spells to remove undue plant stress and the potential for die-back.

Pruning will be carried out on shrubs that require it, according to species, to remove the dead and damaged branches and to retain natural shape. Pruning will encourage good flowering to improve health and vigor.

Where die-back is present, new plants are to be planted as soon as possible, using species originally specified in the landscape documentation (Appendix A) or where there are no plants specified then replaced with endemic species where appropriate.

Pruning of Planted Areas

Ground covers and shrubs should be maintained as a maximum height of 0.5m along path edges. Remove dead or dying plants from mass planted areas as required. This may become necessary as plantings mature, after damage or adverse environmental conditions.

PRUNING MASS PLANTED AREAS	FREQUENCY
For low shrub species as per appropriate type; Tip prune to encourage density to 50- 100mm.	As required after flowering
For low shrub species as per appropriate type; Prune evenly to a height of 500mm above ground along path edges. Prune away from paths where required.	Every 4 years after flowering

Replacement Planting

Plants that have died or failed shall be replaced with the same species and variety as the closest commercially available size. This is to ensure that the density and species of the established plant material within mass planted areas is maintained.

REPLACEMENT PLANTING IN MASS PLANTED AREAS	FREQUENCY
Replace failed or damaged plantings.	As required
Water replacement plantings for a minimum of 12 weeks after planting	As required to ensure survival

Planting Conditions

Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. In other than sandy soils, suspend excavation when the soil is wet, or during frost periods.

Thoroughly water the plants before planting, immediately after planting, and as required to maintain growth rates free of stress.

Remove the plant from the container with minimum disturbance to the root ball. Make sure that the root ball is moist and place it in its final position, in the centre of the hole and plumb, and with the top soil level of the plant root ball level with the finished surface of the surrounding soil.

In planting beds and individual plantings, place fertiliser pellets around the plants at the time of planting. Application rate as per manufacturers details.

Backfill with topsoil mixture. Tamp lightly and water to eliminate air pockets. Make sure that topsoil is not placed over the top of the root ball, so the plant stem remains the same height above ground as it was in the container.

Mulching

Place mulch to the required depth of 75mm, clear of plant stems, and rake to an even surface flush with the surrounding finished levels. Spread and roll mulch so that after settling, or after rolling, it is smooth and evenly graded between design surface levels sloped towards the base of plant stems in plantation beds, and not closer to the stem than 50 mm in the case of gravel mulches.

- In mass planted areas: Place after the preparation of the planting bed but before planting and other work.
- In smaller areas (e.g. planter boxes): Place after the preparation of the planting bed, planting and other work.
- Extent: Provide mulch to 750 mm diameter, to surrounds of plants planted in riplines and grass areas. Depths: Spread organic mulch to a depth of 75 mm, and gravel mulch to a depth of 50 mm.

Weed Management

It is important that weeds are not allowed to establish nor spread to other areas. Weeds are highly invasive species and have the potential to invade newly disturbed sites. A noxious weed is a plant declared to be noxious under the NSW Noxious Weeds Act 1993. Noxious weeds can be agricultural weeds, environmental weeds or have a direct impact on human health. Under the Biosecurity Act 2015, noxious weeds must be controlled. On private land, the responsibility lies with the owner/occupier of that land.

Environmental weeds are non-local plants that can invade and change natural areas and threaten the survival of native plants and animals. After land clearing, environmental weeds are considered to be the next greatest threat to our indigenous biological diversity.

Environmental weeds have the potential to readily invade garden beds and potentially impact on adjacent areas of bushland. In addition to the environmental hazards posed by weeds, weeds occurring in mass planted areas growing from the base of trees and pavements can be unsightly and presents an untidy appearance.

Weed monitoring and hand weeding will be required to be undertaken on a regular basis. The management and control will depend on the species of weeds present and the appropriate measures for mitigating any impacts caused by its management on native species. Generally, weed control measures will include:

- Observation of landscape areas to check for weeds and hand weeding of any weeds identified
- Development and implementation of an eradication plan applicable to the circumstances, which may include manual removal and spot spraying
- Regular contact with neighbouring property owners to attempt to eradicate weeds species from the surrounding area
- Regular mulching to help suppress weeds.

MAINTENANCE ACTION REQUIRED	FREQUENCY
Prevent reproduction of weeds by destroying seedlings and established weeds before they set seed or other propagules form. Remove by hand where infestations are low. Ensure that the entire weed including all roots are removed. Dispose of the weeds off site.	As required
Remove by Herbicide any weeds that cannot be controlled by hand removal. Herbicide application must occur before weed has set seed. Non-targeted species and areas must be reinstated if damaged by herbicide application. Herbicide to be used in accordance with regulation rates and manufacturers recommendations and Safety Data Sheets. After spraying, lop and dead weeds flush with the ground surface and dispose of the cuttings. Use of bio- degradable herbicide is mandatory.	Do not spray in windy conditions or if rain is forecasted within the next 24 hours.

Lawn Areas

Lawn/grassed areas have high demands for maintenance and require significant resources particularly in irrigation, fertilising and mowing. The level of maintenance required for particular lawn areas should be considered within the context of their intensity of use.

Maintenance and access for mowing of grass on grade is a potential occupational health and safety risk. Embankments steeper than 3:1 should be considered for planting. Restrict the provision of high quality, well maintained lawn to sports fields and premium passive use areas. Aim to reduce the amount of resources dedicated to maintaining lawn and grass areas. Clippings should remain where they fall under most circumstances and should not be raked up and removed. In low use areas, irrigation, fertilisation and maintenance should be reduced.

Mowing and trimming measures may include:

- Litter: Remove litter and fallen branches before mowing.
- Height: Consistent with the growth habit of the grass variety and maintained at 25 mm to 40 mm throughout the year.
- Program: Weekly during the mowing season, November to March, and at bi-weekly intervals during April to October. Do not mow under wet conditions.
- Raking: Once every month before mowing, during the mowing season, with a flexible rake. On alternate mowings, adopt a north-south and east-west pattern.
- Edges: At the same time as mowing, trim lawn edges to plant beds, pathways, base of trees and other obstacles. Ensure trees and shrubs are not damaged.
- Clippings distribution: To be used as compost where possible.

Where compaction of turf areas cannot be managed through prevention, and the quality of turf is declining, special machines that remove cores of soil, make slits or grooves or spike holes must be used. Perform when turf is in active growth in summer but not when temperatures are extreme or there are very drying winds.

Topdressing is applying a thin layer of growing media to the turf. Components are usually sand but it must always be more free-draining than the media under the turf and should always have the same consistency over consecutive applications. Topdressing properly applied will fill hollows and provide a smooth finish. The addition of free-draining sand will also improve drainage and infiltration and therefore improve turf health. Topdressing material for remediation of depressions or irregularities: Apply coarse or medium soil to AS 4419 suitable for application to turf or grass seeded areas.

PROTECTIVE MEASURES

Protection of Existing Vegetation

Existing vegetation and newly planted areas need protection during construction, establishment, and after handover to the client. During construction stages and establishment periods, temporary fencing should be placed at the extent of area to be protected, preferably beyond the drip-line of trees to be protected.

The fencing methods should include flagging tape, stakes and temporary fencing, clearly identifying the area to be protected and restricting pedestrian and vehicular access to the protected zone.

Following completion of the construction period (including establishment), all temporary works should be removed when they are no longer required.

After establishment, vegetation should be managed and protected as subsequent stages are constructed and after final completion of the project.

Tree Protection

Tree protection on all development sites within the WSP (Western Sydney Parklands) must comply with Australian Standard 4970 – 2009 Protection of trees on development sites.

The relevant Australian Standards are:

- AS 4970 Protection of trees on development sites.
- AS 4687 Temporary fencing and hoardings.

Compliance with Tree protection requirements of Penrith City Council is mandatory.

This section is only relevant to sites with existing trees are to be retained.

Temporary Erosion, Contamination and Sedimentation Control (only during construction)

During construction, all precautions necessary should be undertaken to prevent erosion, contamination, and sedimentation of the site, surrounding areas and drainage systems, including but not limited to the following:

- Construction of temporary drains and catch drains
- Diversion and dispersal of concentrated flows to points where the water can pass through the site without detrimental impacts
- Construction and maintenance of silt traps to prevent discharge of scoured material to downstream areas
- Stabilisation of exposed soil surfaces (e.g. through sterile grass seeding, erosion control meshing, or mulching using vegetative material removed from the study area)
- Use of erosion and sediment control measures to collect sediment and to reduce flow velocities
- Construction of temporary fencing
- Regular monitoring and maintenance of all erosion and sediment control structures throughout the construction and operational phases of the development to ensure their effective function.

Tree Removal and Disposal of Vegetation on Site

All significant trees removed as a result of construction works are to be replaced by the same species and planted in a suitable location corresponding with the relevant vegetation community.

For any significant trees removed for construction works, consideration should be given to retaining the woody parts whole or in sections, and placed on the ground to provide habitat for native fauna.

All other native vegetation that is identified for removal should be chipped for use as mulch. All weed material is to be separated and removed from the cleared material prior to chipping. Mulch should be stockpiled at approved locations around the site and be used in locations from where it was derived to ensure any seed stock located within the mulch will be located in appropriate site conditions.

Any vegetation, topsoil or other materials not identified for re-use shall be either disposal of off-site or in an area where the material will not wash into existing vegetation or onto roads or surrounding creeks.

MONITORING AND REPORTING

Regular inspections of all landscape areas should be undertaken by the Microsoft Assets Team under direction from the Data Centre Operations Manager (DCOM) to ensure that maintenance is carried out according to the plan. The inspections should not be less frequent than three (3) monthly (or immediately after high rainfall/wind/heat events) with the objective that all areas are visited at least once within that period and an inspection checklist prepared and filled out during each inspection and a Three Monthly Maintenance Audit Form Submitted. (Refer to Appendix B). The inspection should include the ongoing protection of all existing vegetation and new revegetation works during its establishment period.

Maintenance staff should receive the audit form and carry out any remediation work required.

BUSHFIRE PROTECTION

Asset Protection Zones

In creating and maintaining a garden that is part of an APZ, the following should be considered:

- Sparse planting in the APZ is acceptable provided that they are well spread out and do not form a continuous path to the warehouse facilities. It should also not retain dead material or deposit quantities of ground fuel in a short or dangerous period. It must also be located far enough from the building so that plants will not ignite the building by direct flame contact or radiant heat emission.
- Plant or clear vegetation into clumps rather than in continuous rows in areas of risk. To prevent ground fire from spreading into trees, pruning of low branches two metres from ground is advised.
- Plant selection should preferably include local endemic species. Remove flammable species especially those with rough, flaky or stringy barks. Remove all noxious and environmental weeds as well.
- Ensure that planting is not positioned directly adjoining built structure. Where this does occur, gardens should contain low-flammability plants and non-flammable ground cover such as pebbles and crushed tile.
- Remove or locate away from the structure items like woodpiles, wooden sheds, combustible material, storage areas, large quantities of garden mulch, stacked flammable building materials etc. These items should have no direct contact with bush fire hazard vegetation.
- Take advantage of existing or proposed protective features as part of the property's APZ. These features are as follows: turf areas, fire trails, gravel paths, rows of trees, dams, creeks, swimming pools, tennis courts, vegetable gardens.
- Rows of trees can serve as wind break that will trap embers and flying debris that could otherwise reach the structure. These trees should be planted the same distance away from the structure as their maximum height.

Plants for Bush Fire Prone Gardens

In designing the landscape garden, it is essential to consider the type of plant species and their flammability aside from their arrangement and placement in the garden. In general, all plants will eventually burn, however there are plants that are less flammable than others.

Trees with loose, fibrous or stringy barks are flammable. These can easily ignite and encourage the ground fire to spread up to the crown of trees, thus should be avoided. When choosing less flammable plants, be sure not to introduce noxious or environmental weed species into the garden as it will cause greater long-term environmental damage.

Features of a less flammable plant:

- high moisture content
- high levels of salt
- low volatile oil content of leaves
- smooth barks without "ribbons" hanging from branches or trunks; and
- dense crown and elevated branches.

Inner Protection Areas

The area closest to the building that acts as a defensible space is called the IPA. Vegetation within this area should be kept to a minimum level and litter fuels should be discontinuous and kept below 1cm in height. The IPA consists of a mown lawn and well-maintained gardens.

Tree requirements within IPA:

- Tree canopy cover should be less than 15% at maturity and should not touch or overhang the building.
- Should be pruned to a height of 2m above the ground
- Tree canopies should be 2m to 5m apart
- Smooth barked and evergreen trees are preferred.

Shrubs requirements within IPA:

- Should have large gaps in the vegetation to slow down the threat of fire towards the building.
- Should not be located under trees and not form more than 10% of ground cover
- Should be away from exposed windows and doors at least twice the maturity height of the vegetation.

Grass requirements within IPA:

- Should be kept mown and not be more than 100mm in height.
- Should be clean of leaves and vegetation debris.

Outer Protection Areas

Located between the IPA and unmanaged vegetation is the OPA and only applicable in forest vegetation. Understories are managed in this area, with some separation in the canopies. It aims to decrease the intensity of an approaching fire on the IPA.

Tree requirements within OPA:

- Tree canopy cover should be less than 30% at maturity
- Tree canopies should be 2m to 5m apart.

Shrubs requirements within OPA:

- Should have large gaps in the vegetation to slow down the threat of fire towards the IPA.
- Should not form more than 20% of ground cover.

Grass requirements within OPA:

- Should be kept mown and not be more than 100mm in height.
- Should be clean of leaves and vegetation debris.

An APZ should be maintained at all times to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

SYD05-06-07 KEMPS CREEK

LOT 2 MAMRE RD, KEMPS CREEK NSW

LANDSCAPE CONCEPT MASTERPLAN

FOR: SSDA RE-SUBMISSION

17.02.2023

ISSUE J

DRAWING LIST:

L-01	Coversheet
L-02	Overall Landscape Masterplan
L-03	Landscape Concept Plan 01
L-04	Landscape Concept Plan 02
L-05	Landscape Concept Plan 03
L-06	Internal Road Front Setback (Detail Plan)
L-07	Landscape Section A-A
L-08	Landscape Section B-B
L-09	Landscape Section C-C
L-10	Landscape Section D-D
L-11	Landscape Section E-E
L-12	Landscape Section F-F
L-13	Switchyard: East Elevation
L-14	Switchyard: South Elevation
L-15	Indicative Plant Schedule
L-16	Indicative Plant Schedule
L-17	Typical Specification & Maintenance Notes
L-18	Songlines
L-19	Landscape Concept Plan
L-20	Entry Arrival Landscape
L-21	3D View
L-22	Appendix A: Landscape Documentation

NOTE:
▲ : Additional drawings added

GREENER PLACES PRINCIPLES



PRINCIPLE 1.
Integration
combine green
infrastructure with
development and
infrastructure



PRINCIPLE 2.
Connectivity
create an interconnected network of open spaces



PRINCIPLE 3.
Multifunctionality
deliver multiple
ecosystem services
simultaneously

Canopy Tree Offset
Commitment

When this symbol appears on the drawing, Habitat8 with our selected nursery partner will donate 5 x 300mm pot size endemic canopy trees to the local Faunacare group in the LGA. This initiative is a joint commitment with Landscape architect and client in providing local tree canopy cover to help mitigate the urban heat island effect while increasing local biodiversity values.



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CLIENT:
PROPONENT

ARCHITECT:

ENGINEER / PM:

Գրադարձ

ARUP

OVERALL LANDSCAPE MASTERPLAN

KEY



LARGE CANOPY TREE PLANTING
MIN 2x CLEAR TRUNK
Eucalyptus sp.



SMALL CANOPY TREE (MIN 1.5m CLEAR TRUNK)
Casuarina sp. or *Acmena sp.*



FEATURE CANOPY TREE (MIN 1.5m CLEAR TRUNK)
Brachychiton acerifolius or *Corymba latifolia* Summer Beauty



LOW PLANTING (UNDER 1M IN HEIGHT)



GRASSED AREA



PAVED / TILED SURFACE



CONCRETE SURFACE



BITUMEN SURFACE



COMPACTED DECOMPOSED GRANITE SURFACE (PERMEABLE)

SITE BOUNDARY

1. INTERNAL FOOTPATH

2. ESTATE STREETSCAPE (FOOTPATH, TURF VERGE, PLANTING, STREET TREE, STREET PLANTING) - PART OF SEPARATE APPROVAL

3. GROUP OF TREES MIN 200L POT SIZE (P LEACHED) WITH 2M CLEAR TRUNK

4. POTENTIAL FUTURE POCKET PARK ON COUNCIL LAND (REFER TO CONNECT TO COUNTRY L16-L18)

5. SITE ENTRY / EXIT

6. OUTDOOR RECREATIONAL FACILITY (PICNIC SHELTER x2, BKE BACKS, BENCH SEATS, CANOPY TREES)

6A. STAFF COURTYARD AREA BY CLIENT

7. SETBACK PLANTING BUFFER

8. FIRE TRUCK ACCESS

9. FUTURE CARPARK EXPANSION

10. RETAINING WALL WITH 100.0mm BALLUSTRADE

11. OFFICE ENTRY PLAZA

TREE CANOPY COVER TABLE

TREE NO.	TREE CANOPY (m²)	TOTAL CANOPY COVER (m²)
183	3m	7
78	5m	20
84	6m	30
40	8m	50
101	10m	78

TOTAL TREE NO. 486
TOTAL SOM LANDSCAPE AREA 25,318.40
TOTAL SOM CANOPY COVER 15,239
TOTAL AREA 136,765
TOTAL LANDSCAPE PERCENTAGE 18.51 %
TOTAL CANOPY PERCENTAGE 11.14 %
DCP REQUIREMENT 10%

ESTATE CANOPY COVER TABLE

THE YARDS LOT	SITE AREA	CANOPY AREA (m²)	TOTAL CANOPY COVER PERCENTAGE
H8-21043 THE YARDS KEMPS CREEK MODIFICATION	87,852	19,902	22.20
H8-22028 THE YARDS LOT 14 PROBIOTEC	50,234	9,159	18.23
H8-22018 PROPOSED LOT 13 CAROLINE DEVELOPMENT	51,693	5,212	10.08
H8-21023 ARDEX WAREHOUSE	43,682	5,280	12.04
H8-22008 THE YARDS MOD 4 LOT 6	33,833	4,832	14.58
H8-22005 LOT 9 KEMPS CREEK	28,899	4,190	14.50
H8-20065 TIT THE YARDS	125,614	19,005	15.29
H8-21008 SYD05-06-07 KEMPS CREEK (FOR MICROSOFT)	136,765	15,239	11.14
H8-20072 THE YARDS ESTATE (STREETSCAPE)	91,168	19,554	21.45

TOTAL SOM CANOPY COVER 102,253
TOTAL AREA 649,739
TOTAL CANOPY PERCENTAGE 16.14 %
DCP REQUIREMENT 10%

NOT INCLUDED: STAGE 1 LOTS 3-6, BEL LOTS 14-18, RELOT 17, SOUTH LINK ROAD, FREIGHT CORRIDOR, FUTURE DEVELOPMENT LOT 8 AND MAMRE ROAD DEDICATION

CONTEXT KEY PLAN

PROJECT
SYD05-06-07 KEMPS CREEK
LOT 2 MAMRE RD, KEMPS CREEK NSW

DRAWING TITLE
OVERALL LANDSCAPE
MASTERPLAN

PROJECT NO.
HB-21008

PURPOSE
SSDA
RE-SUBMISSION

SCALE
1:2000 @A3

REVISION
J

DATE
17.02.2023

DRAWN
KM

CHECKED
DV

PAGE
L02

SCALE 1:2000 AT A3

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SYD05-06
20 February 2025

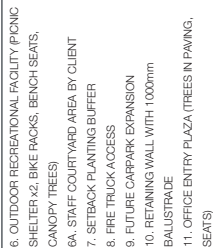
24 of 62

LANDSCAPE CONCEPT PLAN 01



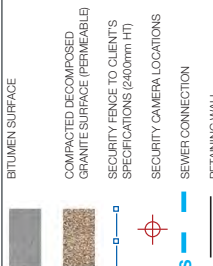
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PURPOSE			SSDA RE-SUBMISSION					

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DESIGN NOTES

1. INTERNAL FOOTPATH
2. IS STATE STREETSCAPE (FOOTPATH, TURF VERGE, PLANTING, STREET TREE, STREET PLANTING) - PART OF SEPARATE APPROVAL
3. GROUP OF TREES MIN 200L POT SIZE (MULCHLEACHED) WITH 2M CLEAR TRUNK
4. POTENTIAL FUTURE POCKET PARK ON COUNCIL LAND REFER TO CONNECT TO COUNTRY L16-L18)



Architectural site plan of the proposed development at 10000 104th Avenue. The plan shows the layout of the buildings, parking areas, and landscaping. Key features include:

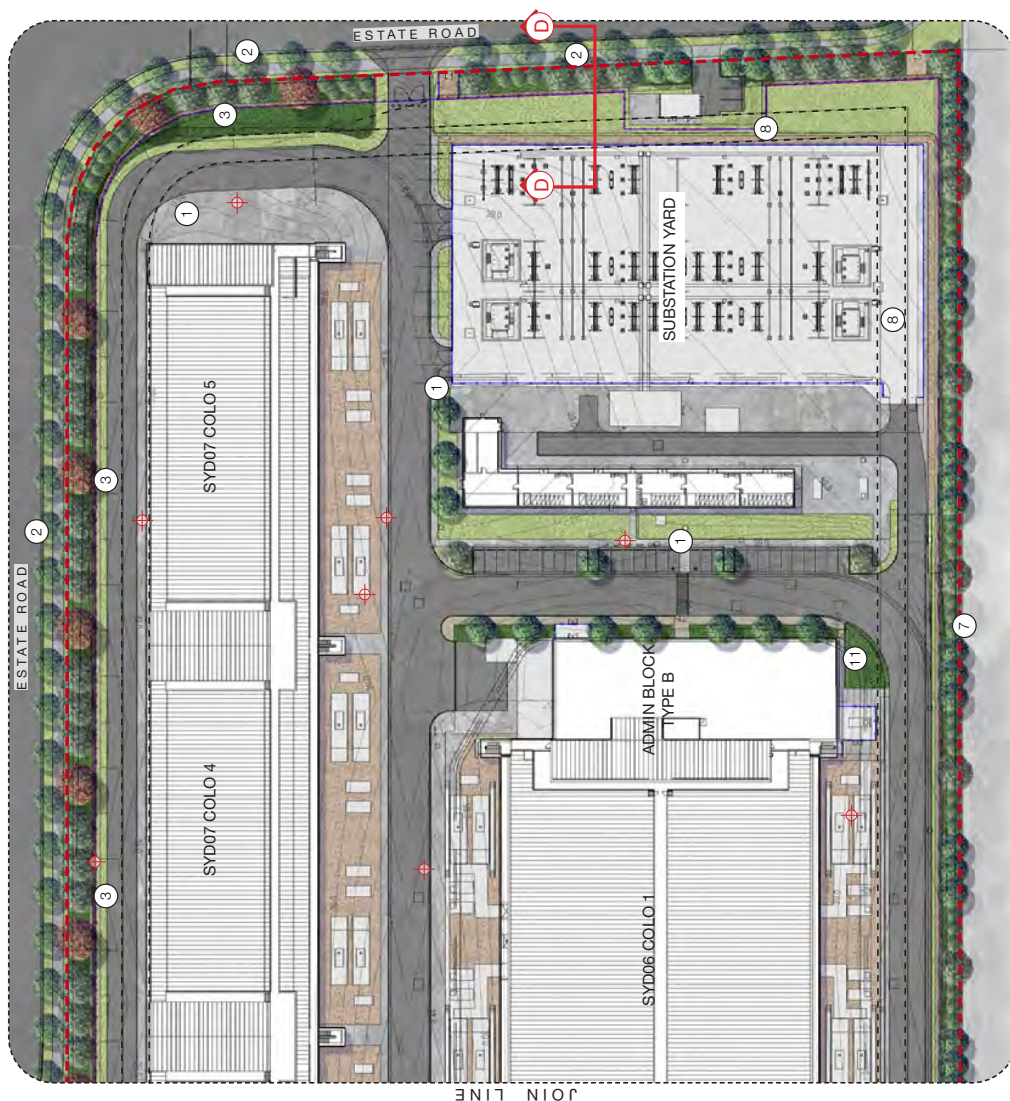
- Buildings:** Labeled as OFFICE, SYD07 COLO 1, SYD07 COLO 2, SYD07 COLO 3, SYD05 COLO 1, SYD05 COLO 2, SYD06 COLO 2, and SYD06 COLO 3.
- Parking:** Various parking lots are shown, including a large lot on the left and smaller lots between the buildings.
- Landscaping:** The plan includes detailed landscaping with trees, shrubs, and lawns, particularly along the perimeter and between buildings.
- Annotations:** The plan includes a north arrow, a scale bar (0 to 100m), and various annotations such as 'ESTATE ROAD', 'CSH PROPERTY/DO', and '10000 104th Avenue'.
- Other Features:** The plan also shows a '10000 104th Avenue' road, a '10000 104th Avenue' road, and a '10000 104th Avenue' road.



DESIGN NOTES

1. INTERNAL FOOTPATH
2. ES STATE STREETSCAPE (FOOTPATH, TURF VERGE, PLANTING, STREET TREE, STREET PLANTING) - PART OF SEPARATE APPROVAL
3. GROUP OF TREES MIN 200L POT SIZE (PLEACHED) WITH 2M CLEAR TRUNK
4. POTENTIAL FUTURE POCKET PARK ON COUNCIL LAND (PREFER TO CONNECT TO COUNTRY L16-L18)
5. SITE ENTRY / EXIT
6. OUTDOOR RECREATIONAL FACILITY (PICNIC SHELTER X2, BIKE RACKS, BENCH SEATS, CANOPY TREES)
7. STAFF COURTYARD AREA BY CLIENT
7. SETBACK PLANTING BUFFER
8. FIRE TRUCK ACCESS
8. FUTURE CARPARK EXPANSION
10. RETAINING WALL WITH 1000mm BALUSTRADE
11. OFFICE ENTRY PLAZA (TREES IN PAVING SEATS)

	SITE BOUNDARY
	LARGE CANOPY TREE PLANTING (MIN 2M CLEAR TRUNK) <i>Eucalyptus</i> sp.
	SMALL CANOPY TREE (MIN 1.5M CLEAR TRUNK) <i>Cupressus</i> sp. or <i>Acmena</i> sp.
	FEATURE CANOPY TREE (MIN 1.5M CLEAR TRUNK) <i>Brachylaena arbutifolia</i> or <i>Corymbia litoralis</i> 'Summer Beauty'
	LOW PLANTING (UNDER 1M IN HEIGHT)
	GRASSED AREA
	PAVED / TILED SURFACE
	CONCRETE SURFACE
	BITUMEN SURFACE
	COMPACTED DECOMPOSED GRANITE SURFACE (PERMEABLE)
	SECURITY FENCE TO CLIENT'S SPECIFICATIONS (2400mm HT)
	SECURITY CAMERA LOCATIONS
	SEWER CONNECTION
	RETAINING WALL
	WATER MAIN



JOIN LINE



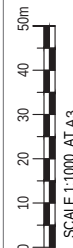
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(New South Wales)



PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMPE RD, KEMPS, CREEK NSW	LANDSCAPE CONCEPT PLAN 03	H8-21008	SSDA RE-SUBMISSION	1:1000 @A3	J	17.02.2023	KM	DV	L05

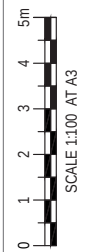


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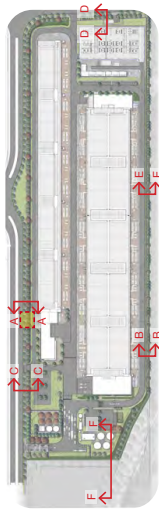
SYDNEY
Byron Bay
(standing country)

MELBOURNE
SE GREENSLAND
(Wurundjeri country)

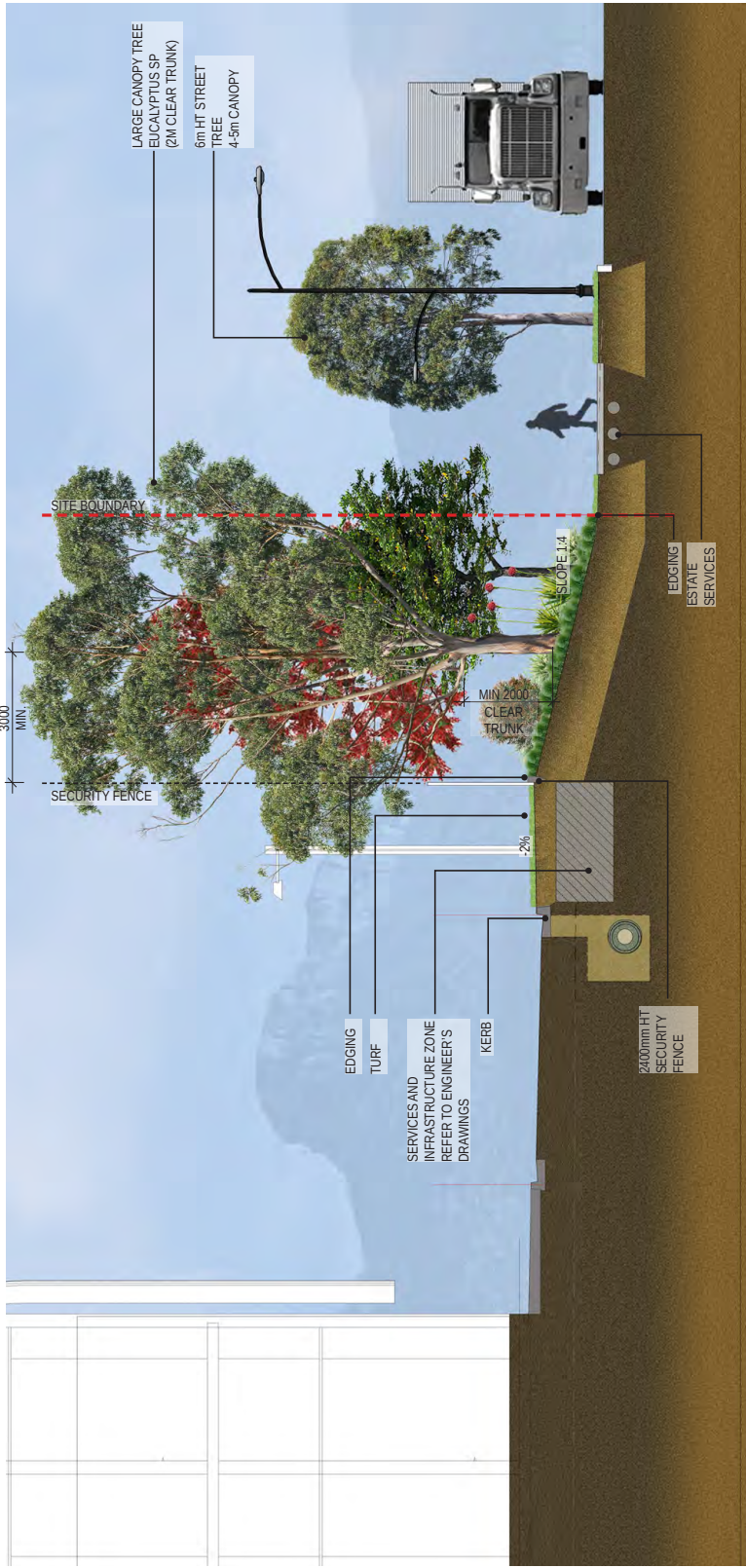
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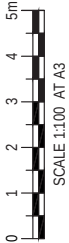
LANDSCAPE SECTION A-A



KEY PLAN



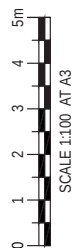
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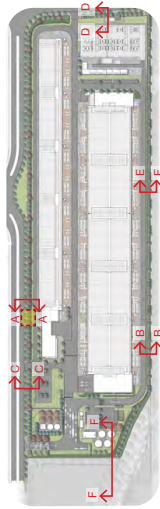
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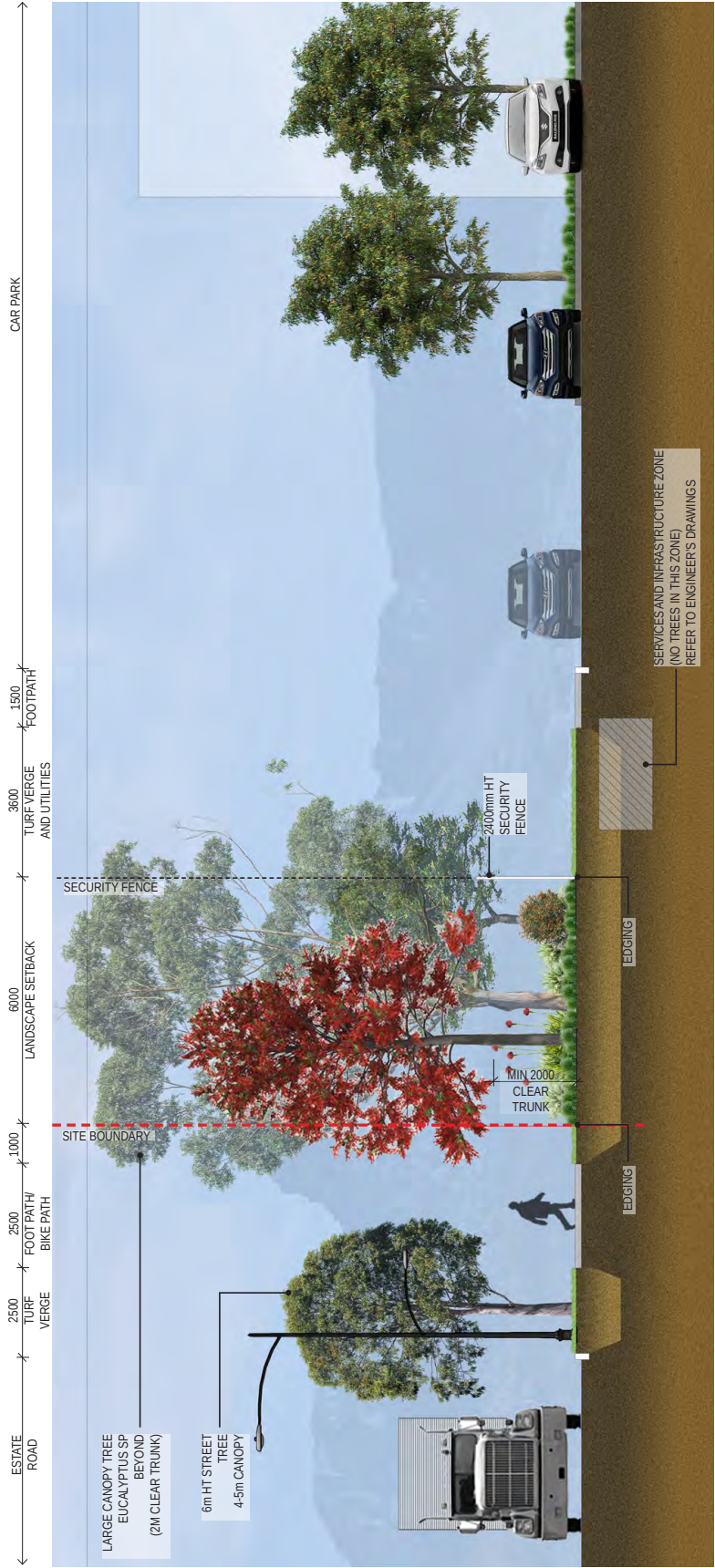
THE TREE ROOT VOLUME IS SUFFICIENT FOR OPTIMAL GROWTH AS THE VOLUME OF SOIL IS A LINEAR EXCAVATED CONTINUOUS TRENCH WITH 1500mm DEPTH OF IMPORTED SOIL THAT RUNS ALONG THE BOUNDARY.



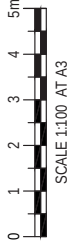
LANDSCAPE SECTION C-C



KEY PLAN

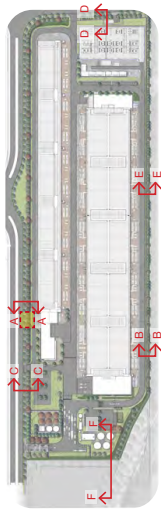


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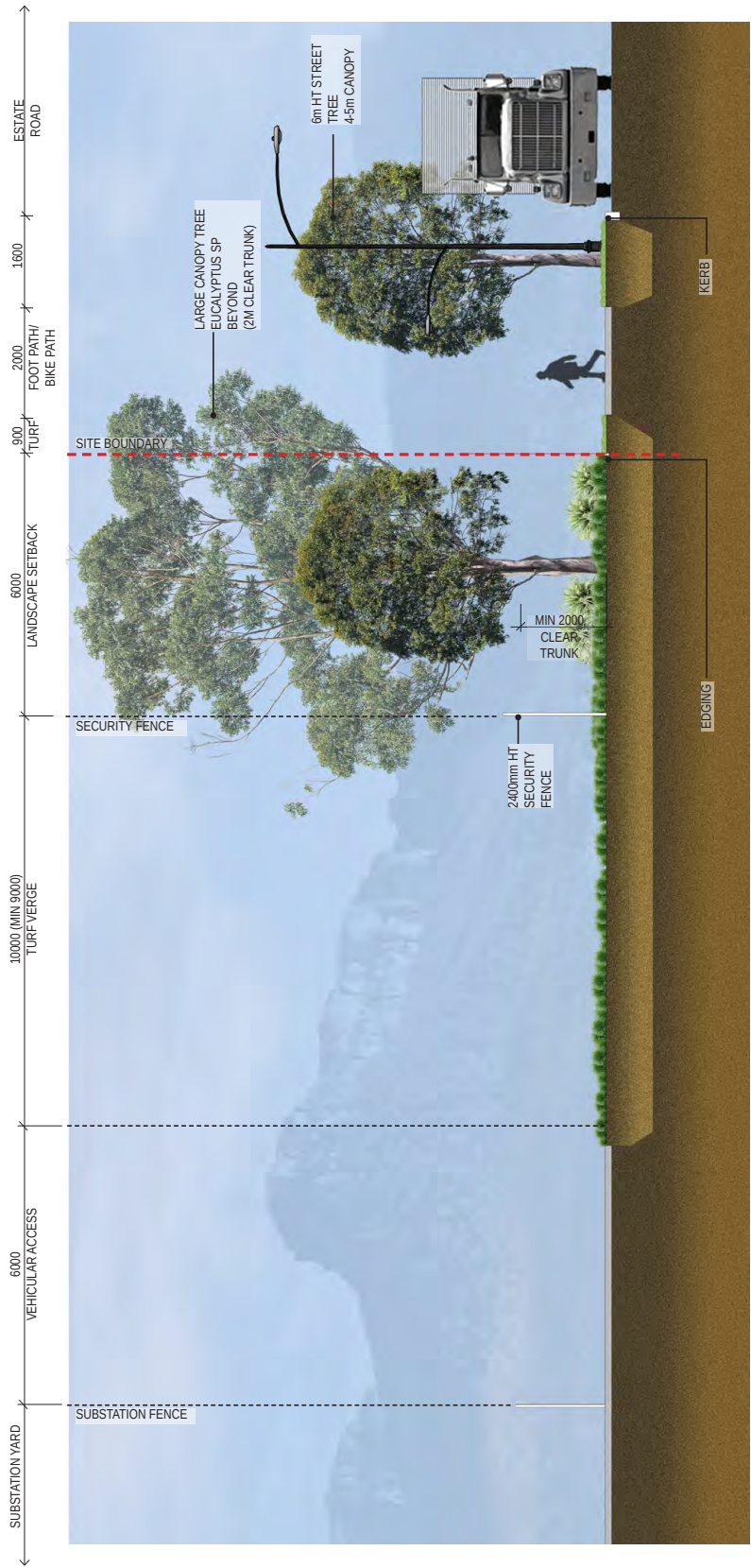


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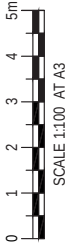
LANDSCAPE SECTION D-D



KEY PLAN

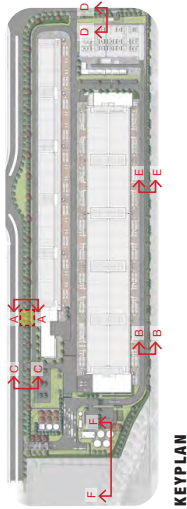


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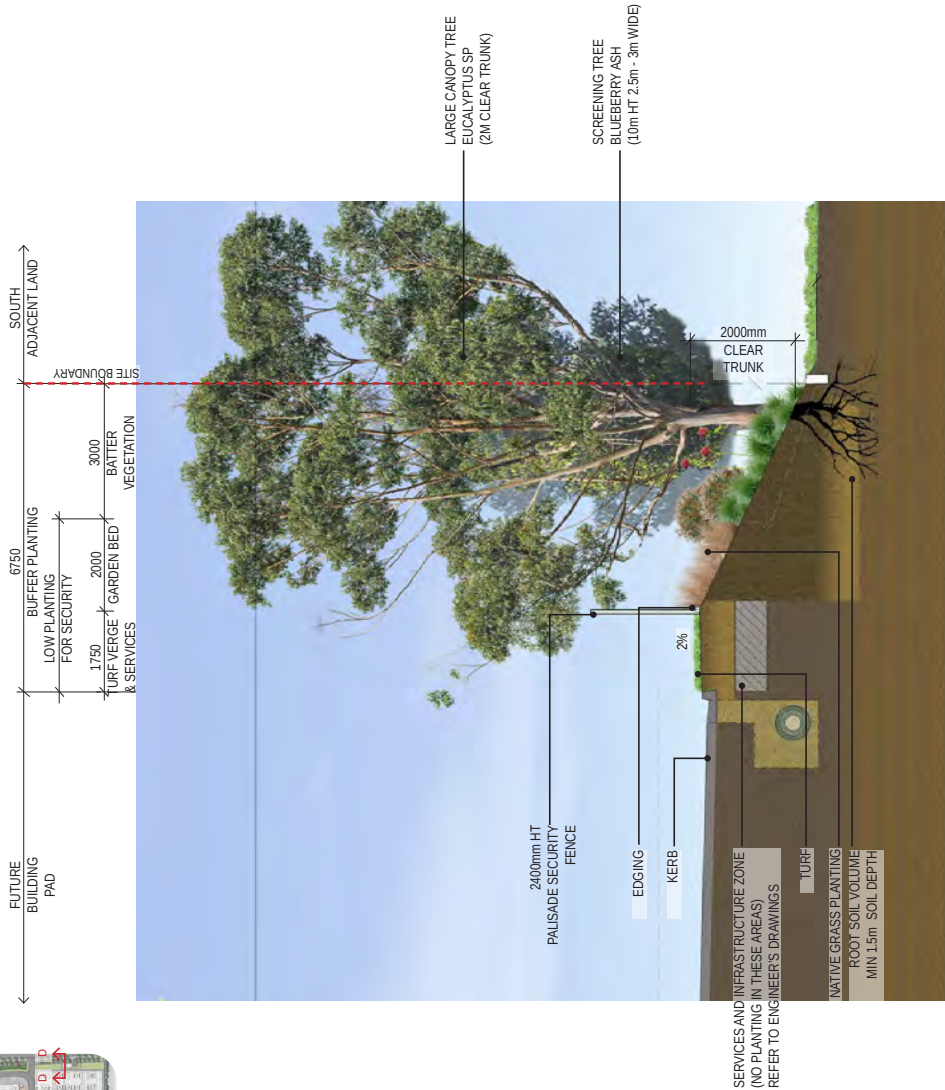


PROJECT	DRAWING TITLE	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
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LANDSCAPE SECTION E-E



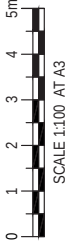
KEY PLAN



01 TYPICAL LANDSCAPE SECTION - SETBACK E-E
Scale 1:100@A3

HEALTHY TREE GROWTH

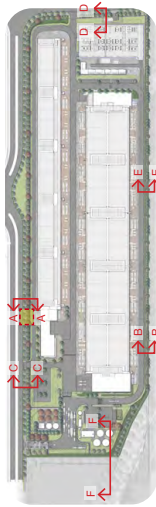
THE TREE ROOT VOLUME IS SUFFICIENT FOR OPTIMAL GROWTH AS THE VOLUME OF SOIL IS A LINEAR EXCAVATED CONTINUOUS TRENCH WITH 1500mm DEPTH OF IMPORTED SOIL THAT RUNS ALONG THE BOUNDARY.



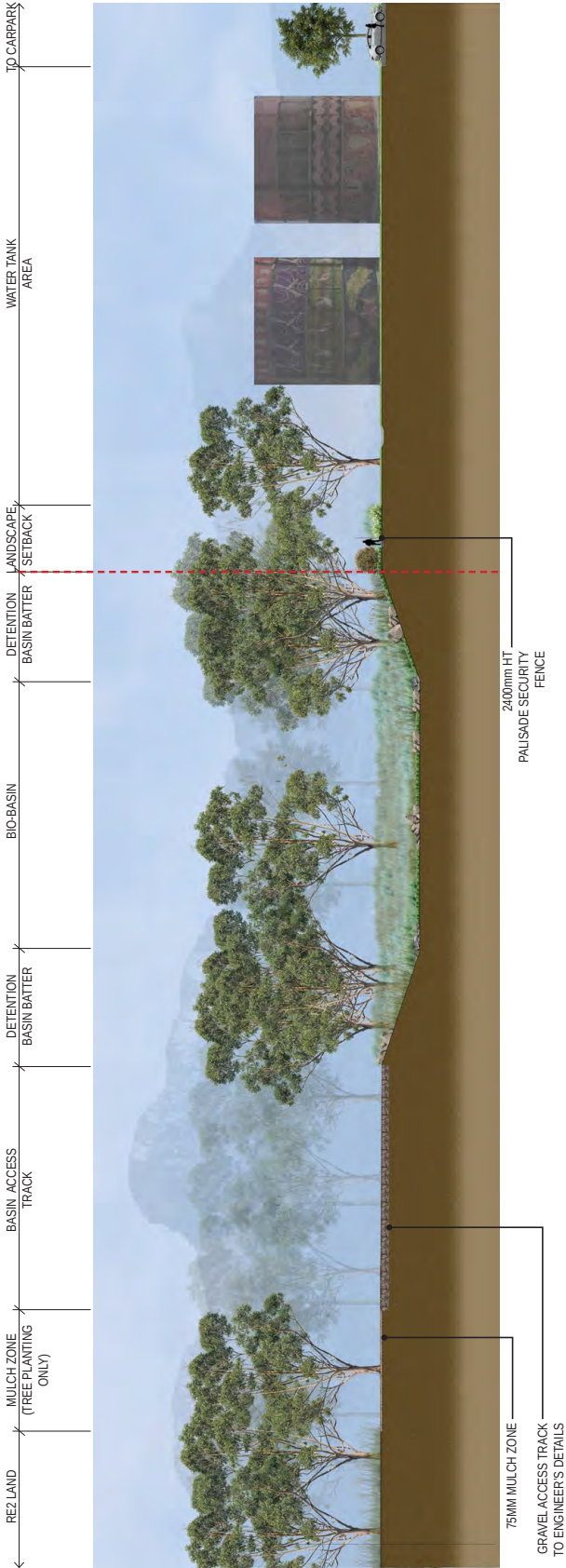
PROJECT	DRAWING TITLE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMFRE RD, KEMPS CREEK NSW	LANDSCAPE SECTION E-E	AS SHOWN	J	17.02.2023	KM	DV	L 11

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LANDSCAPE SECTION F-F



KEY PLAN



01 LANDSCAPE SECTION - BASIN F-F
Scale 1:400@A3

PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMRE RD. KEMPS CREEK NSW	LANDSCAPE SECTION F-F	H8-21008	SSDA RE-SUBMISSION	AS SHOWN	J	17.02.2023	KM	DV	L12



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0 4 8 12 16 20m

SCALE 1:400 AT A3

SWITCHYARD: EAST ELEVATION



SITE PLAN



KEYPLAN

DESIGN NOTES

1. CONTROL METERING BUILDING
2. 2400mm HT PALSADE SECURITY FENCE
3. SWITCHYARD EQUIPMENT
4. LARGE CANOPY TREE (*Eucalyptus* sp.)
5. CANOPY TREE (*Wisteria* sp.)
6. SUBSTATION BUILDING
7. MAINTENANCE PARKING
8. SCREENING TREE - BLUEBERRY ASH (10M HT)
9. STREET TREES (PART OF SEPARATE APPLICATION)



01 EAST ELEVATION
Scale 1:200 @ A3 / 1:100 @ A1



PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK	SWITCHYARD: EAST ELEVATION	HB-21008	REVIEW	AS SHOWN	A	17.02.2023	DG	DV	L13

LOT 2 MAMRE RD, KEMPS CREEK NSW

SWITCHYARD: SOUTH ELEVATION



SITE PLAN



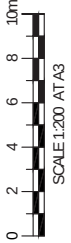
KEY PLAN

DESIGN NOTES

- 1. PLANT BUILDING
- 2. 2400mm HT PALISADE SECURITY FENCE
- 3. SWITCHYARD EQUIPMENT
- 4. SCREENING TREE - BLUEBERRY ASH (10M HT)
- 5. BATTER VEGETATION (UNDER 1M)
- 6. SUBSTATION BUILDING
- 7. CONTROL METERING BUILDING
- 8. LARGE CANOPY TREE (*Eucalyptus* sp.)
- 9. CANOPY TREE (*Wistariopsis* sp.)



01 SOUTH ELEVATION
Scale 1:200@A3 / 1:100@A1



PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK	SWITCHYARD: SOUTH ELEVATION	H8-21008	REVIEW	AS SHOWN	A	17.02.2023	DG	DV	L 14

LOT 2 WAMPE RD, KEMPS CREEK NSW

INDICATIVE PLANT SCHEDULE

SMALL / MEDIUM TREE SPECIES (75L+)	
BOTANICAL NAME + POT SIZE	COMMON NAME
<i>Backhousia citrifolia</i>	Lemon Scented Myrtle
<i>Callistemon salignus</i>	Willow Bottlebrush
<i>Cupaniopsis anacardioides</i>	Tuckeroo
<i>Lagerstroemia hybrids 'Indian Summer Range'</i>	Crepe Myrtle Lipan, Biloxi
<i>Eleocharpus reticulatus</i>	Blueberry Ash
<i>Melauclea linearifolia</i>	Snow in Summer
<i>Waterhousea floribunda</i> and <i>cultivars</i>	Weeping Lilly Pilly
<i>Acacia paramattensis</i>	Paramatta Wattle
<i>Melauclea decora</i>	White Feather Honeymyrtle
<i>Angophora costata</i>	Smooth Bark Apple
<i>Corymbia ficifolia 'Summer Beauty'</i>	Dwarf Eucalypt
<i>Acmena smithii</i>	Lilly Pilly
<i>Callistemon viminalis 'Kings Park Special'</i>	Weeping Bottlebrush
<i>Magnolia grandiflora 'Exmouth'</i>	Bull Bay Magnolia
<i>Tristanopsis laurina</i>	Water Gum
<i>Syzygium leuhmannii</i>	Riberry, Small leaved lilly pilly
<i>Acacia paramattensis</i>	Paramatta Wattle
<i>Melauclea decora</i>	White Feather Honeymyrtle

LARGE TREE SPECIES (100L+)	
BOTANICAL NAME + POT SIZE	COMMON NAME
<i>Casuarina glauca</i>	Swamp Oak
<i>Eucalyptus amplifolia</i>	Cabbage Gum
<i>Eucalyptus crebra</i>	Narrow Leaved Ironbark
<i>Eucalyptus fibrosa</i>	Broad Leaved Ironbark
<i>Eucalyptus moluccana</i>	Grey Box
<i>Eucalyptus punctata</i>	Grey Gum
<i>Eucalyptus tereticornis</i>	Forest Red Gum
<i>Araucaria columnaris</i> & <i>A. heterophylla</i>	Cook Pine/ Norfolk Island Pine
<i>Angophora costata</i>	Smooth Bark Apple
<i>Corymbia maculata</i>	Spotted Gum
<i>Angophora floribunda</i>	Rough-barked Apple
<i>Araucaria cunninghamii</i>	Hoop Pine
<i>Ficus rubiginosa</i>	Port Jackson Fig
<i>Brachychiton acerifolius</i>	Illawarra Flame Tree
<i>Brachychiton populneus</i>	Kurrajong
<i>Lophostemon confertus</i>	Brush Box

SHRUBS	
BOTANICAL NAME	COMMON NAME
<i>Acacia rubida</i>	Red wattle
<i>Acacia spectabilis</i>	Mudgee wattle
<i>Breytia oblongifolia</i>	Common Breytia
<i>Bursaria spinosa</i>	Blackthorn
<i>Corea alba</i>	White corea
<i>Callistemon citrinus</i>	Bottlebrush varies
<i>Corea reflexa</i>	Native fuchsia
<i>Daviesia ulicifolia</i>	
<i>Dodonaea viscosa</i>	Wedge-leaf Hop Bush
<i>Kurzea ambigua</i>	Fringed Heath Myrtle
<i>Doryanthes excelsa</i>	Gymea Lily
<i>Grevillea juniperina</i>	
<i>Hakea sericea</i>	
<i>Hakea salicifolia</i>	Willow Hakea
<i>Westringia fruticosa</i>	Coast Rosemary
<i>Syzygium australe 'Southern Form'</i>	Lilly Pilly
<i>Grevillea 'Robyn Gordon'</i>	
<i>Pittosporum tobira</i>	Australian laurel
<i>Pittosporum 'Miss Muffet'</i>	Miss Muffet
<i>Doryanthes excelsa</i>	Gymea Lily
<i>Phormium tenax</i>	New Zealand flax
<i>Acmena smithii var minor</i>	Dwarf Lilly Pilly
<i>Ficus 'Flash'</i>	
<i>Melauclea 'Claret Tops'</i>	

GROUNDCOVERS, FERNS, HEDGES, GRASSES & CLIMBERS (150mm pot size)	
BOTANICAL NAME (150mm pot size) @ 4/m2	COMMON NAME
<i>Adiantum aethiopicum</i>	Maidenhair Fern
<i>Carex appressa</i>	Tail sedge
<i>Cissus antarctica</i>	Native Grape
<i>Clematis aristata</i>	Old Man's Beard
<i>Dianella longifolia</i>	Flax Lily
<i>Dichondra repens</i>	Kidney Weed
<i>Hardenbergia violacea</i>	Purple Twining-pea
<i>Lomandra longifolia 'Tanika'</i>	Dwarf Mat Rush
<i>Microlaena stipoides</i>	Weeping Grass
<i>Pandorea pandorana</i>	Wonga Vine
<i>Poa labillardieri</i>	Tussock Grass
<i>Carpobrotus glaucescens</i>	Pigface
<i>Grevillea 'Royal Poorinda'</i>	Grevillea groundcover

Plant species sourced from The Marnie Road DCP 2021 - Appendix C Plant list.

PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK	INDICATIVE PLANT SCHEDULE	HB-21008	SSDA RE-SUBMISSION	NTS	J	17.02.2023	KM	DV	L 15
LOT 2 MAMRE RD, KEMPS CREEK NSW									

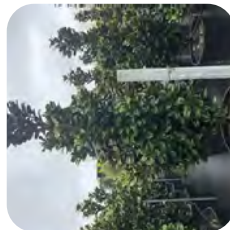


INDICATIVE PLANT SCHEDULE

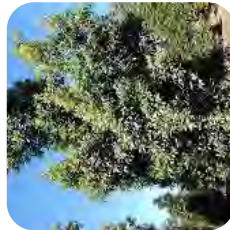
PLANT IMAGES



Eucalyptus crabra



Magnolia 'Coolwyn Glass'



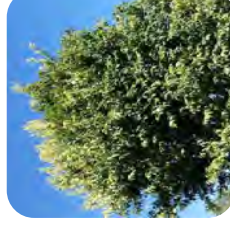
Elaeocarpus reticulatus



Backhousia citriodora



Eucalyptus amplifolia



Waterhousea floribunda



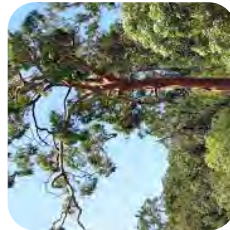
Callistemon salignus



Melaleuca linifolia



Melaleuca decora



Angophora costata



Tristanopsis laurina



Angophora floribunda



Brachychiton acerifolium



Lagerstroemia hybrids



Pittosporum 'Miss Muffet'



Syzygium 'Southern Form'



Grevillea 'Robyn Gordori'



Doryanthes excelsa



Callistemon citrinus



Westringia fruticosa



Correa alba



Lomandra longifolia 'Tanika'



Carpobrotus glaucescens



Hardenbergia violacea



Dichondra repens



Grevillea 'Royal Poinciana'



PLANTING STRATEGY

INTEGRATION:

STREET TREE PLANTING, SETBACK PLANTING AND BUFFER PLANTING SHALL BE INTEGRATED WITH SOFT ENGINEERING SWALES AND SHALL LINK WITH THE RE-VEGETATED CREEK CORRIDOR

CONNECTIVITY:

THE STREETSCAPE USES PEDESTRIAN AND BIKE PATHS TO CONNECT ALL BUILDINGS WITHIN THE DEVELOPMENT WITH PUBLIC SPACE AND THE CREEK CORRIDOR WHILE LINKING IN WITH THE REGIONAL BIKE NETWORK.

MULTIFUNCTIONALITY:

THE PLANTING STRATEGY ALLOWS FOR THE VARIOUS MICRO-CLIMATE ECOSYSTEMS CREATED BY BUILT FORM AND ROADS. ALL PLANTING LINKS BACK TO THE LOCAL ENDEMIC PLANTING AND CREEK CORRIDOR ENVIRONMENT.

TYPICAL SPECIFICATION + MAINTENANCE NOTES

SERVICES

Before landscape work is commenced the Landscape Contractor is to establish the position of all service lines and ensure tree planting is carried out at least 3 metres away from these services. Service lines, vents and hydrants shall be left exposed and not covered by any landscape finishes (turfing, paving, garden beds etc.) Finish adjoining surfaces flush with pit lids.

PLANTING MIXTURE - (900mm DEPTH)

Imported Garden Mix.

Type: Premium

Available: Australian Native Landscapes (ANL)

TURF SOIL MIX (150mm DEPTH)

Type: Turf underlay

Available: Australian Native Landscapes (ANL)

MULCH

APPLICATION: Place mulch to the required depth, (refer to drawings) clear of plant stems, and rake to an even surface finishing 25mm below adjoining levels. Ensure mulch is watered in and tamped down during installation.

MULCH TYPE: (75mm DEPTH)

Type 1 (Base of Trees):

Pine bark: From mature trees, graded in size from 15mm to 30mm, free from wood slivers. Dark brown in colour and texture.

Type 2:

Batters and Edges Re-vegetation Mulch

COMPOST

Shall be "GO Compost" as available from Solico or approved equal.

PLANT MATERIAL

All plants supplied are to conform with those species listed in the Plant Schedule on the drawings. Generally plants shall be vigorous, well established, hardened off, of good form consistent with species or variety, not soft or forced, free from disease or insect pests, with large healthy root systems and no evidence of having been restricted or damaged. Trees shall have a leading shoot. Immediately reject dried out, damaged or unhealthy plant material before planting. All stock is to be container grown for a minimum of six (6) months prior to delivery to site.

FERTILISER

MASS PLANTING AREAS: Fertiliser shall be 'Nutricote' or approved equivalent in granule form intended for slow release of plant nutrients over a period of approximately nine months. Thoroughly mix fertiliser with planting mixture at the recommended rate, prior to installing plants.

TURF: Shall be Shirleys No. 17 or approved equal thoroughly mixed into the topsoil prior to placing turf.

TREES IN GRASS AND SUPER ADVANCED TREES: Pellets shall be in the form intended to uniformly release plant food elements for a period of approximately nine months equal to Shirleys Kokei pellets, analysis 6.3:1.8:2.9. Kokei pellets shall be placed at the time of planting to the base of the plant, 50mm minimum from the root ball at a rate of two pellets per 300mm of top growth to a maximum of 8 pellets per tree.

STAKING AND TYING

Shakes shall be straight hardwood, free from knots and twists, pointed at one end and sized according to size of plants to be staked.

a. 100-greater than 200lfre 3x(1800x50x50mm)

Trees shall be 50mm wide hessian webbing or approved equivalent nailed or stapled to stake. Drive stakes a minimum one third of their length, avoiding damage to the root system, on the windward side of the plant.

TURF

Obtain turf from a specialist grower of cultivated turf. Turf shall be of even thickness, free from weeds and other foreign matter; lay in stretcher pattern with joints staggered and close butted, perpendicular to gradient of FSL. Water immediately after laying.

TURF TYPE: Couch (Confirm with council prior to construction)

LANDSCAPE MAINTENANCE PROGRAM

Maintenance shall mean the care and maintenance of the landscape works by accepted horticultural practice as rectifying any defects that become apparent in the landscape works under normal use. This shall include, but shall not be limited to, watering, mowing, fertilising, re-seeding, reurfing, weeding, pest and disease control, staking and tying, replanting, cultivation, pruning, aerating, renovating, top dressing, maintaining the site in a neat and tidy condition as follows:-

GENERAL

The landscape contractor shall maintain the landscape works for the term of the maintenance (or Plant establishment) period to the satisfaction of the council. The landscape contractor shall attend to the site on a weekly basis. Landlord to maintain all landscape areas in perpetuity (life of the development).

WATERING

Grass, trees and garden areas shall be watered regularly so as to ensure continuous healthy growth.

RUBBISH REMOVAL

During the term of the maintenance period the landscape contractor shall remove rubbish that may occur and reoccur throughout the maintenance period. This work shall be carried out regularly so that at weekly intervals the area may be observed in a completely clean and tidy condition.

REPLACEMENTS

The landscape contractor shall replace all plants that are missing, unhealthy or dead at the Landscape Contractor's cost. Replacements shall be of the same size, quality and species as the plant that has failed unless otherwise directed by the Landscape Architect. Replacements shall be made on a continuing basis after the plant has died or is seen to be missing.

STAKES AND TIES

The landscape contractor shall replace or adjust plant stakes, and tree guards as necessary or as directed by the Landscape Architect. Remove stakes and ties at the end of the maintenance period if so directed.

PRUNING

General: Prune to reflect the natural growth flowering and regrowth habit of the individual species. Shrubs: Prune after flowering - Spring and Summer and on a spot basis as required.

Hedge trimming: Schedule trimming at times which will maintain the character and design of hedges. Allow up to three times per season.

Tip pruning: To encourage development of new shoots during the active growing season. Do not

Radical pruning: To maintain a neat or formal shape or when a particular problem, growth habit, damage, or disease requires branch removal.

Trees: Prune to eliminate diseased or damaged growth, avoid inter-branch contact and thin out crowns in a natural manner, maintain sight lines to signs and lights, or maintain visibility for personal security. Tree branch removal to AS 4373. Give notice and engage a suitably qualified 'arborist'.

MULCHED SURFACES

All mulched surfaces shall be maintained in a clean and tidy condition and be reinstated if necessary to ensure that a depth of 75mm is maintained. Ensure mulch is kept clear of plant stems at all times. Remove all mulching materials off lawn or paved areas and maintain a clean and tidy appearance when viewed on a weekly basis.

PEST AND DISEASE CONTROL

The landscape contractor shall spray against insect and fungus infestation with all spraying to be carried out in accordance with the manufacturer's directions. Report all instances of pests and diseases (immediately that they are detected) to the Landscape Architect.

GRASS AND TURF AREAS

The landscape contractor shall maintain all grass and turf areas by watering, weeding, re-seeding, rolling, mowing, trimming or other operations as necessary. Seed and turf species shall be the same as the original specified mixture. Grass and turf areas shall be sprayed with approved selective herbicide against broad leaved weeds as required by the Landscape Architect and in accordance with the manufacturer's directions. Grass and turf areas shall be fertilised once a year in autumn with "Dynamic Lifter" for lawns at a rate of 20kg per 100m2. Fertiliser shall be watered in immediately after application. Irregularities in the grass and turf shall be watered in immediately after application. Grass and turf areas shall be kept mown to maintain a healthy and vigorous sward. Mowing height: 30-50mm.

TREE PRUNING

Trees to be underpruned to a clear height of 2500mm. The tree canopies are to be pruned so that no branches are within 3000mm of a building or fence

WEED ERADICATION

Eradicate weeds by environmentally acceptable methods using a non-residual glyphosate herbicide (eg. "Roundup") in any of its registered formulae, at the recommended maximum rate. Regularly remove by hand, weed growth that may occur or recur throughout grassed, planted and mulched areas. Remove weed growth from an area 750mm diameter around the base of trees in grassed areas. Continue eradication throughout the course of the works and during the maintenance period.

SOIL SUBSIDENCE

Any soil subsidence or erosion which may occur after the soil filling and preparation operations shall be made good by the landscape contractor at no cost to the client.

MAINTENANCE PERIOD: (26 Weeks) - Confirm with Project Manager

IRRIGATION PERFORMANCE SPECIFICATION NOTES

IRRIGATION OVERVIEW - Confirm with Project Manager at tender stage

EXTENT (Setback and Carpark, Landscape Areas)

All mass planting landscape areas and trees are to have full coverage by a fully automatic irrigation system. The design, materials and installation are to be in accordance with Sydney Water Codes and all relevant Australian Standards.

1. An automatic irrigation system is to be installed to all turf and garden bed areas.

2. The irrigation system shall be designed and installed by a licensed contractor to relevant Australian standards and Sydney water guidelines.

3. The irrigation system shall be connected into the rainwater tank system and pump

DRIPLINE

Provide 13mm dripline to all garden bed areas with appropriate 13mm joiners. Dripline to be Toro drip or similar with 400mm centre drippers.

Install line at 500mm spacings with the first line to be 150mm in from edge. Install dripline after planting and prior to mulching to allow for an adequate mulch cover. Anchor at 1.5m maximum intervals with u-shaped stakes. Dripline pattern to suit planting.

CONTROL VALVES

24v solenoid actuated hydraulic valve with flow control. Control valves to be Toro ezflow series solenoids 25mm or approved equal. Provide a gate valve of the same size immediately upstream of each valve.

House both valves in a high impact plastic valve box with a high impact plastic cover at finished ground level. Support the box with bricks on each side. Controller to be Toro greenkeeper or approved equal with a rain fall switch.

Filter to be installed equal to Toro y filter 75mm screen filter.

CONTROL WIRES

Connect the control valves and soil moisture sensor to the controller with double insulated underground cables laid alongside piping where possible. Lay intertwined for their full length without joints except at the valves and branches off common wires. Provide waterproof connectors.

Provide a backflow prevention device to Sydney water standards AS 3500.

RELEVANT AUSTRALIAN STANDARDS

Soil: AS4419, AS3743, AS4454.

Mulch: AS4454.

Tree Stock: AS2303.

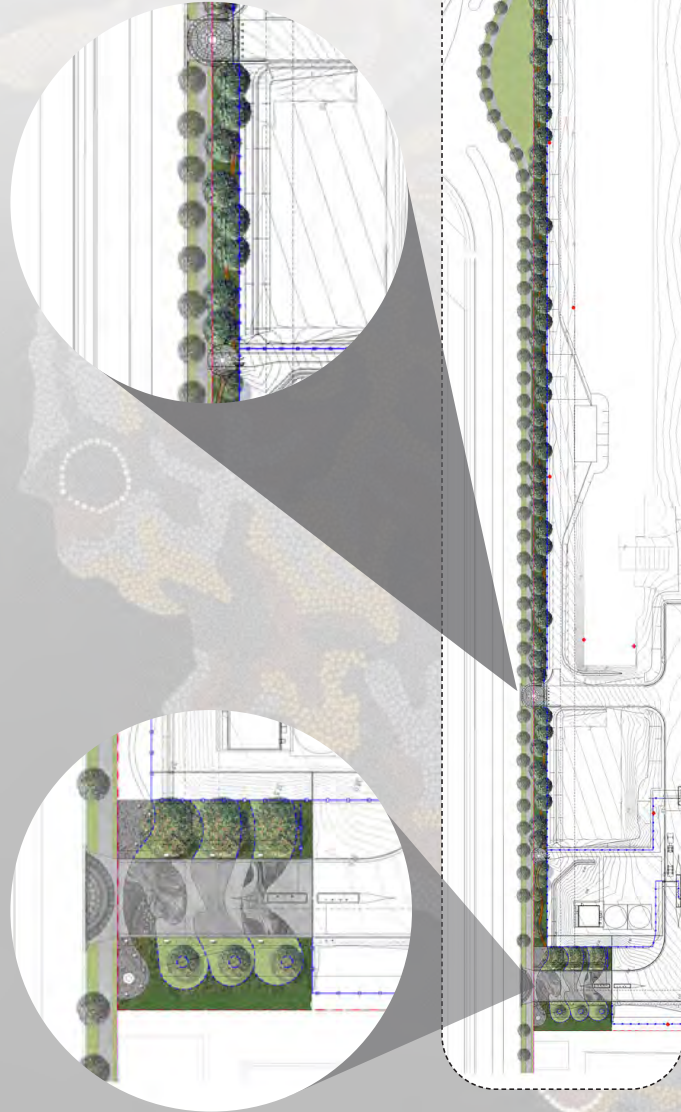
Pruning: AS4373.

Tree Protection: AS4970.

Contractors to comply with the above Australian Standards.



SONGLINES



Songlines connect people and country.

Songlines are the Aboriginal walking routes that crossed the country, linking important sites and locations. Before colonisation they were maintained by regular use, burning off and clearing.

The term 'Songline' describes the features and directions of travel that were included in a song that had to be sung and memorised for the traveller to know the route to their destination. Certain Songlines were referred to as 'Dreaming Pathways' because of the tracks forged by Creator Spirits during the Dreaming. These special Songlines have specific ancestral stories attached to them. They are recorded in song, stories, dance and art passed down through thousands of years. They provide connection to knowledge, customs, and ceremony for many Aboriginal groups. They are intricate maps that describe everything from trade routes to billabongs, bush food – and are mirrored by sky Songlines that help navigation over vast distances.

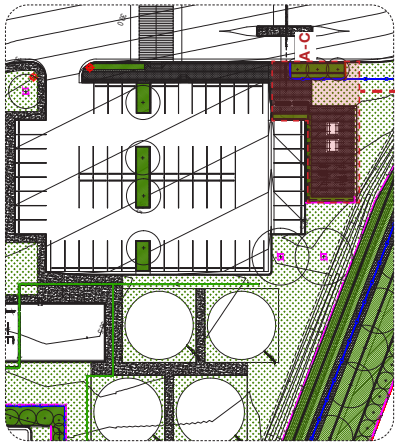
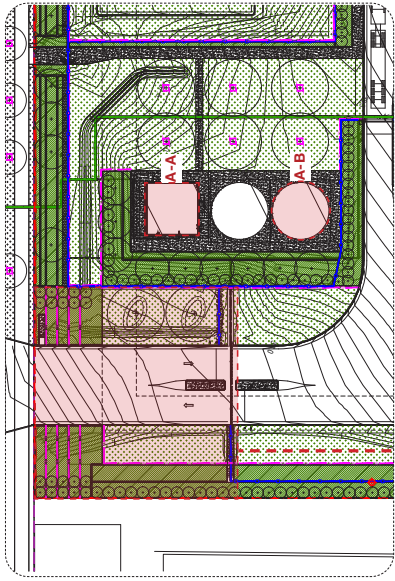


PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 WAMPE RD, KEMPS CREEK NSW	SONGLINES	H8-21008	SSDA RE-SUBMISSION	NTS	J	17.02.2023	KM	DV	L18

LANDSCAPE CONCEPT PLAN

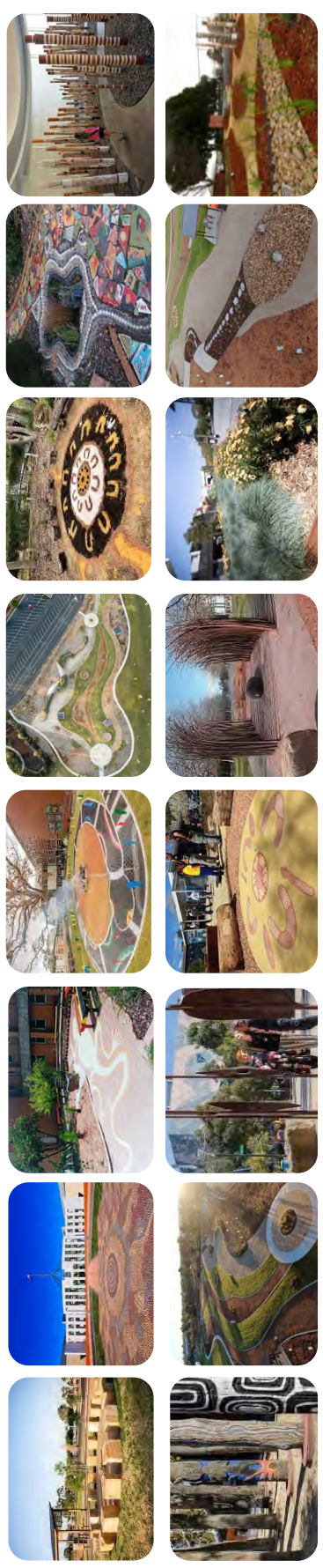


- KEY**
- A-A** FIRST NATIONS ARTWORK ON FIRE PUMP ROOM BUILDING
 - A-B** FIRST NATIONS ARTWORK ON FIRE TANK
 - A-C** INCORPORATE ARTWORK INTO SHADE STRUCTURE OVER STAFF COURTYARD
 - L-A** ARTWORK INTEGRATED WITH ENTRY ARRIVAL LANDSCAPE
 - L-B** ARTWORK INTEGRATED INTO STAFF COURTYARD AREA

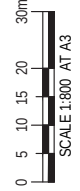


- L-A**
- LANDSCAPE PATTERNS USING ENDEMIC SPECIES
 - ARTWORK ON ROAD SURFACE
 - INTEGRATE MOUNDS WITH GROUNDPLANE TREATMENTS
 - INTERPRETIVE SIGNAGE + LIGHTING DESIGN (FEATURE)

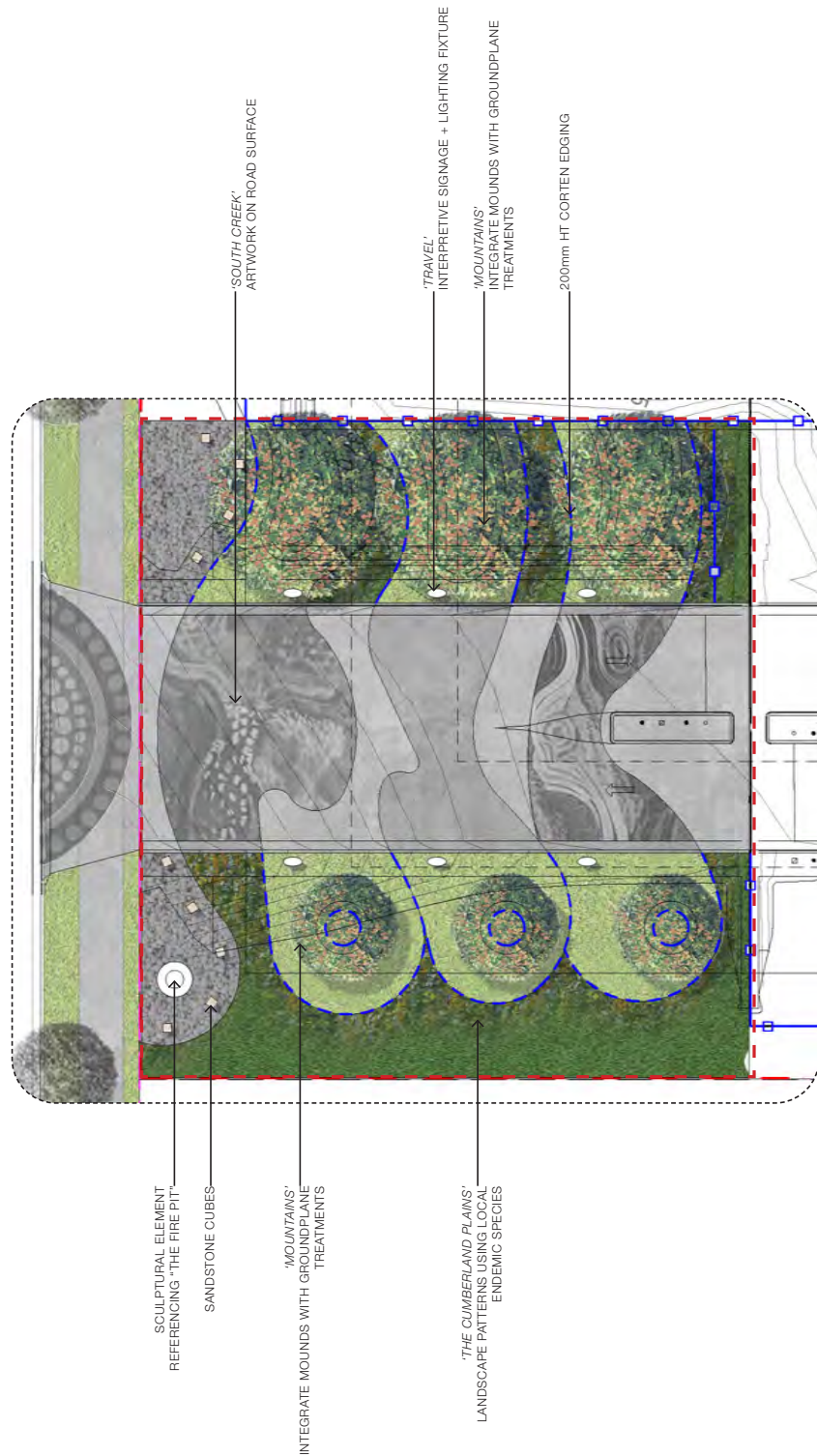
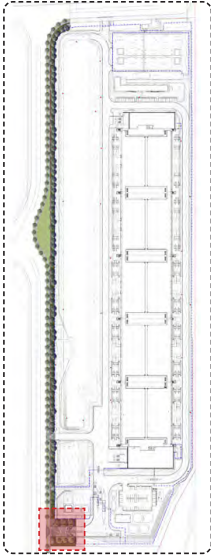
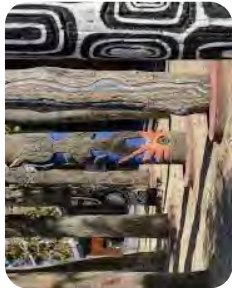
- L-B**
- CUSTOM DESIGN FURNITURE
 - PATTERNS + ARTWORK IN GROUND SURFACE
 - BUSH TUCKER GARDENS
 - INTERPRETIVE SIGNAGE
 - LIGHTING DESIGN (FEATURE)



PROJECT	SYD05-06-07 KEMPS CREEK LOT 2 MAMFRE RD, KEMPS CREEK NSW	DRAWING TITLE	LANDSCAPE CONCEPT PLAN	PROJECT NO.	H8-21008	PURPOSE	SSDA RE-SUBMISSION	SCALE	1:800 @A3	REVISION	J	DATE	17.02.2023	DRAWN	KM	CHECKED	DV	PAGE	L 19
																			



ENTRY ARRIVAL LANDSCAPE



PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMRE RD, KEMPS CREEK NSW	ENTRY ARRIVAL LANDSCAPE	HB-21008	SSDA RE-SUBMISSION	1:250 @A3	J	17.02.2023	KM	DV	L20

SCALE 1:250 AT A3

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3D VIEW



KEYPLAN



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PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMFRE RD, KEMPS CREEK NSW	3D VIEW	HB-21008	SSDA RE-SUBMISSION	NTS	J	17.02.2023	KM	DV	L21

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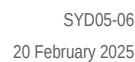


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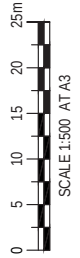
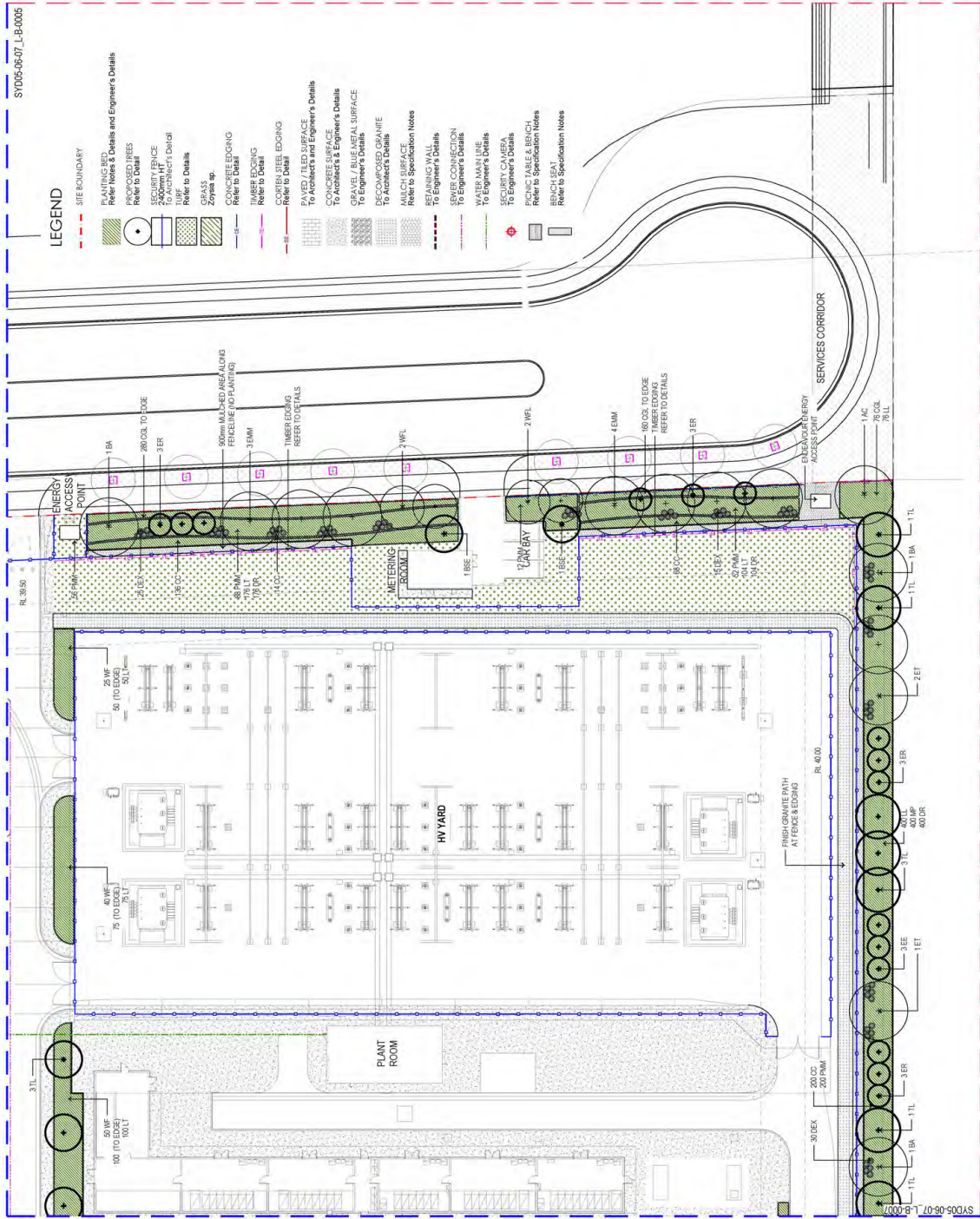


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SYDD05-06-07 KEMPS CREEK LOT 2 WAMPE RD, KEMPS CREEK NSW	LANDSCAPE PLAN 04	H8-21008	SSDA RE-SUBMISSION	1:500 @A3	J	17.02.2023	KM	DV	L26

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APPENDIX A: LANDSCAPE DOCUMENTATION



PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMFRE RD, KEMPS CREEK NSW	LANDSCAPE PLAN 06	HB-21008	SSDA RE-SUBMISSION	1:500 @A3	J	17.02.2023	KM	DV	L28

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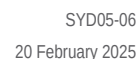
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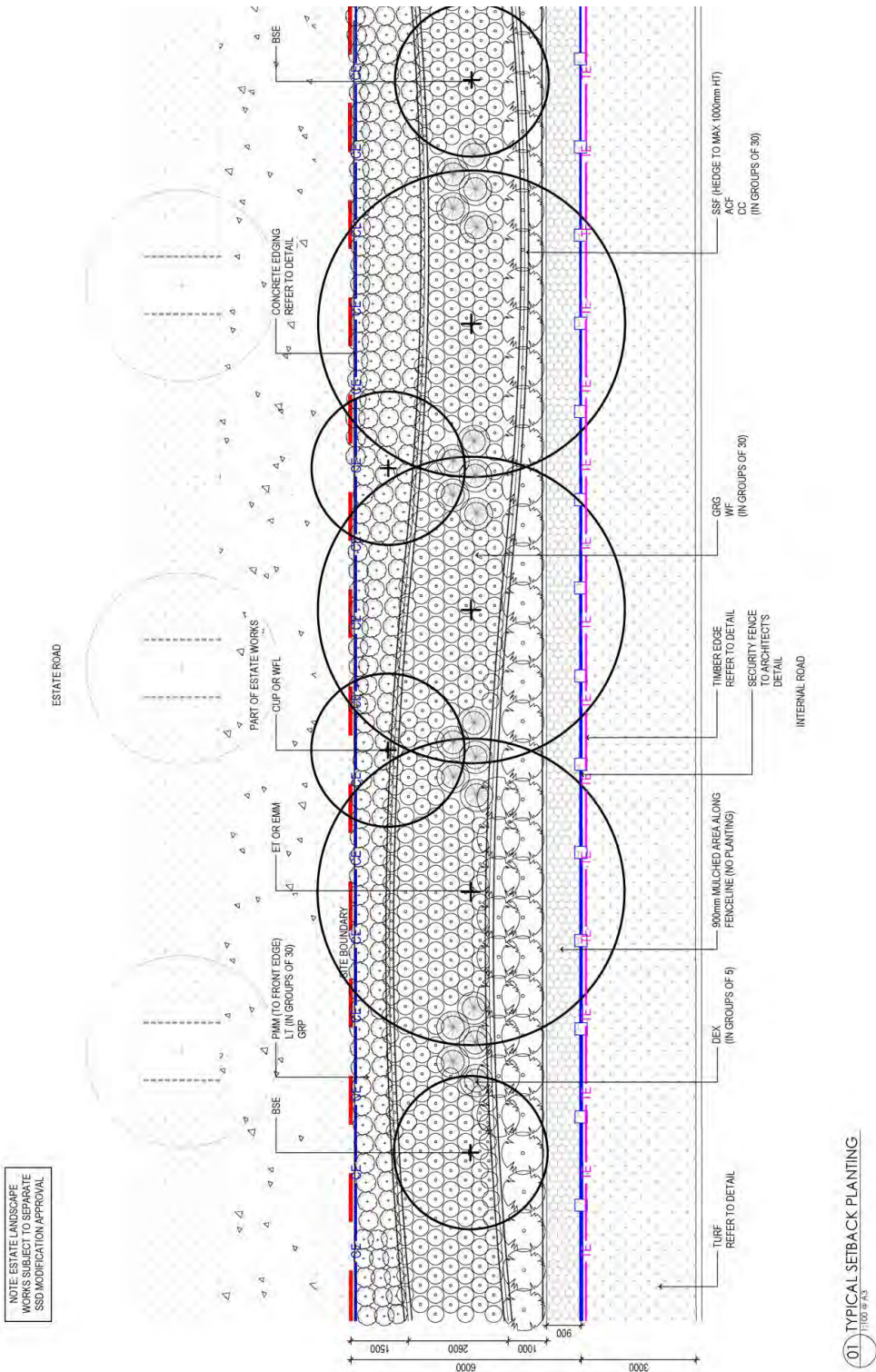
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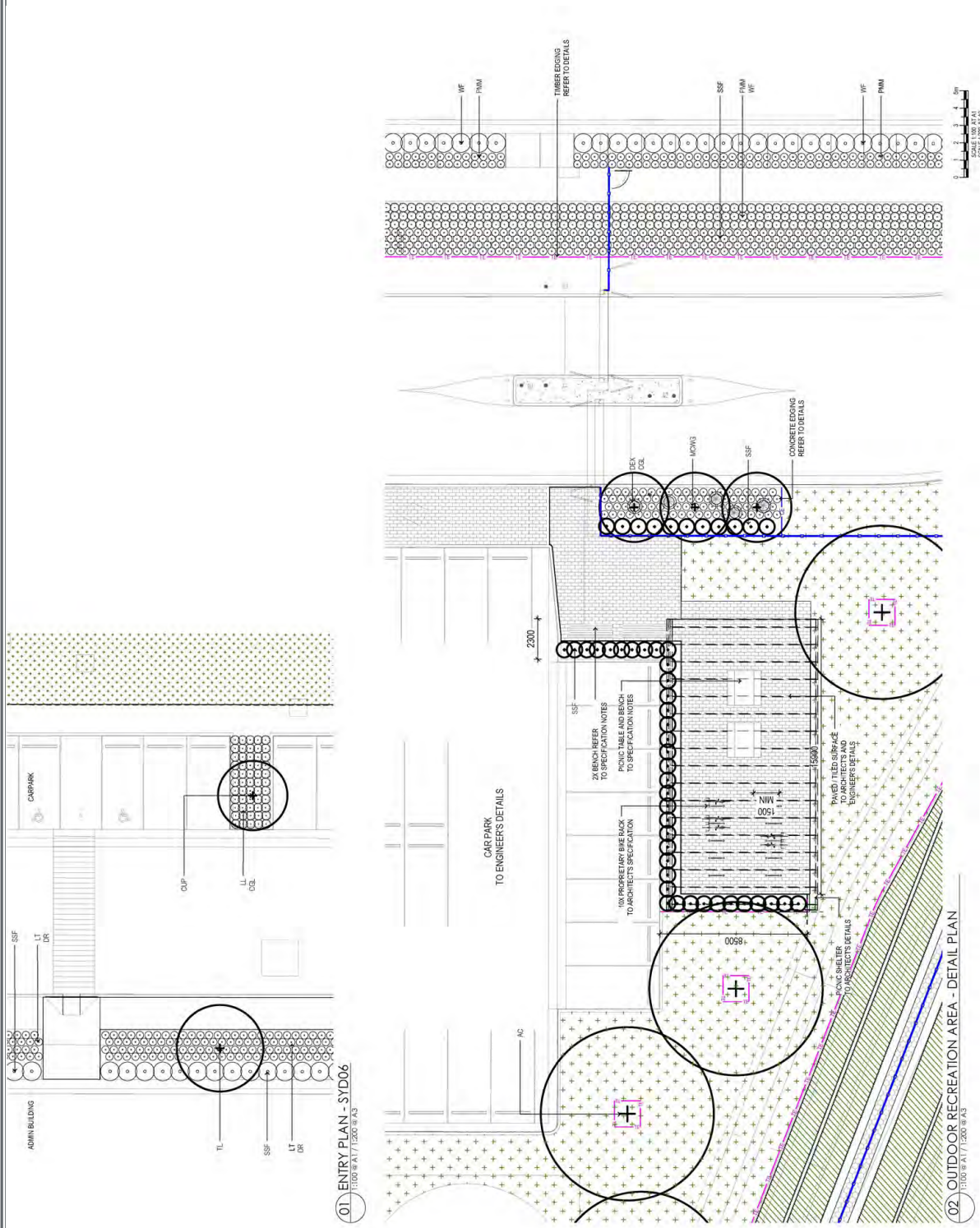


APPENDIX A: LANDSCAPE DOCUMENTATION



PROJECT	DRAWING TITLE	PURPOSE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMFRE RD, KEMPS CREEK NSW	LANDSCAPE DETAIL PLAN 01	SSDA RE-SUBMISSION	J	17.02.2023	KM	DV	L33

APPENDIX A: LANDSCAPE DOCUMENTATION



PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK LOT 2 MAMFRE RD, KEMPS CREEK NSW	LANDSCAPE DETAIL PLAN 02	HB-21008	SSDA RE-SUBMISSION	AS SHOWN	J	17.02.2023	KM	DV	L34



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01 SECTION A-A
1:50 (SHEET 11 OF 18)

2000 BUILDING

2000 PATHWAY

3000 INTERNAL DRIVEWAY

3000 TURF VERGE (INFRASTRUCTURE)

6000 LANDSCAPE SETBACK

2500 FOOT PATH / BIKE PATH

2000 TURF VERGE

ESTATE ROAD

ESTATE WORKS BY OTHERS

LOT BOUNDARY

3000 MIN.

800

2000 MIN.

2000

1:4

CONCRETE EDGING
REFER TO SERVICES
ESTATE SERVICES
BY OTHERS

900mm MULCHED AREA ALONG FENCELINE (NO PLANTING)

2400mm HT SECURITY FENCE
REFER TO ARCHITECT'S DETAIL

TURF
REFER TO DETAIL

SERVICES AND INFRASTRUCTURE ZONE
REFER TO ENGINEERS' DRAWINGS

KERB BY OTHERS

PLANT TREES IN LOCALIZED MOUNDING

CLEAR TRUNK

1100

1800

3000

TURF VERGE & SERVICES

GARDEN BED

BATTER VEGETATION

SOUTH ADJACENT LAND

LOW PLANTING FOR SECURITY

2400mm HT SECURITY FENCE
REFER TO ARCHITECT'S DETAIL

TURF
REFER TO DETAIL

SERVICES AND INFRASTRUCTURE ZONE
REFER TO ENGINEERS' DRAWINGS

KERB BY OTHERS

900mm MULCHED AREA ALONG FENCELINE (NO PLANTING)

CONCRETE EDGING
REFER TO SERVICES
ESTATE SERVICES
BY OTHERS

1:4

2000 MIN.

800

3000 MIN.

LOT BOUNDARY

2500 FOOT PATH / BIKE PATH

2000 TURF VERGE

ESTATE ROAD

ESTATE WORKS BY OTHERS

LOT BOUNDARY

3000 LANDSCAPE SETBACK

3000 TURF VERGE (INFRASTRUCTURE)

2000 PATHWAY

BUILDING

2400mm HT SECURITY FENCE
REFER TO ARCHITECT'S DETAIL

TURF
REFER TO DETAIL

SERVICES AND INFRASTRUCTURE ZONE
REFER TO ENGINEERS' DRAWINGS

KERB BY OTHERS

900mm MULCHED AREA ALONG FENCELINE (NO PLANTING)

CONCRETE EDGING
REFER TO SERVICES
ESTATE SERVICES
BY OTHERS

1:4

2000 MIN.

800

3000 MIN.

LOT BOUNDARY

2500 FOOT PATH / BIKE PATH

2000 TURF VERGE

ESTATE ROAD

ESTATE WORKS BY OTHERS

LOT BOUNDARY

3000 LANDSCAPE SETBACK

3000 TURF VERGE (INFRASTRUCTURE)

2000 PATHWAY

BUILDING

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REFER TO ENGINEERS' DRAWINGS

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TURF
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SERVICES AND INFRASTRUCTURE ZONE
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ESTATE ROAD

ESTATE WORKS BY OTHERS

LOT BOUNDARY

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3000 TURF VERGE (INFRASTRUCTURE)

2000 PATHWAY

BUILDING

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TURF
REFER TO DETAIL

SERVICES AND INFRASTRUCTURE ZONE
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3000 MIN.

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BUILDING

2400mm HT SECURITY FENCE
REFER TO ARCHITECT'S DETAIL

TURF
REFER TO DETAIL

SERVICES AND INFRASTRUCTURE ZONE
REFER TO ENGINEERS' DRAWINGS

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CONCRETE EDGING
REFER TO SERVICES
ESTATE SERVICES
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1:4

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800

3000 MIN.

LOT BOUNDARY

2500 FOOT PATH / BIKE PATH

2000 TURF VERGE

ESTATE ROAD

ESTATE WORKS BY OTHERS

LOT BOUNDARY

3000 LANDSCAPE SETBACK

3000 TURF VERGE (INFRASTRUCTURE)

2000 PATHWAY

BUILDING

2400mm HT SECURITY FENCE
REFER TO ARCHITECT'S DETAIL

TURF
REFER TO DETAIL

SERVICES AND INFRASTRUCTURE ZONE
REFER TO ENGINEERS' DRAWINGS

KERB BY OTHERS

900mm MULCHED AREA ALONG FENCELINE (NO PLANTING)

CONCRETE EDGING
REFER TO SERVICES
ESTATE SERVICES
BY OTHERS

1:4

2000 MIN.

800

3000 MIN.

LOT BOUNDARY

2500 FOOT PATH / BIKE PATH

2000 TURF VERGE

ESTATE ROAD

ESTATE WORKS BY OTHERS

LOT BOUNDARY

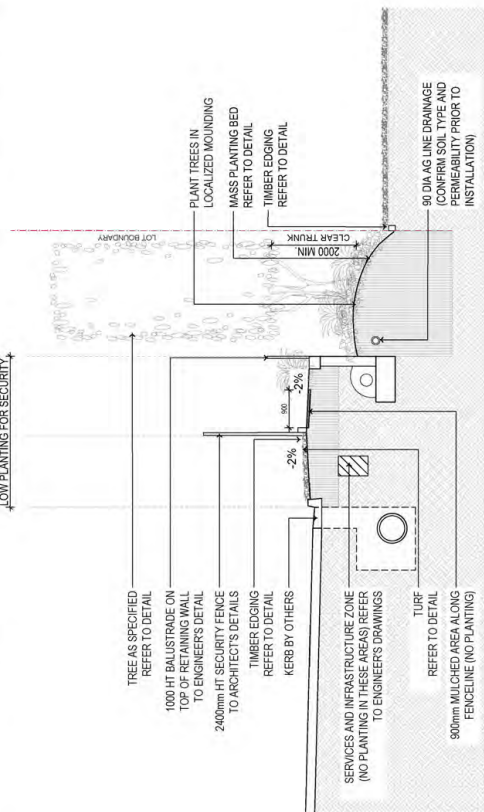
3000 LANDSCAPE SETBACK

3000 TURF VERGE (INFRASTRUCTURE)

2000 PATHWAY

BUILDING

2



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ESTATE WORKS BY OTHERS

2500
FOOTPATH / BIKEPATH

2000
TURF VERGE

1000
TURF

LOT BOUNDARY

6000
LANDSCAPE SETBACK

3000
TURF VERGE AND UTILITIES

1500
FOOTPATH

3000
FUTURE CAR PARK

3000

3000

3000

2000 MIN CLEAR TRUNK

600

2400mm HT SECURITY FENCE TO ARCHITECTS DETAIL

SERVICES AND INFRASTRUCTURE ZONE (NO TREES IN THIS ZONE) REFER TO ENGINEERS DRAWINGS

TURF REFER TO DETAIL

TREE AS SPECIFIED REFER TO DETAIL

CONCRETE EDGING REFER TO DETAIL

MASS PLANTING BED REFER TO DETAIL

900mm MULCHED AREA ALONG FENCELINE (NO PLANTING)

TIMBER EDGING REFER TO DETAIL

KEYPLAN

01 SECTION C-C
1:350 @ A1 / 1:100 @ A3



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APPENDIX A: LANDSCAPE DOCUMENTATION

SPECIFICATION NOTES

SERVICES

Before landscape work is commenced the Landscape Contractor is to establish the position of all service lines and ensure tree planting is carried out at least 3 metres away from these services. Service lids, vents and hydrants shall be left exposed and not covered by any landscape finishes (turfing, paving, garden beds etc). Finish adjoining surfaces flush with pit lids.

SOIL: Garden beds and turf areas (Confirm strategy at tender stage)

- a) SITE TOPSOIL: Treated to SESL Specifications prior to re-use to AS 4419
Sample to be approved by Landscape Architect
- b) IMPORTED SOIL: 300mm Depth premium garden mix from ANL to AS 4419

MULCH

APPLICATION: Place mulch to the required depth, (refer to drawings) clear of plant stems, and rake to an even surface finishing 25mm below adjoining levels. Ensure mulch is watered in and tamped down during installation.

IRrigation

Type 1 (Mass planting) Hort Bark by ANL
From mature trees, graded in size from 15mm to 30mm, free from wood slivers. Dark brown in colour and texture.
Sample to be approved by Landscape Architect. Depth: 75mm

PLANT MATERIAL

All plants supplied are to conform with those species listed in the Plant Schedule on the drawings. Generally plants shall be vigorous, well established, hardened off, of good form consistent with species or variety, not soft or forced, free from disease or insect pests with large healthy root systems and no evidence of having been restricted or damaged. Trees shall have a leading shoot. Immediately reject dried out, damaged or unhealthy plant material before planting. All stock is to be container grown for a minimum of 6x (6) months prior to delivery to site.

STAKING AND TYING

Stakes shall be straight hardwood, free from knots and twists, pointed at one end and sized according to size 200litre 3x(180x50x50mm)
Ties shall be 50mm wide white hessian webbing or approved equivalent nailed or stapled to stake. Drive stakes a minimum one third of their length, avoiding damage to the root system, on the windward side of the plant.

FERTILISER

MASS PLANTING AREAS: Fertiliser shall be 'Nutricote' or approved equivalent in granule form intended for slow release of plant nutrients over a period of approximately nine months. Thoroughly mix fertiliser with planting mixture at the recommended rate, prior to installing plants.

TURF: Wintergreen Couch (Refer Council)

FURNITURE:

BENCH

Type: Moon Bench - Hardwood slate and Hot-dipped galvanised steel frame
Size: 2500 x 770 x 400mm
Available: Landmark Open Space Structures and Solutions Ph: 1300 766 230

NOTE: Client and architect to approve selection prior to ordering.

SANDSTONE BLOCKS

Type: Hawkesbury (Sawn)
Size: 500 x 500 x 500mm
Available: Gosford Quarries Ph: 8555 8282

LANDSCAPE MAINTENANCE PROGRAM

Maintenance shall mean the care and maintenance of the landscape works by accepted horticultural practice as rectifying any defects that become apparent in the landscape works under normal use. This shall include, but shall not be limited to, watering, mowing, fertilising, re-seeding, re-turfing, weeding, pest and disease control, staking and tying, replanting, cultivation, pruning, aerating, renovating, top dressing, maintaining the site in a clean and tidy condition as follows:-

GENERAL

The landscape contractor shall maintain the landscape works for the term of the maintenance (or Plant establishment) period to the satisfaction of the council. The landscape contractor shall attend to the site on a weekly basis. The maintenance period shall commence at practical completion and continue for a period of fifty two (52) weeks.

WATERING

Grass, trees and garden areas shall be watered regularly so as to ensure continuous healthy growth.

RUBBISH REMOVAL

During the term of the maintenance period the landscape contractor shall remove rubbish that may occur and reoccur throughout the maintenance period. This work shall be carried out regularly so that at weekly intervals the area may be observed in a completely clean and tidy condition.

REPLACEMENTS

The landscape contractor shall replace all plants that are missing, unhealthy or dead at the Landscape Contractor's cost. Replacements shall be of the same size, quality and species as the plant that has failed unless otherwise directed by the Landscape Architect. Replacements shall be made on a continuing basis not exceeding two (2) weeks after the plant has died or is seen to be missing.

STAKES AND TIES

The landscape contractor shall replace or adjust plant stakes, and tree guards as necessary or as directed by the Landscape Architect. Remove stakes and ties at the end of the maintenance period if so directed.

PRUNING

General: Prune to reflect the natural growth flowering and regrowth habit of the individual species. Shrubs: Prune after flowering - Spring and Summer and on a spot basis as required.
Design trimming: Schedule trimming at times which will maintain the character and shape of hedges. Allow up to three times per season.
Tip pruning: To encourage development of new shoots during the active growing season. Prune to remove buds before the flowering season in those plants that have terminal flowers.

Radical pruning: To maintain a hedge or formal shape or when a particular problem, growth habit, damage, or disease requires branch removal.

Trees: Prune to eliminate diseased or damaged growth, avoid inter-branch contact and thin out crowns in a natural manner, maintain sight lines to signs and lights, or maintain visibility for personal security. Tree branch removal to AS 4373. Give notice and engage a suitably qualified 'arborist'.

MULCHED SURFACES

All mulched surfaces shall be maintained in a clean and tidy condition and be reinstated if necessary to ensure that a depth of 75mm is maintained. Ensure mulch is kept clear of plant stems at all times. Remove all mulching materials off lawn or paved areas and maintain a clean and tidy appearance when viewed on a weekly basis.

PEST AND DISEASE CONTROL

The landscape contractor shall spray against insect and fungus infestation with all spraying to be carried out in accordance with the manufacturer's directions. Report all instances of pests and diseases (immediately that they are detected) to the Landscape Architect.

GRASS AND TURF AREAS

The landscape contractor shall maintain all grass and turf areas by watering, weeding, re-seeding, rolling, mowing, trimming or other operations as necessary. Seed and turf species shall be the same as the original specified mixture. Grass and turf areas shall be sprayed with approved selective herbicide against broad leaved weeds as required by the manufacturer's directions in accordance with the manufacturer's directions. Grass as turf shall be fertilised in accordance with the manufacturer's directions. Grass at a rate of 200kg per 100m2. Fertiliser shall be watered in immediately after application. Irregularities in the grass and turf shall be watered in immediately after application. Grass and turf areas shall be kept mown to maintain a healthy and vigorous sward. Mowing height: 30-50mm.

WEED ERADICATION

Eradicate weeds by environmentally acceptable methods using a non-residual glyphosate herbicide (eg 'Roundup') in any of its registered formulae, at the recommended maximum rate. Regularly remove by hand, weed growth that may occur or recur throughout grassed, planted and mulched areas. Remove weed growth from an area 750mm diameter around the base of trees in grassed areas. Continue eradication throughout the course of the works and during the maintenance period.

SOIL SUSIDENCE

Any soil subsidence or erosion which may occur after the soil filling and preparation operations shall be made good by the landscape contractor at no cost to the client.

MAINTENANCE PERIOD

The maintenance will be implemented for 12 months (52 weeks)

IRRIGATION NOTES

IRRIGATION OVERVIEW - Confirm extent (with nominated irrigation contractor) at tender stage

EXTENT

All mass planting landscape areas and trees are to have full coverage by a fully automatic irrigation system. The design, materials and installation are to be in accordance with Sydney Water Codes and all relevant Australian Standards.

- An automatic irrigation system is to be installed to all turf and garden bed areas.
- The irrigation system shall be designed and installed by a licensed contractor to relevant Australian standards and Sydney water guidelines.
- The irrigation system shall be connected into the rainwater tank system and pump

DRIPLINE

Provide 13mm dripline to all garden bed areas with appropriate 13mm joiners. Dripline to be Toro drip or similar with 400mm centre drippers. Install line at 500mm spacings with the first line to be 150mm in from edge.
Install dripline after planting and prior to mulching to allow for an adequate mulch cover. Anchor at 1.5m maximum intervals with u-shaped stakes. Dripline pattern to suit planting.

CONTROL VALVES

24v solenoid actuated hydraulic valve with flow control. Control valves to be Toro ezflow series solenoids 25mm or approved equal. Provide a gate valve of the same size immediately upstream of each valve. House both valves in a high impact plastic valve box with a high impact plastic cover at finished ground level. Support the box with bricks on each side.

Controller to be Toro greenkeeper or approved equal with a rain switch.

Install a master valve/pressure regulating valve equal to Toro p220 with exreg pressure regulation valve. Filter to be installed equal to Toro y filter 75mm screen filter.

CONTROL WIRES

Connect the control valves and soil moisture sensor to the controller with double insulated underground cables laid alongside piping where possible. Lay interwined for their full length without joints except at the valves and branches off common wires. Provide waterproof connectors.

Provide a backflow prevention device to Sydney water standards AS 3500.

RELEVANT AUSTRALIAN STANDARDS

Soil: AS4419, AS3743, AS4454.

Mulch: AS4454.

Tree Stock: AS2303.

Pruning: AS4373.

Tree Protection: AS4670.

Contractors to comply with the above Australian Standards.



PROJECT	DRAWING TITLE	PROJECT NO.	PURPOSE	SCALE	REVISION	DATE	DRAWN	CHECKED	PAGE
SYD05-06-07 KEMPS CREEK	LANDSCAPE SPECIFICATION +	HB-21008	SSDA	NTS	J	17.02.2023	KM	DV	L39
LOT 2 MAMRE RD, KEMPS CREEK NSW	MAINTENANCE NOTES		RE-SUBMISSION						

APPENDIX B: MAINTENANCE AUDIT FORM

This form is to be completed by the Asset Manager responsible for landscape assets. Two copies of this completed form are required. One is to be issued to maintenance staff for action. The second is to be filed for records. Extra pages can be attached to the electronic record if needed

Date Of Inspection: _____

Inspected By: _____

LOCATION	LANDSCAPE TYPE / AREA	ISSUE	REMEDATION WORKS REQUIRED	COST ESTIMATE	DATE TO BE COMPLETED	VARIATION / DEFECT?

Signed: _____

Date: _____

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Appendix D Water Management Plan

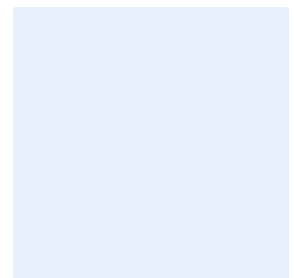
Kemps Creek Data Centre

Water Management Plan

Reference: P523907 SYD05

Revision: 1

2025-13-03



Document control record

Document prepared by:

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Document control					aurecon
Report title		Water Management Plan			
Document code		Kemps Creek Data Centre	Project number		P523907 SYD05
Client contact		Daniel Robinson	Client reference		
Rev	Date	Revision details/status	Author	Reviewer	Approver
A	2024-11-21	Draft	Adele van der Winden	Will Legg	Natalie Jongebloed
0	2024-12-12	Final	Adele van der Winden	Will Legg	Natalie Jongebloed
1	2025-03-13	Revised based on Department of Planning and Environment feedback	Natalie Jongebloed	Peter Fawcett	Peter Fawcett
Current revision		1			

Approval			
Author		Approver	
Name	Adele van der Winden	Name	Peter Fawcett
Title	Civil Engineer	Title	Principal, Environment and Planning

Glossary

Abbreviation	Meaning
AWCR	Advanced Water Recycling Centre
CEMP	Construction environmental management plan
CoC	Conditions of consent
DCOM	Data Centre Operations Manager
DN	Nominal diameter
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	Environment Planning and Assessment Act 1979
EPL	Environment protection licence
NSW EPA	NSW Environment Protection Authority
OCHP	Operational Complaints Handling Protocol
OEMP	Operational environmental management plan
SSD	State Significant Development
SSD-9522	The development consent for the Kemps Creek Warehouse, Logistics and Industrial Facilities Hub (Applicant number SSD-9522)
TDS	Total Dissolved Solids
the Project	Kemps Creek Data Centre
WMP	Water Management Plan



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1 Introduction

1.1 Context

Kemps Creek Data Centre (the Project) was constructed and is operated as part of the Mamre Road Development Precinct in the city of Penrith, Greater Western Sydney. This Data Centre plays a vital role in providing an advanced facility to support the growth and development of IT infrastructure across the Sydney Metropolitan Region and contributes to the enhanced promotion and creation of employment-generating opportunities. There are two State Significant Developments (SSDs) relevant to the Project: SSD 9522 (Kemps Creek Warehouse and Logistics Hub) which applies to the broader precinct, and SSD 10101987 (Kemps Creek Data Centre) which applies specifically to this Project. The Project will rely on water management infrastructure within the broader precinct (SSD 9522) to manage water quality and water quantity. Conditions of Consent for the Project (i.e., SSD 10101987) were granted on 13 July 2023.

1.2 Project description

The Project area is situated at 706-769 Mamre Road and lies within the Mamre Road Development Precinct, approximately 12 km southeast of Penrith and 40 km west of the Sydney central business district.

The Project involves the construction and operation of a Data Centre including two data storage buildings (SYD0506 and SYD07), 61 generators, substation, high voltage switch yard, 30 diesel storage tanks, office, internal access roads and landscaping (NSW Government, 2023). The Data Centre provides employment for 79 operational phase workers. Primary access to the Project is via the estate road of Bakers Lane.

The Kemps Creek Data Centre delivery consists of 3 Stages:

- Stage 1 – development of SYD05 building, including construction of:
 - SYD05 building shell and façade and fitout
 - High Voltage Power Yard
 - All external works including: internal site roads, western main carpark, generators to support building, site grading and plinths foundations to support western tanks.
- Stage 2 – development of SYD06 building, including construction of:
 - SYD06 building shell and façade and fitout
 - External works to support the SYD06 building shell.
- Stage 3 – development of SYD07 building, including construction of:
 - SYD07 building shell and façade and fitout
 - External works to support the SYD07 building shell.

The layout and location of these stages is located in Figure 1.

The operation of the data centre would require mechanical cooling and power systems (including emergency backup power generators) along with the necessary telecommunications links required for the site to carry out an efficient and effective operation.

The data centre once fully operational, provides employment for 79 operational phase workers. Primary access to the site is via the estate road off Bakers Lane. The site includes 120 car parking spaces (including six accessible spaces) and 23 bicycle parking spaces

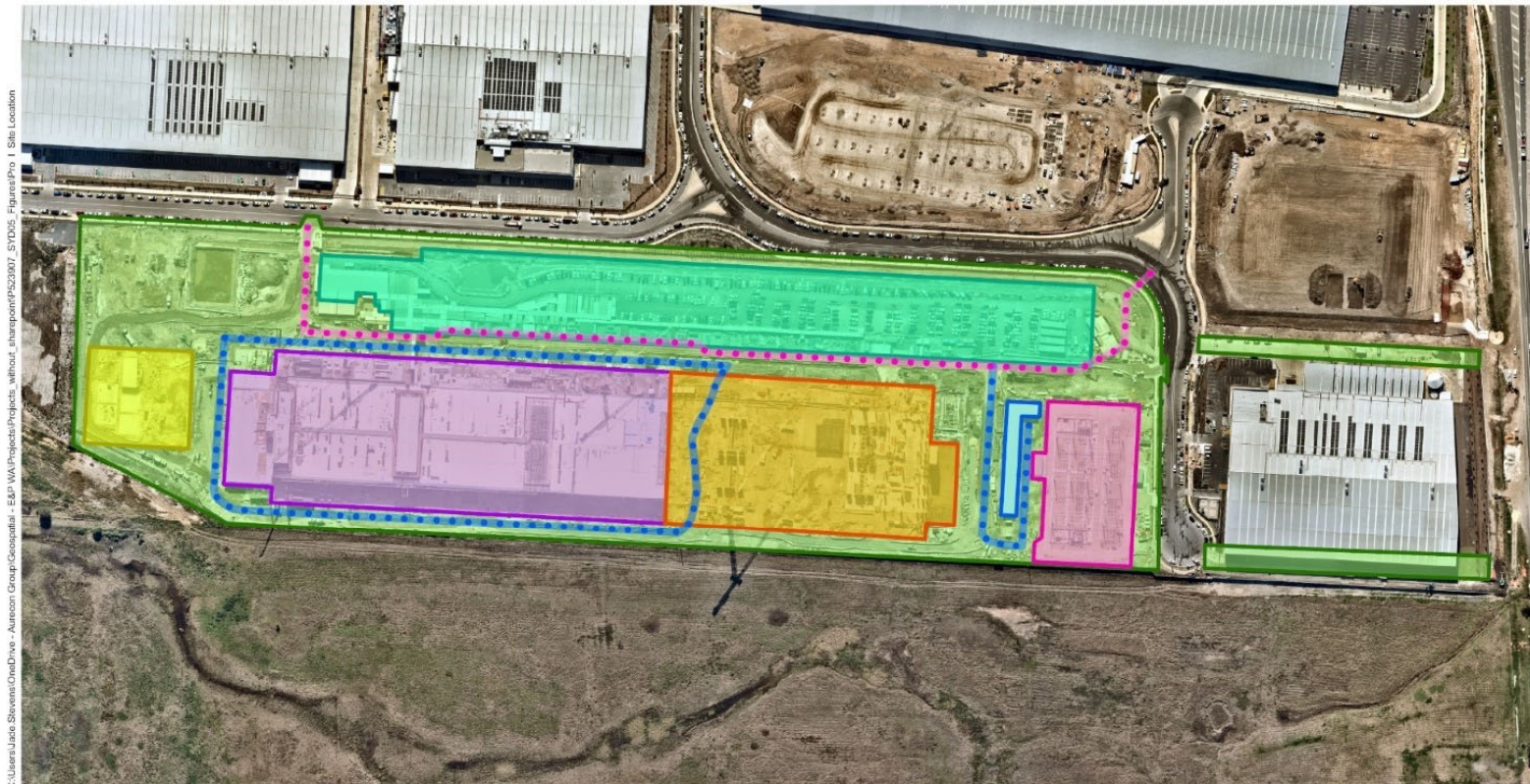


Figure 1-1: Kemps Creek Data Centre Project Staging

1.3 Purpose

The Project must meet the conditions detailed by the Minister for Planning and Public Spaces, as per the Development Consent (SSD-9522), Section 4.38 of the *Environmental Planning and Assessment Act 1979*. The specific environmental conditions relevant to this Water Management Plan (WMP) are the SSD condition of consent B43 and B44. In accordance with these conditions, this document comprises the WMP for the Kemps Creek Data Centre Project, and forms part of the Project's Operational Environmental Management Plan (OEMP).

This WMP defines the management measures and the practices and procedures to be implemented by the Proponent during operation of the Kemps Creek Data Centre to manage risks to the water environment. This Project does not require an Environment Protection Licence (EPL).

The WMP has been prepared with specific consideration of relevant measures to address requirements outlined in:

- The project SSD conditions of consent.
- Relevant mitigation measures outlined in the Environmental Impact Statement (EIS) (Willowtree Planning, 2021).
- Relevant legislation, guidelines and Australian Standards.

This WMP is applicable to all staff and subcontractors associated with operation of the Project including for SYD05, SYD06 and SYD07.

1.4 Objectives

This WMP provides a structured approach to the management of potential water impacts during the operation of the Kemps Creek Data Centre. This WMP defines the environmental management principles, processes, procedures, systems and tools to ensure effective environmental management.

The objectives of this WMP are specifically to:

- Provide a framework to conduct operational activities in a manner that manages risks to the environment with respect to operational water management.
- Provide a framework to implement required Project operational water management measures.
- Ensure the Proponent and its associated contractors are fully aware of their environmental responsibilities and are proactive in their approach to the management of water.
- Comply with relevant legislation.
- Prevent or minimise any material harm to the environment.
- Strive for continuous improvement in aspects of the project to enable new technologies and innovations to be implemented where practicable and feasible.

This WMP will be submitted for the approval of the Secretary of the Department of Planning, Housing and Infrastructure (the Planning Secretary) no later than one month prior to the commencement of operation of the Data Centre, or within such period otherwise agreed by the Secretary. Operation will not commence until written approval has been received from the Secretary.

2 Statutory and policy considerations

2.1 Relevant legislation and policy

Legislation relevant to this WMP includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act) and Regulations;
- *Protection of the Environment Operations Act 1997* (POEO Act);
- *Water Management Act 2000*; and
- Water Management (General) Regulation 2018.

Other relevant policy include:

- National Water Quality Management Strategy (Australian Government, 2018)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)

2.2 Project determination requirements

An EIS was prepared for the development in 2021, and specific environmental conditions exist under the project Determination. Conditions that are relevant to water quality management during the operational phase of the Kemps Creek Data Centre are presented in Table 2-1. A cross reference is also included to indicate where the condition is addressed within this plan or other project management documents.

An Environment Protection Licence (EPL) is not required for the development.

The management measures that will be implemented for the project are provided in Section 4.1 of this plan.

Table 2-1: Project Approval requirements relevant to water quality management

Condition no.	Project determination requirements	Addressed in the WMP	Where addressed
Obligation to minimise harm to the environment			
A1	In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	Yes	Section 1.4 Section 4.1
Discharge Limits			
B36	The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL.	Yes	Section 3.3 Section 4.2 Section 4.3
Stormwater Management System			

B37	Prior to the commencement of construction of the development, the Applicant must finalise the detailed design of the stormwater management system for the development. The system must: (a) be designed by a suitably qualified and experienced person(s); (b) be generally in accordance with the stormwater management system constructed under SSD-9522; (c) be in accordance with applicable Australian Standards; and (d) ensure that the system capacity has been designed in accordance with Australian Rainfall and Runoff (Engineers Australia, 2016) and Managing Urban Stormwater: Council Handbook (EPA, 1997) guidelines;	Yes	Section 3.2
B38	Prior to the commencement of operation, the Applicant must install the stormwater management system in accordance with the finalised detailed design (as required by condition B38) and ensure the system is operational.	Yes	Section 4.1
Flood management			
B39	Prior to the commencement of construction of the development, the Applicant must prepare a Construction Flood Emergency Response Plan to the satisfaction of the Planning Secretary. The Plan must form part of the CEMP required by conditions C2 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) address the provisions of the Floodplain Risk Management Guideline (OEH, 2007); (c) include details of: i. the flood emergency responses for construction phases of the development; ii. predicted flood levels; iii. flood warning time and flood notification; iv. assembly points and evacuation routes; v. evacuation and refuge protocols; and vi. awareness training for employees and contractors.	No	Not applicable to operational phase
B40	The Applicant must: (a) not commence construction until the Construction Flood Emergency Response Plan required by condition is approved by the Planning Secretary; and (b) implement the most recent version of the Construction Flood Emergency Response Plan approved by the Planning Secretary for the duration of the development.	No	Not applicable to operational phase

B41	Prior to the commencement of operation, the Applicant must prepare an Operational Flood Emergency Response Plan to the satisfaction of the Planning Secretary. The Plan must form part of the OEMP required by conditions C5 and must: (a) address the relevant requirements outlined under condition B39; and (b) include details of: i. the flood emergency responses procedures to be implemented during operation; ii. updated assembly points, refuge areas and evacuation routes; iii. flood warning signs and depth indicators; iv. refuge and evacuation protocols for all employees, contractors and visitors; and v. awareness training for operational employees and any relevant persons associated with the development.	No	OEMP Operational Flood Emergency Response Plan
B42	The Applicant must: (a) not commence operation until the Operational Flood Emergency Response Plan required by condition B41 is approved by the Planning Secretary; and (b) implement the most recent version of the Operational Flood Emergency Response Plan approved by the Planning Secretary for the duration of the development.	No	OEMP Operational Flood Emergency Response Plan

Water Management Plan

B43	Prior to the commencement of operation of the development, the Applicant must prepare a Water Management Plan to the satisfaction of the Planning Secretary. The Water Management Plan must form part of the OEMP required by condition C5 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) detail water use, metering, disposal and management on-site; (c) the management of wastewater streams on-site including the operation of the wastewater treatment plant (WWTP); (d) contingency measures to be implemented if the WWTP is out of operation (e) contain a Contaminated Water Retention Plan including: i. description of secondary containment including bunding; ii. protocols for the operation of the pollution control valve during pollution incidents; iii. disposal locations which are licenced to accept the contaminated water; iv. stormwater impact assessment criteria, including trigger levels for investigating and potential adverse surface water impacts; v. a protocol for the investigation and mitigation of identified exceedances of the stormwater impact assessment criteria; and vi. contain a Pollution Incident Response Management Plan (PIRMP).	Yes	(a) This WMP document and Appendix A (b) Section 3.1 and Section 4.3 (c) relevant requirements for the operation of the wastewater treatment plant (WWTP) will be revised subject to the construction of a WWTP on site (d) Section 3.4 and Section 3.5 (e) i. Section 3.3 ii. Section 3.3, Appendix A iii) Section 3.3 iv.- v. Section 4.2 vi. Appendix A
B44	The Applicant must: (a) not commence operation until the Water Management Plan required by condition B43 is approved by the Planning Secretary; and (b) implement the most recent version of the Water Management Plan approved by the Planning Secretary for the duration of the development.	Yes	Section 4.1

2.3 Standards and guidelines

The guidelines, specifications and policy documents referenced in this plan include:

- NSW Environment Protection Agency (NSW EPA), 2022, Approved Methods for the Sampling and Analysis of Water Pollutants in NSW.

Relevant local plans include:

- Penrith Local Environmental Plan 2010
- Penrith Development Control Plan 2014
- Draft Mamre Road Precinct Development Control Plan 2021

3 Water management system

3.1 Water supply

The Project area is connected to a potable water supply and a recycled water reticulation delivered by the estate developer (Altis Fraser Barings) under SSD 9522 (Arup, 2021)(NSW Government). Sydney Water will deliver the recycled water trunk network in the precinct, and recycled water is anticipated to be available from 2026 via the Upper South Creek Advanced Water Recycling Centre (AWRC). In the interim period only potable water is supplied (Sydney Water, 2021). The water supplied to Project is primarily used to supply cooling water to air handling units which are used to cool data storage servers within the data halls and electrical and mechanical plant rooms.

No tertiary wastewater treatment plant (WWTP) (to polish recycled water for industrial water use) has been constructed as part of SYD05 construction.

The water supply infrastructure includes:

- Spatial provision for a potential future tertiary WWTP
- Separate potable and fire water supplies from the estate's potable water main (DN300).
- Industrial water supply from estate recycled water main (DN150) once available
- 4 x industrial water tanks (each 1.25ML), cumulative volume of 5.0ML, with one tank commissioned as part of SYD05.
- 2 x fire water tanks, cumulative volume of 400kL
- 1 x rainwater harvesting tank, volume of 100kL.
- 2 x points of sewer discharge from site:
 - Low Pressure system discharge at northwest corner of site.
 - Gravity point of connection (DN 225) to estate sewer system.
- 3 x sewer holding tanks:
 - 2 x tanks with combined volume 250kL near northwest corner of site.
 - 1 x tank with volume 60kL near eastern boundary of the site.
- 1 x 20kL fire water containment tank – note that this is serving SYD06 data halls only.

Potable water and recycled water (once available) are supplied to Project area from the local water authority main at the northwest corner of the Project area. Potable water and recycled water are supplied to the industrial water- water storage tanks and fire water storage tanks. Once the AWRC is operational, the intent is that the recycled water network supplies the industrial water storage tanks. The recycled water will be supplemented by the potable water network where there is shortfall during peak demand (ARUP, 2024). In the interim, industrial water is supplied by potable water.

The four industrial water storage tanks (potable and recycled) are located together within a tank yard at the southwest corner of the Project area with an associated pumproom which contains all pumps and filtration equipment to reticulate water supplies to the Project. The fire water tanks are located to the east of the Project area vehicle entry with an associated pumproom and fire control room (ARUP, 2024). The storage tanks have been sized to provide 48hrs water supply to Project during the estimated 2 warmest days of the year. All onsite water supply infrastructure was designed to support the required water on the 2 warmest days of the year (ARUP, 2024).

The Project's domestic water supply is relatively minor at 2,000 litres per day. Rainwater falling on the Project area administration building roof is collected with the harvested rainwater drained to a 100,000-litre

storage tank adjacent to the industrial water tanks and pump room. The harvested rainwater will supply the Project's irrigation system (ARUP, 2024).

Water demand estimates are detailed within the Infrastructure Requirements Report (SYD05-06-07_C-R-0010) prepared by Arup and included in section 3.6. Points of connection are detailed below:

- Potable water is supplied from the Bakers Lane water connection to the north of the site initially through the industrial estate (SSD 9522).
- An industrial water reticulation network is installed, serving the SYD 05, 06 and 07 buildings. The industrial water system draws its water source in sequence as follows: rainwater tanks, potable water
- The site fire water supply is provided from the authorities water main on the estate road the north of the site.
- 60% of the roof water of the SYD 05-06 building is harvested for use in the evaporative cooling process and for landscape irrigation.

3.2 Stormwater management

The stormwater system for the broader SSD 9522 industrial estate provides water quality treatment including gross pollutant traps and bioretention basins to improve water quality and a detention basin to manage stormwater discharges from all sub-division areas within the estate including the Project site (ARUP, 2024). As it forms part of the broader SSD 9522, the stormwater system is managed by Altis Fraser Barings, rather than the Proponent.

Within the Project area, the SYD05/06 stormwater management system applies a traditional conveyance system comprising a pit and pipe system with several swales draining landscaped areas. The future SYD07 platform is to be hydro-seeded and drains via swales to a sediment basin prior to discharging to the estate stormwater basin at the northern boundary of the Project area (ARUP, 2024). The stormwater drainage arrangement is provided in Appendix B.

Ultimately, the stormwater runoff from the Project discharges to the wider industrial estate stormwater system which includes stormwater quality treatment in the form of a gross pollutant trap and bio-retention with treated flows discharging to a detention basin to manage stormwater quantity during flood events. Ultimately stormwater is discharged into South Creek (Willowtree Planning, 2021).

The SSD 9522 industrial estate stormwater quality treatment system has been designed to meet the Penrith City Council Development Control Plan (2014) mean annual pollutant load reduction targets:

- 90% reduction in the post development mean annual load of total gross pollutants (greater than 5mm)
- 85% reduction in the post development mean annual load of Total Suspended Solids (TSS)
- 60% reduction in the post development mean annual load of Total Phosphorus (TP)
- 45% reduction in the post development mean annual load of Total Nitrogen (TN)
- 90% reduction in Free Oils and Grease with no visible discharge

MUSIC modelling has been completed which demonstrates that no additional on-site stormwater quality treatments measures are required within the Project area to meet these pollution reduction targets (ARUP, 2024).

Although no onsite stormwater quality measures are required to achieve the pollutant reduction targets, a 340kL rainwater harvesting tank is proposed to capture 47% of the runoff from the SYD05/06 roof catchment and treat the runoff for reuse within the project area in evaporative cooling systems and for irrigation of landscaped areas.

Upstream of the rainwater harvesting tank, a Gross Pollutant Trap removes the larger pollutants and sediments. Additionally, oil and water separators serve connections from the HV switching station. This aims to capture any accidental fuel spillages prior to entering the stormwater network. Due to the additional treatment measures to that provided by the broader industrial estate (SSD 9522) stormwater quality treatment system, the Project achieves a slight improvement in pollutant reduction compared to the Penrith DCP (2014) pollutant load reduction targets (Willowtree Planning, 2021).

3.3 Contaminated water management

SYD05 comprises of stormwater and sewer discharges only. There are no contaminated water streams requiring retention or testing prior to discharge to the stormwater system. Sewer holding tanks have been provided due to insufficient capacity of the wider precinct infrastructure that Sydney Water are developing.

The SYD05 administration building and floor gullies from the water pump room (Industrial Water) discharge to the low pressure pump out system. Floor gullies and wash basins within SYD05 data halls and discharge from the data centre's cooling system drain to the Project's western sewer system (which is subsequently pumped out to the eastern gravity sewer connection). Most of the wastewater flows are from the cooling system which is seasonal. There is minimal discharge in the cooler, winter months when the cooling systems are not required (ARUP, 2024).

Water discharging from the cooling system is considered to have lower contaminants than that from sanitary waste streams. Incoming industrial water is re-circulated several times through the cooling system prior to discharge which primarily increases the Total Dissolved Solids (TDS), i.e., salt levels.

All chemicals and diesel are stored in secure areas/rooms within buildings. There are no external chemical or external diesel storage tanks. No chemicals/oils and diesel used by vendors for maintenance and repairs are permitted to be left onsite. No pollution control valves are proposed.

Diesel is stored in Belly Tanks within the generators. The tanks are designed to comply with AS1940 and are double walled so have secondary containment.

Chemical used for water treatment (Chlorine) is stored in the secured Pump House building, for use with the industrial water filtration.

Cleaning chemicals are stored in secured areas in the building.

Any substances left on site, such as when maintenance and repairs are ongoing, will be stored in portable bunding and within secure areas of the building.

Fire water used within the Project's battery rooms which store lithium-ion batteries drains to holding tanks and is pumped out to trade waste tankers following a fire event. Per Arup's technical memo, the site has two fire water tanks providing a cumulative volume of 400 kL and one fire water containment tank (servicing only the data halls in SYD06) with a volume of 20 kL. The SYD05 fire water drains into the Project's western sewer system (pumpstation and holding tanks) which is shut-off at the pumps when a battery room fire alarm is activated. All wastewater collected in the battery room fire water pump station will be removed from the Project area by trade waste tankers to a licensed facility.

Oil and water separator devices are provided within the HV substation area as outlined in section 3.2. Contaminated liquid/oil within the separator devices will be removed and disposed of at a licenced facility. The recommended interval of liquid waste removal will be confirmed with the device supplier.

3.4 Sewer management

The wider industrial estate and the Mamre Road precinct do not have comprehensive sewer infrastructure. These items are being developed by Sydney Water with delivery dates in flux. Sewer flows discharging from the site are limited to 10kL per day during the interim discharge arrangement with Sydney Water as noted in the Sydney Water section 73 notice of requirements (ARUP, 2024).

The onsite wastewater management system includes:

- 2 x points of sewer discharge from Project area:
 - Low Pressure system discharge at northwest corner of Project area.
 - Gravity point of connection (DN 225) to estate sewer system.
- 3 x sewer holding tanks to provide sufficient storage to cater for the reduced capacity of the current sewer infrastructure:
 - 2 x tanks with combined volume 250kL near northwest corner of Project area.
 - 1 x tank with volume 60kL near eastern boundary of the Project area.

Both the northwest and eastern wastewater discharge connections to the Sydney water sewer mains are metered and monitored by the site building automation system. Each connection is provided with a motorised isolation valve and flow meter to monitor and control discharge flows from the site (ARUP, 2024). Sewer demand estimates are detailed within the Infrastructure Requirements Report (SYD05-06-07_C-R-0001) prepared by Arup.

3.5 Wastewater treatment plant

No wastewater treatment facility or water treatment plant is located within the Project area (ARUP, 2024).

No tertiary WWTP (to polish recycled water for industrial water use) has been constructed as part of SYD05 construction.

Therefore the operation of a WWTP outlined in Condition of consent (CoC) B43 (c) is not relevant to this plan.

3.6 Water demands and sewer demands

Water and sewer demands were estimated for each phase of development by Arup (2023). These estimated demands are presented in Table 3-1. Section 4.3 details water monitoring in place to ensure The Proponent complies with these demand figures.

Table 3-1 Estimated water and sewer demands (Arup, 2023)

Water and Sewer Demands	DEMANDS BASED ON ASSUMPTION OF 6 CYCLES OF CONCENTRATION						
	Form Factor / IT Load	Average Daily Water Demand	Peak day Water Demand	Peak Water Demand – Flow Rate	Average Daily Sewer discharge	Peak Daily sewer discharge	Peak Sewer Discharge - Flow
	(MW)	(m ³ /day)	(m ³ /day)	(l/s)	(m ³ /day)	(m ³ /day)	(l/s)
Initial	2023 Q3/9.6MW	16	245	12.8	2.7	39	10.5
	2024 Q3/19.2MW	32.1	491	25.7	5.3	78	21.1
	2025 Q3/28.8MW	48.1	736	38.5	8	117	31.6
	2026 Q3/48MW	80.2	1227	64.2	13.4	195	52.7
	2027 Q3/57.6MW	96.3	1473	77.1	16	234	63.3
	2028 Q3/76.8MW	128.4	1963	102.8	21.4	311	84.4
First building fully operational	2029 Q3/96MW	160.4	2454	128.5	26.7	389	105.5
	2030 Q3/100.8MW	168.5	2577	134.9	28.1	409	110.8
	2031 Q3/105.6MW	176.5	2700	141.3	29.4	428	116
	2032 Q3/110.4MW	184.5	2822	147.8	30.8	448	121.3
	2033 Q3/115.2MW	192.5	2945	154.2	32.1	467	126.6
	2034 Q3/124.8MW	208.6	3191	167	34.8	506	137.1
	2035 Q3/134.4MW	224.6	3436	179.9	37.4	545	147.7
Ultimate	2036 Q3/144MW	240.7	3682	192.7	40.1	584	158.2

4 Operational water management requirements

4.1 Operational water management measures

Operational water management measures have been established to ensure the CoC are met. These management measures are outlined in Table 4-1.

Table 4-1 Operational water management measures for the Project

ID	Management measure	Responsibility	Timing
1	Comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> which prohibits the pollution of waters (without exception, as there is no EPL for this Project) by ensuring no unnatural or hazardous material enters the natural environment directly or through stormwater drainage.	DCOM and CEOM	At all times
2	To comply with Condition of Consent B43, the following will be undertaken: uphold water use as described in Section 3.6, metering as per Section 4.3, wastewater disposal as per Section 3.3 and 3.23.4, and other operational management requirements as described in this Table 4-1.	DCOM and CEOM	At all times
3	To comply with Condition of Consent B43, the following will be undertaken: In a pollution event, follow the management measures detailed in the Pollution Incident Response Management Plan (Appendix A)	DCOM and CEOM	As required
4	To comply with Condition of Consent B43, the following will be undertaken: The Proponent will implement the most recent version of the WMP approved by the Planning Secretary for the duration of the development.	DCOM and CEOM	At all times – update immediately following any update from the Planning Secretary
5	To comply with the PIRMP as required in Condition of Consent B43, the following will be undertaken: Spill kits will be stored on site where chemicals are located in case of a spill.	DCOM and CEOM	At all times – kits to be replaced before they expire

6	All chemicals and fuel will be stored in accordance with AS 1940:2017 The Storage and handling of flammable and combustible liquids	DCOM and CEOM	At all times
8	To comply with Condition of Consent B43, the following will be undertaken: No contaminated water will be discharged into stormwater, any contaminated water will be transported off site to a licensed facility.	DCOM and CEOM	At all times; transportation as required
9	To comply with Condition of Consent B43, the following will be undertaken: Fire water used within the Project's battery rooms which store lithium-ion batteries will drain to holding tanks and will be pumped out to trade waste tankers following a fire event for disposal at a licensed facility.	DCOM and CEOM	As required
10	To comply with Ecologically Sustainable Development planned mitigation measures as part of the EIS, the following will be undertaken: Reduce potable water consumption where possible	DCOM and CEOM	At all times
11	To comply with the PIRMP and this WMP as required in Condition of Consent B43, the following will be undertaken: staff training will be conducted and maintained.	DCOM and CEOM	At all times
12	Comply with monitoring requirements detailed in Table 4-2.	DCOM and CEOM	At all times
13	Comply with general reporting requirements per the OEMP.	DCOM and CEOM	At all times
14	In compliance with the POEO Act, notify relevant regulatory authorities when a pollution incident occurs (refer PIRMP for details)	DCOM and CEOM	Immediately after a pollution incident occurs
15	In compliance with the PIRMP, all staff will be aware of chemical containment processes	DCOM and CEOM	At all times
16	In accordance with the PIRMP, a spill kit will be available on site	DCOM and CEOM	At all times
17	In accordance with the PIRMP, all chemicals will be correctly contained, and the material safety data sheet will be available	DCOM and CEOM	At all times
18	In accordance with the PIRMP, the Project area will be cleaned and maintained regularly	DCOM and CEOM	Weekly cleaning, maintenance as required

4.2 Monitoring

Water quality monitoring is not required for this Project as all trade wastewater (either after a fire or from the oil and water separator) is removed from Project area by trade waste tankers and disposed of at a licensed facility and there will be no contaminated stormwater discharges. Therefore stormwater impact assessment criteria, including trigger levels were not developed as outlined in CoC B43 (e)(iv). Any water quality monitoring which is conducted shall comply with the NSW EPA Approved Methods for the Sampling and Analysis of Water Pollutants in NSW. The stormwater system has been designed at a precinct level to meet the requirements of SSD-9522 and does not require further water quality monitoring. Water quality monitoring requirements may change if the WWTP is constructed and operated, in which case this WMP would be updated to reflect any changes.

Further monitoring requirements and responsibilities are provided in Table 4-2. An inspection form for each asset shall be developed by the CEOM and a record of all inspections kept.

Table 4-2 Project monitoring requirements

I D	Monitoring Requirement	Responsibility	Timing	Reporting requirement
1	Inspection of the oil and water separators in accordance with supplier recommendations.	DCOM	Six-monthly intervals or as recommended by supplier.	Quarterly environmental inspection report
2	Inspection of rainwater tankscreens. The inspection should be carried out in general accordance with the recommended inspection requirements within the Penrith City Council WSUD Inspection and Maintenance Guidelines (Penrith City Council, 2022)	DCOM	Six-monthly intervals.	Quarterly environmental inspection report
3	Inspection of chemical and diesel storages and surrounding area for leaks.	DCOM and CEOM	Quarterly	Quarterly environmental inspection report
4	The PIRMP will be tested and reviewed	DCOM	Within three months of the conditions listed in Section 9 of the PIRMP	Quarterly environmental inspection report

4.3 Water metering

Authority water meters are installed to both potable water and recycled water supplies at the Project area boundary. The Project water supplies are provided with flow restriction devices in the interim to limit the water flows to the area as nominated in the Sydney Water section 73 notice of requirements (ARUP, 2024). Sydney Water will monitor these water meters as part of their supply of water to the site. As the project buildings produce standard domestic wastewater outflow only, metering of this wastewater stream is not required. Requirements for water metering of discharged wastewater will be revised subject to the construction of a WWTP on site.

4.4 Environmental incident management

The Pollution Incident Response Management Plan (PIRMP) for the Project covers environmental incident management. The PIRMP covers:

- Pre-emptive controls and actions
- Spills of hazardous materials,
- Exposure to hazardous chemicals
- Emergency response procedures

The PIRMP includes:

- Chemicals and potential hazards on site,
- Pollution incident response actions, including pre-emptive actions and controls and emergency response procedures,
- Incident definition, incident notification and communication requirements, and
- List of key emergency personnel, a list of internal personnel & external agencies names, numbers & specific responsibilities for emergency planning and response.

The PIRMP will be kept on the site's sharepoint and communicated during the site induction. The PIRMP is provided in Appendix A.

4.5 Communication

There are no consultation requirements for this WMP, however approval of this plan by the Planning Secretary is required prior to commencement of operation as outlined in CoC B43.

The operational complaints handling protocol (OCHP) outlines how complaints can be received through email, community blog, telephone hotline and in-person. For further details please refer to Section 5.1 of the OEMP.

4.6 Training

All personnel (including subcontractors) are required to attend a compulsory site induction that includes a water management component prior to commencement of works on site. This is done to make all personnel involved in the Project aware of the requirements of the WMP, the CoA and the REMMs. The DCOM (or delegate) will prepare the water management component of the site inductions with support from the Environment, Health and Safety team. Short-term and temporary visitors to site will also be required to undertake this induction. Temporary visitors to site, for purposes such as deliveries, will be required to be accompanied by inducted personnel at all times.

The environmental component of the induction will cover applicable elements of the WMP and will include as a minimum:

- The operational waste management measures detailed in Table 4-1 of this WMP
- Monitoring requirements in Table 4-2 of this WMP
- Spill minimisation measures and response including the location and contents of the PIRMP
- Personnel involved in emergency response activities will be provided with specific training
- Incident notification and reporting requirements
- Employees responsible for emergency response activities or water management infrastructure will be provided with specific training on relevant aspects

4.7 Reporting requirements

No water management-specific requirements for reporting are listed in the Conditions of Consent. Section 8 of the OEMP outlines operational reporting requirements for the Project.

5 Document control

The master controlled copies of this WMP and supporting documents, are to be held within the Project's document management system (sharepoint) where copies of these documents are accessible to project personnel and relevant stakeholders as necessary.

All controlled documents once printed are considered "uncontrolled". The control of records includes identification, storage, protection, retention periods and disposition with records being kept for a minimum of five (5) years or as otherwise specified in contracts and/or environmental planning approval documentation.

5.1 WMP review and updates

Continual improvement is achieved through constant measurement and evaluation, and audit and review of the effectiveness of this WMP.

The WMP will be updated accordance with CoC C10, within three months of the following:

- the submission of a Compliance Report under condition CoC C17;
- the submission of an incident report under condition C12;
- the submission of an Independent Audit under condition C19;
- the approval of any modification of the conditions of this consent; or
- the issue of a direction of the Planning Secretary under condition A2(b) which requires a review, the strategies, plans and programs required under this consent must be reviewed.

Additionally, this WMP will be updated as required:

- if necessary to either improve the environmental performance of the development
- cater for a modification or comply with a direction,
- the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary.

Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review required under condition C10, or such other timing as agreed by the Planning Secretary.

Minor changes to the WMP and sub-plans would not be submitted for approval to the Planning Secretary. Minor changes to the WMP and sub-plans would typically include those that:

- Are editorial in nature, e.g. staff and agency/authority name changes,
- Do not increase the magnitude of impacts on the environment when considered individually or cumulatively,
- Do not compromise the ability of the Project to meet approval or legislative requirements.

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Appendix A – Pollution Incident Response Management Plan

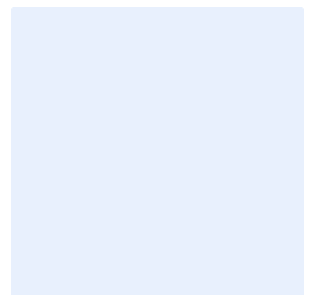
Kemps Creek Data Centre

Pollution Incident Response Plan

Reference: P523907 SYD05

Revision: 0

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Glossary

Abbreviation	Meaning
AWCR	Advanced Water Recycling Centre
CEMP	Construction environmental management plan
CoC	Conditions of consent
DCOM	Data Centre Operations Manager
DN	Nominal diameter
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	Environment Planning and Assessment Act 1979
EPL	Environment protection licence
NSW EPA	NSW Environment Protection Authority
OCHP	Operational Complaints Handling Protocol
OEMP	Operational environmental management plan
SSD	State Significant Development
SSD-9522	The development consent for the Kemps Creek Warehouse, Logistics and Industrial Facilities Hub (Applicant number SSD-9522)
TDS	Total Dissolved Solids
the Project	Kemps Creek Data Centre
WMP	Water Management Plan



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1 Introduction

1.1 Context

Kemps Creek data centre (the Project) was constructed and is operated as part of the Mamre Road Development Precinct in the city of Penrith, Greater Western Sydney. This Data Centre plays a vital role in providing an advanced facility to support the growth and development of IT infrastructure across the Sydney Metropolitan Region and contributes to the enhanced promotion and creation of employment-generating opportunities. There are two State Significant Developments (SSDs) relevant to the Project: SSD 9522 (Kemps Creek Warehouse and Logistics Hub) which applies to the broader precinct, and SSD 10101987 (Kemps Creek Data Centre) which applies specifically to this Project. The Project will rely on water management infrastructure within the broader precinct (SSD 9522) to manage water quality and water quantity. Conditions of Consent for the Project (i.e., SSD 10101987) were granted on 13 July 2023.

1.2 Project description

The Project area is situated at 706-769 Mamre Road and lies within the Mamre Road Development Precinct, approximately 12 km southeast of Penrith and 40 km west of the Sydney central business district. The Project involves the construction and operation of a Data Centre including two data storage buildings (SYD0506 and SYD07), 61 generators, substation, high voltage switch yard, 30 diesel storage tanks, office, internal access roads and landscaping (NSW Government, 2023). The Data Centre provides employment for 79 operational phase workers. Primary access to the Project is via the estate road of Bakers Lane.

The Kemps Creek Data Centre delivery consists of 3 Stages:

- Stage 1 (commenced construction in 2023) – development of SYD05 building, including construction of:
 - SYD05 building shell and façade and fitout
 - High Voltage Power Yard
 - All external works including: internal site roads, western main carpark, generators to support building, site grading and plinths foundations to support western tanks.
- Stage 2 (commenced construction in 2024) – development of SYD06 building, including construction of:
 - SYD06 building shell and façade and fitout
 - External works to support the SYD06 building shell.
- Stage 3 – development of SYD07 building, including construction of:
 - SYD07 building shell and façade and fitout
 - External works to support the SYD07 building shell.

The layout and location of these stages is located in Figure 1-1.



The operation of the data centre would require mechanical cooling and power systems (including emergency backup power generators) along with the necessary telecommunications links required for the site to carry out an efficient and effective operation.

The data centre once fully operational, provides employment for 79 operational phase workers. Primary access to the site is via the estate road off Bakers Lane. The site includes 120 car parking spaces (including six accessible spaces) and 23 bicycle parking spaces.



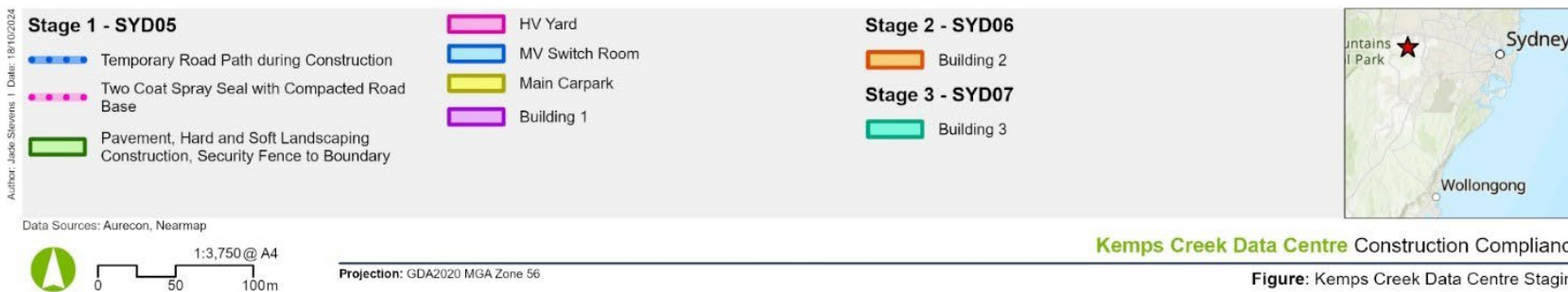
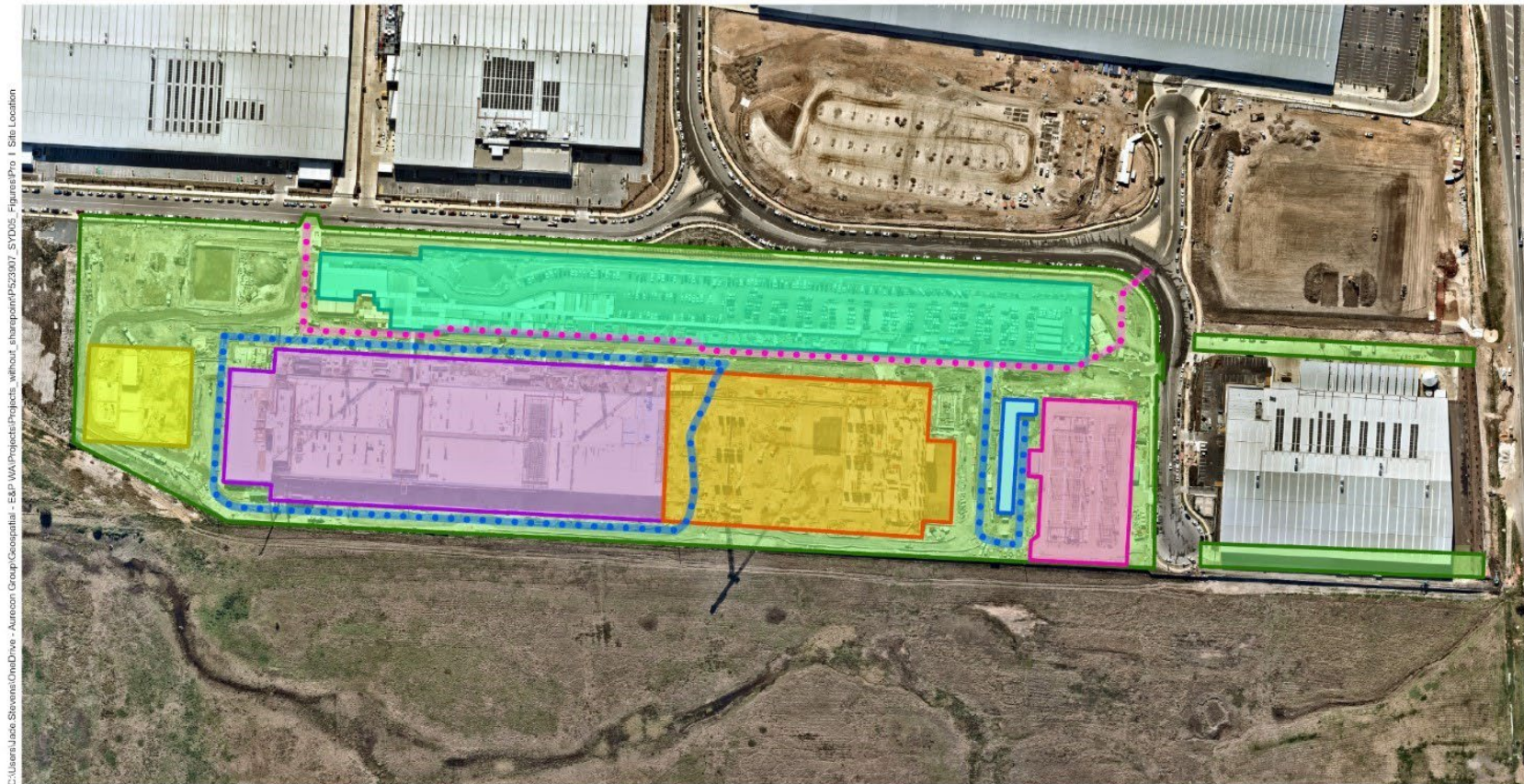


Figure 1-1: Kemps Creek Data Centre Project Staging

1.3 Purpose of the Pollution Incident Response Management Plan

This document comprises the Pollution Incident Response Management Plan (PIRMP) for the Project, and forms part of the Project's Water Management Plan (WMP) in accordance with CoC B43 and Operational Environmental Management Plan (OEMP) in accordance with CoC C5. This PIRMP sets out the requirements for the notification, response and management of pollution incidents as defined in the *Protection of the Environment Operations Act 1997* (POEO Act) and the Protection of the Environment Operations (General) Regulation (2009) (as detailed below) at the Kemps Creek Data Centre.

A Pollution Incident is defined as an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

The PIRMP has been developed to meet the requirements of POEO legislation and nominates the appropriate responsibilities and actions assigned to Operations staff to ensure the requirements of this procedure are strictly adhered to.

1.4 Objectives of the Pollution Incident Response Management Plan

This PIRMP is applicable to ALL Kemps Creek Data Centre staff, visitors and contractors to the Proponent at the Project site. The PIRMP sets out the responsibilities and specific requirements in relation to notifying, responding to and managing pollution incidents as defined in the POEO Act and CoC C12..

Per CoC C12, the occurrence of any incident that is defined as “an occurrence or set of circumstances that causes, or threatens to cause, material harm and may or may not be or cause material harm and which may not be or cause non-compliance” must be notified to the Secretary as soon as possible within 24 hours.

Per the POEO Act, a pollution incident is required to be notified to the Environmental Protection Authority (EPA) and other regulatory agencies as detailed in the Act where there is a risk of actual or potential ‘material harm’ to the environment. Material Harm is defined in Section 147 of the POEO Act as:

- (a) Harm to the environment is material if:
 - i. it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or
 - ii. it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000 (or such other amount as is prescribed by the regulations), and
- (b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.

Per the POEO Act, when an above-described incident occurs, the Sectary and the EPA must both be notified within 24 hours.

2 Chemicals and potential hazards

There is potential for chemicals to be released to the water environment through leaks or spills. As this Project area contains minimal chemical processes and storage, water related pollutants are minor. Water related pollutants at this Project area include:

- Diesel
- Water with increased total dissolved solids (TDS), i.e., salt levels, generated by the Project cooling system

3 Communication

Per the POEO Act s148, a pollution incident is an incident that is causing or threatening material harm to the environment. In accordance with this Act, the Proponent is required to immediately notify the following regulatory authorities when a pollution incident has occurred:

Table 3-1: Regulatory Authorities Contact Details

Contact Authority	Contact Details
Environmental Protection Authority	131 555
NSW Ministry of Health	(02) 9391 9000
Sydney Water	13 20 92
Local Council – Penrith City Council	(02) 4732 7777
SafeWork NSW (if a serious injury or illness, a death or a dangerous incident has occurred)	13 10 50
Fire and Rescue NSW	000

The information required to be provided as part of the notification process includes:

- a) the time, date, nature, duration and location of the incident;
- b) the location of the place where pollution is occurring or is likely to occur;
- c) the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known;
- d) the circumstances in which the incident occurred (including the cause of the incident, if known);
- e) the action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known;
- f) other information prescribed by the regulations.

Lack of any of the above information should not prevent the responsible person from making an immediate notification in the case where the incident has been deemed to be causing or threatening material harm to the environment. As additional information becomes available, it should be communicated with all the relevant agencies immediately. Details on consultation with authorities or other relevant stakeholders, and other communication management items can all be found in the OEMP.

There are also incident notification requirements as part of the Conditions of Consent C12. Per C12, the Proponent will notify the Planning Secretary in writing via the Major Projects website immediately after they

become aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. The Proponent will respond to all further notification requests provided by the Planning Secretary and will provide reports which comply with the requirements of Appendix 4 of the Conditions of Consent.

3.1 Internal communications

Communications to the Data Centre should be directed to the following email address:

SydDC@microsoft.com

3.2 Notification to local landholders and community

Community notification shall be undertaken at the determination of the Emergency Response Team Lead. The following notification methodology is proposed to be utilised as required:

- Early warnings: same-day telephone notification or door knocking to landholders who may be affected by the incident over the subsequent 24-hour period; and
- Updates: follow up phone calls to all landholders who may have been notified by the initial early warning.

Information provided to the community will be relevant to the incident and may include the following details:

- Type of incident that has occurred;
- Potential impacts on local landholders and the community;
- Project area contact details; and
- Advice or recommendations based on the incident type and scale.

4 Pre-emptive actions and controls

A number of controls have been implemented as preventative and pre-emptive incident management measures. These include:

- Appropriate training for all staff members and contractors on site
- Design of suitable areas to store and dispose of hazardous substances
- Adequate incident response processes (including this document).
- Spill kits
- Correct chemical containment
- The material safety data sheet (MSDS) will be readily accessible for all chemicals used or stored on site
- The operational water management measures and monitoring measures detailed in the WMP
- Regular cleaning and maintenance of the Project area

All emergency control resources will remain readily and easily accessible.

5 Pollution incident response actions

In the event of a pollution incident (refer section 1.3 and 1.4) the Emergency Response Team Lead shall:

- Notify management and the relevant Authorities and Emergency Service(s) of the type and location of the incident, per the Section 3.
- Assume responsibility for all staff and visitors on site until such time that emergency services arrive and take on responsibility (if required)
- Co-ordinate the incident response
- Decide if an evacuation is appropriate and notify staff and visitors accordingly
- Communicate all information relating to the incident and the actions taken to the Emergency Services personnel on arrival
- Preserve the area around the site of the incident until the relevant authority releases the site
- Keep records of the actions taken, the nature of the incident and any unusual circumstances

5.1 Hazardous spill procedure

A hazardous spill is a spill of a liquid that has the potential to pollute the environment. Within the data centre this includes the substances listed in Section 2. If a hazardous spill is detected on site, the person who detected it shall:

- Alert all other persons in the vicinity of the spill or leak
- Isolate source of the spill and if possible prevent further spillage
- Follow all chemical MSDS requirements for storage, handling and spill response
- Inform the Emergency Response Team Lead
- Use a spill kit to absorb the spillage (ensure personal protective equipment is worn)
- Ensure spillage does not enter storm water drainage

The Emergency Response Team Lead (or delegate) shall:

- Contact Emergency Services if required
- If appropriate, clean up area and dispose of material correctly, else contact relevant external services to assist
- Ensure the area is clean before recommencing operations

5.2 Exposure to hazardous chemicals procedure

The first person to arrive at the site of a medical emergency due to human exposure to hazardous chemicals shall:

- Do not put themselves or others in danger
- Ensure they and any other people exposed to danger are safe
- Contain the source of exposure if safe to do so
- Call emergency services if required, and follow all directions provided by the emergency services
- Inform the Data Centre Operations Manager (DCOM)
- If necessary and safe to do so, apply first aid

- Stay with exposed persons until the situation is resolved or emergency services can take responsibility

5.3 Emergency response

In the event of an emergency such as a fire or flood the evacuation procedures as documented in Fire and Flood evacuation plans shall be followed.

An evacuation plan will be developed as part of a site specific Business Resilience Plan (BRP) and displayed in strategic locations around the site. The Flood Emergency Response Plan (van der Meer Consulting) will be followed during a flood event.

Where either event has led to a potential pollution incident occurring, authorities will be notified as per Section 3 and investigations and corrective actions will be implemented as agreed with the EPA.

The management and disposal of firewater will be conducted as described in the Water Management Plan.

6 Staff training

The Project area induction is required to be undertaken by all staff working on the operation of the Project. The induction will include the following information in relation to this PIRMP:

- New employees informed of the location of this PIRMP when inducted to the Project area
- Spill minimisation measures and response
- Personnel involved in emergency response activities will be provided with specific training
- Incident notification and reporting requirements

A copy of this PIRMP will be kept at Project offices.

7 Testing and updating PIRMP

The CoC outline the requirements for testing and updating the PIRMP. The Proponent will test and review this PIRMP within three months of any of the following:

- the submission of a Compliance Report under condition C17;
- the submission of an incident report under condition C12;
- the submission of an Independent Audit under condition C19;
- the approval of any modification of the conditions of this consent; or
- the issue of a direction of the Planning Secretary under condition A2(b) which requires a review.

Testing of the PIRMP will include:

- Testing of the PIRMP will either be in the form of a simulation or a practical exercise to run through response procedures.
- PIRMP test exercises will be scheduled and recorded.
- The Proponent will maintain records pertaining to the exercise, lessons learnt, steps taken to improve responses.

8 Compliance and reporting

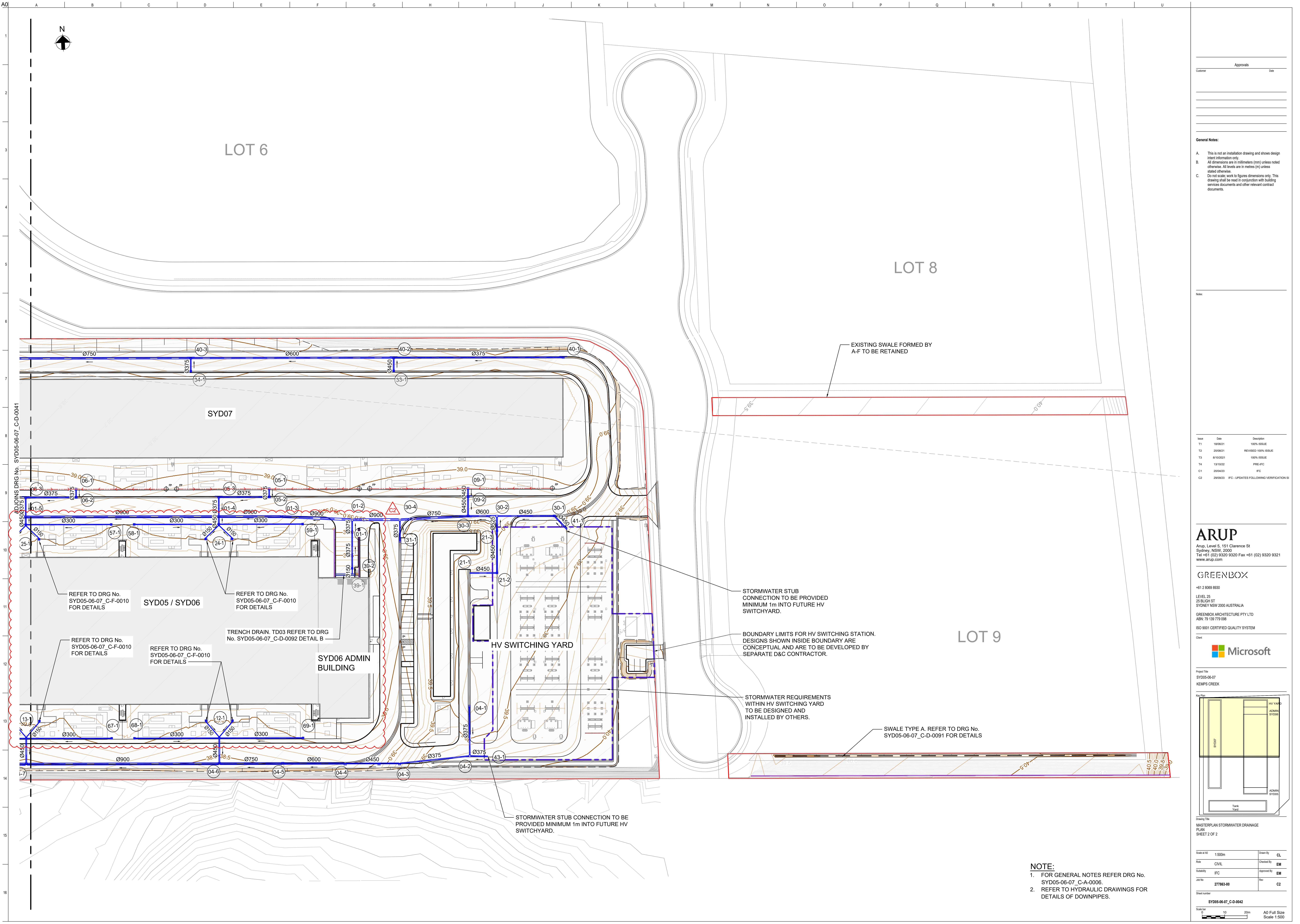
The Section 7 of the OEMP details relevant reporting requirements following an environmental incident, and compliance requirements can be found in Section 8 of the OEMP.

Appendix B – Stormwater Drainage Plans



NOTE:

1. FOR GENERAL NOTES REFER DRG No. SYD05-06-07_C-A-0006.
2. REFER TO HYDRAULIC DRAWINGS FOR DETAILS OF DOWNPIPES.



Approvals	
Customer	Date

General Notes:

A. This is not an installation drawing and shows design intent information only.

B. All dimensions are in millimeters (mm) unless noted otherwise. All levels are in metres (m) unless stated otherwise.

C. Do not scale: work to figures dimensions only. This drawing shall be read in conjunction with building services documents and other relevant contract documents.

Notes:

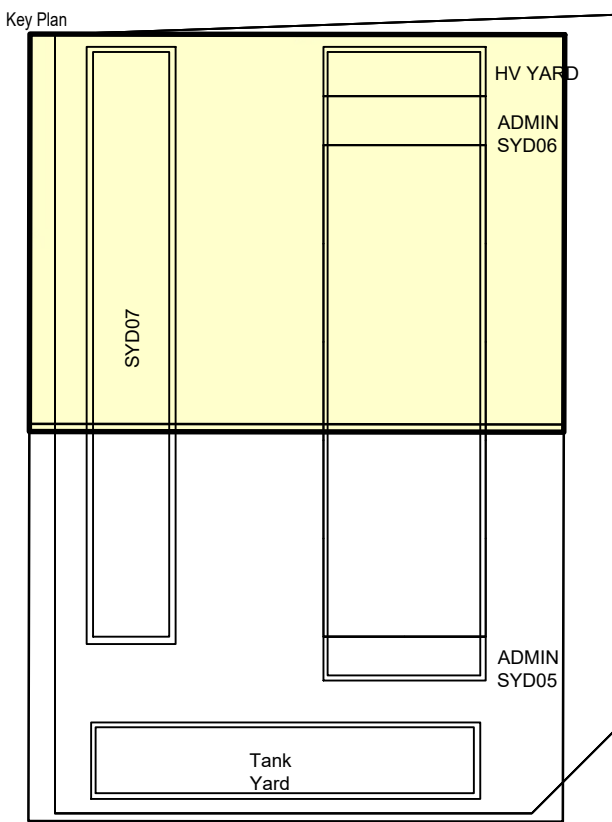
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T2	20/09/21	REVISED 100% ISSUE
T3	6/10/2021	100% ISSUE
T4	13/10/22	PRE-IFC
C1	20/04/23	IFC
C2	29/09/23	IFC - UPDATES FOLLOWING VERIFICATION SI

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Project Title
SYD05-06-07
KEMPS CREEK



Drawing Title
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PLAN
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Subsidiary	IFC	Approved By	EM
Job No	277883-00	Rev	C2

Sheet number
SYD05-06-07_C-D-0042
Scale bar
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Scale 1:500

NOTE:
1. FOR GENERAL NOTES REFER DRG No. SYD05-06-07_C-A-0006.
2. REFER TO HYDRAULIC DRAWINGS FOR DETAILS OF DOWNPIPES.