ARUP

EIS

Project Echidna

Waste Technical Report

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Executive summary

This Waste Technical Report (WTR) has been prepared for the proposed data centre in accordance with the requirements of the Blacktown Development Control Plan (2015) (DCP). This technical report includes consideration of both the operational and construction phases of the development. The WTR also addresses the Secretary's Environmental Assessment Requirements (SEARs) for this proposal.

A summary of the potential construction waste streams likely to be generated during construction of the proposal and construction waste management is summarised in Section 3.1 and Section 3.3. Operational waste generation and management, including estimated operational waste quantities and collection requirements are summarised in Section 3.2.

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1. Introduction

1.1 Purpose of this report

Arup has been engaged to prepare a Waste Technical Report which addresses the Secretary's Environmental Assessment Requirements (SEARs) for the Project Echidna Data Centre (the proposal).

The proposal will generate waste from construction activities and operational site use arising from maintenance and staff amenity spaces. This report summarises the type and classification of waste that would be generated, handled, stored, and disposed of from the proposal site. This report also describes the waste management approaches to be undertaken during construction and operation of the proposal. During the operational phase, source separation systems will be arranged for relevant waste and recycling streams generated by onsite activities, such as general waste, mixed recyclables, paper and card, e-waste, and any hazardous waste.

At this stage, detailed design has not been carried out. High-level estimates of waste generation rates have been provided for the main waste streams during operation, which supports the identification of potential impacts and mitigation measures. More refined waste estimation and management provisions will be detailed in the Construction Environmental Management Plan (CEMP) and Operational Environmental Management Plan (OEMP) as design progresses. Detailed waste management provisions for site operation will be documented in a Waste Management Plan (WMP).

1.2 Proposal Components and Key Terms

1.2.1 Key Terminology and Project Details

Table 1: Terminology and Project Details

Term	Definition
Proposal	Construction of a two-storey data centre comprising of data halls, mechanical and electrical equipment rooms, offices, other ancillary support spaces, and external/rooftop mechanical and electrical equipment.
Proposal site coverage	The proposal has a total coverage of approximately 9,225 square metres comprising two floors (Ground Floor + Level 1).
Site	The proposal is located at 10 Eastern Creek Drive, Eastern Creek NSW, legally described as Lot 4001, DP 1243178. The site is situated within the Blacktown Local Government Area (LGA). The entire site area is approximately 56,800 m^2 and is to accommodate Building 1, Building 1A, a substation and Building 2 (the Proposal).
Concept Design Approval	A previous DA (SPP-19-00013) was approved on site for the industrial development of a Detailed Design Stage 1 and a Concept Design Approval of an outline for Stage 2, which is the subject of this Proposal.
State Significant Development (SSD) Trigger	The data centre building will have a capacity of over 10MW, which triggers the proposal as a State Significant Development under Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021.

1.2.2 Proposal Overview

Arup on behalf of the proponent is seeking development consent to construct a data centre (the Proposal) at 10 Eastern Creek Drive, Eastern Creek NSW, legally described as Lot 4001 DP 1243178 (the Site). The Proposal involves the construction of a two-storey data centre comprising of data halls, mechanical and electrical equipment rooms, offices, other ancillary support spaces, and external/rooftop mechanical and electrical equipment. The Site is situated within the Blacktown Local Government Area (LGA) on the corner of Eastern Creek Drive and Old Wallgrove Road.

Building 1 to the north of the Proposal site is currently under construction. The Proposal's site coverage is approximately 9,225 square metres.

The design of the data centre is based on the end-client's reference design as well as applicable Australian Standards and will deliver capacity for approximately 35.2MW of IT equipment. Utility power will be delivered via a dedicated on-site electricity substation (subject to a separate development application), with emergency backup power provided by a combination of lithium-ion battery systems and standby generators. Cooling will be delivered by highly efficient fresh air free-cooling systems in the Winter and evaporative cooling in the Summer to ensure energy consumption is minimised as far as practical.

The two (2) level facility will reach a building height of approximately 25m including all significant plant and rooftop equipment. The facility will include two (2) levels of data hall space and supporting plantrooms, and supporting administrative spaces incorporating secure entry facilities, loading dock, storage, staff offices and the like. The standby generators will occupy an external equipment yard to the west of the main building, and some mechanical equipment will be located at roof level. The site will be served from a private on-site substation, located to the west of the proposed data centre building and subject to a separate development application.

Landscaped areas are also proposed, where mature local trees will be used to improve aesthetics and amenity for local businesses.

On-site car parking spaces will be provided for staff and visitors, including disabled and electric vehicle parking.

Figure 1 shows the site and surrounding context. Figure 2 shows the site layout.

1.2.3 Permissibility and Approval Pathway

Division 4.7 of Part 4 of the EP&A Act covers State significant development (SSD). The Proposal is identified as SSD by virtue of meeting thresholds defined under Schedule 1, Clause 25 of the State Environmental Planning Policy (Planning Systems) 2021. Specifically, the Proposal is appropriately classified as a data storage development with a capacity of more than 10 megawatts (see Chapter 4 'Strategic context' of the main EIS for further detail).

The proposed data centre is permissible with consent within a light industrial zone pursuant to the provisions outlined in Section 2.31 of State Environmental Planning Policy (Transport and Infrastructure) 2021.

1.2.4 Development history

The previous planning approvals relevant to the subject SSDA and proposed development include:

- **DA-18-00196:** Consent was granted for the *'Torrens Title subdivision of 1 lot into 1 industrial lot and 1 residue lot'* of Lot 532, DP 1236811 which created the subject lot.
- **DA-18-00938:** On 6 December 2018 consent was granted for *'Bulk earthworks entailing cut and fill across the site to facilitate suitable site levels for future built form (subject to future approval)'*. The associated Construction Certificate is CC-19-00320. These earthworks have been completed on site. The subject development proposed has been designed to respond to these works.
- **DA-18-01592:** On 20 June 2019 consent was granted for the construction of a warehouse and distribution facility comprising 33,250 square metres of GFA, 266 vehicles and site landscaping. Construction of this project has not commenced at this time.
- **DA-20-10387:** On 15 September 2020 consent was granted for the installation of 4 temporary electricity kiosks for interim power supply for an approved data centre.
- **SPP-19-00013:** A previous DA was approved on site for the industrial development of a Detailed Design Stage 1 (Building 1 and Building 1A) and a Concept Design Approval of an outline for Stage 2, which is

the subject of this Proposal. It is intended that this SSDA will supersede the existing Concept Design Approval for Stage 2.

1.2.5 Proposal Need and Benefits

The proposed development, construction and operational use of the Data Centre will serve Sydney and the wider region in providing for increasing cloud-based storage and computing requirements. The Data Centre will positively impact the social and economic conditions of Eastern Creek and the Blacktown City Council LGA, creating jobs during both construction and operation.

Arup and the Client are committed to delivering a high-quality development with economic and employment benefits for the Eastern Creek District and the residents and visitors of the region through effective collaboration with key stakeholders, including State government agencies and Blacktown City Council.

Figure 1: Site Context (Genton, 2022)

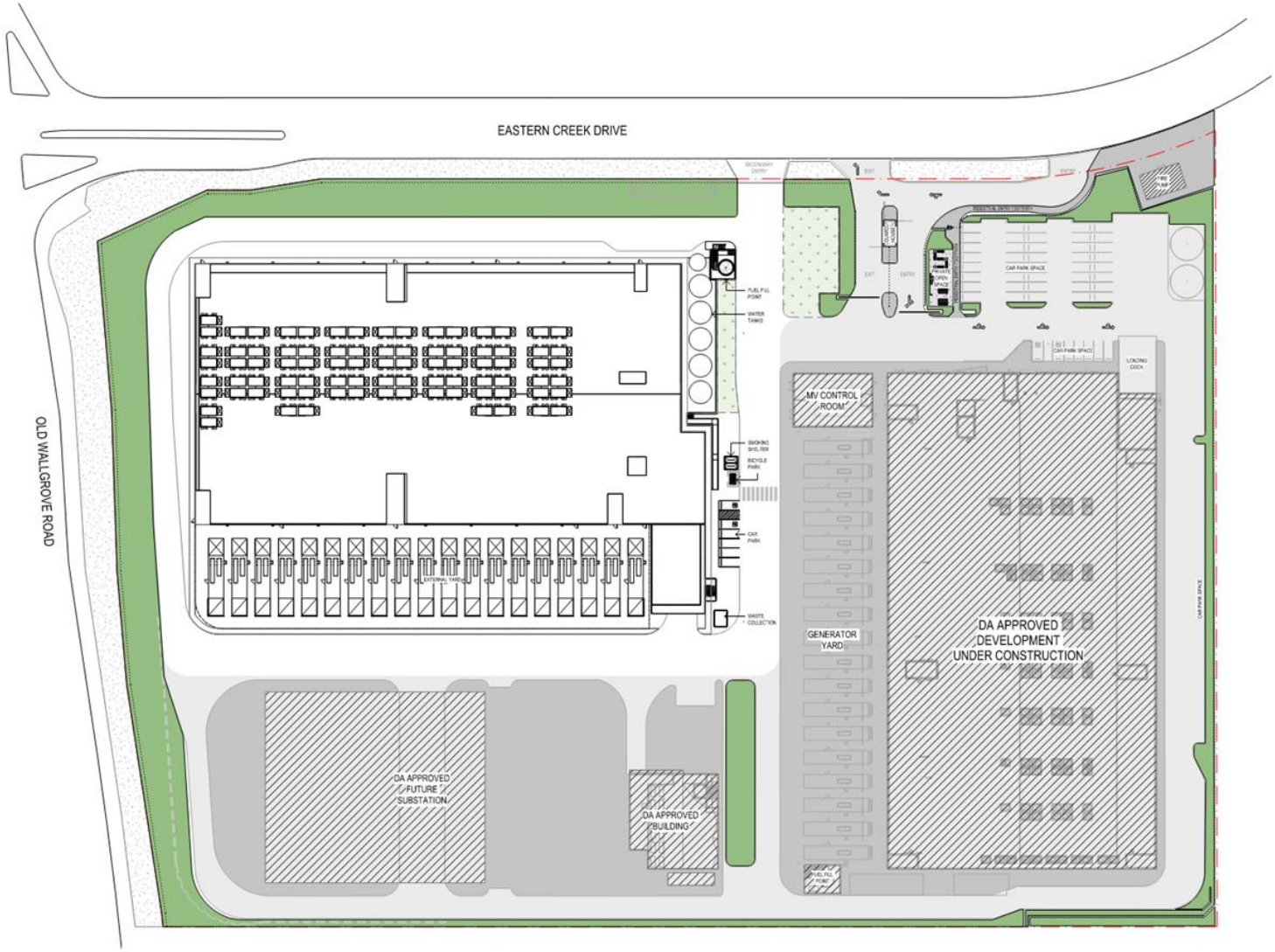

Figure 2: Site Layout (Genton, 2022)

1.3 SEARs relevant to this report

Table 2 identifies the SEARs requirements which are relevant to this waste technical report.

Table 2: SEARs requirements for Waste Management

SEARs relevant to this technical report	Where addressed in this technical report
Identify, quantify, and classify the likely waste streams to be generated during construction and operation.	Sections 3.1, 3.2 and 3.3 of this report
Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	Section 3.3 of this report.
Identify appropriate servicing arrangements for the site.	Section 3.3 of this report
If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	N/A

2. Waste Policy, Guidelines and Plans

This report has been prepared in accordance with the following policy, standards, guidelines, and plans:

- The National Waste Policy: Less Waste More Resources 2018
- Australian Standards, Mobile waste containers (AS 4123.1—2008)
- NSW Protection of the Environment Operations Act (POEO Act) 1997
- NSW Waste Avoidance and Resource Recovery Act (WARR Act) 2001
- NSW Waste Avoidance and Resource Recovery Strategy 2014-2021 (WARR Strategy)
- NSW Protection of the Environment Operations (Waste) Regulations 2014
- NSW Waste Classification Guidelines 2014
- NSW EPA Resource Recovery Orders and Resource Recovery Exemptions
- NSW EPA Waste Levy Guidelines 2015
- NSW Waste and Sustainable Materials Strategy 2041
- Standards for Managing Construction Waste in NSW 2019
- Blacktown Development Control Plan 2015 (DCP) Part G – Waste Management and Minimisation
- Blacktown City Council's Guideline for Waste Management in New Developments
- City of Sydney's (CoS) Guidelines for waste management in new developments 2018.

3. Assessment

3.1 Construction waste generation and management

Waste will be generated at the site during the site clearance, excavation, and construction phase of the proposal. Construction waste will be managed in line with standard industry practice, to prevent environmental damage and, where possible, recover materials for reuse and recycling.

Construction waste management for the proposal is routine and adequately managed through standard industry practice and will be documented in the CEMP before starting onsite works. The WMP within the CEMP will outline:

- Types and volumes of waste likely to be generated
- The procedure for assessing, classifying, and storing waste in line with the NSW EPA Waste Classification Guidelines[1]
- Storage and treatment of waste on the site, including stockpiles
- Methods of transport and disposal of wastes, including waste that possesses hazardous characteristics, so that any waste leaving the site is transported and disposed of lawfully and does not pose a risk to human health or the environment
- Opportunities for reducing waste, reusing materials, and increasing recycling
- Requirements for compliance with the *Waste Avoidance and Resource Recovery Act 2001*
- The Resource Recovery Orders and Exemptions requirements applicable to the waste on site.

3.1.1 Contaminated Hazardous Waste

The NSW Environment Protection Authority (EPA) regulates the management of hazardous waste. If unexpected contaminated / hazardous waste materials are identified, the NSW EPA and Council may need to be notified. All contaminated/hazardous waste must be transported by a NSW EPA licensed contractor and treated or disposed of at an appropriate licensed facility.

If a material is suspected of being contaminated or hazardous, work should be halted, with all potentially contaminated or hazardous waste handled in accordance with appropriate legislation and regulations including the Work Health and Safety Regulation 2011.

A CEMP will be developed before construction commences for the appropriate management of hazardous waste on the site. All waste for disposal will be classified, transported from site and disposed of in line with the Waste Classification Guidelines.

3.1.2 Preliminary earthworks

The construction works will aim to minimise disposal of waste soil by:

- Reusing clean excavated material onsite
- Minimising excavation of contaminated material and considering onsite capping and immobilisation where appropriate.

[1] https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines

3.1.3 Weed management

A Weed Management Plan will be developed, specifying appropriate control and disposal measures to minimise impacts associated with the spread of weeds and plant pathogens. The CEMP will reflect these measures.

3.1.4 Waste diversion targets

The proposed development should support the NSW EPA WARR Strategy to divert 80% of construction and demolition (C&D) waste from landfill.

Waste reporting and audits can be used to determine the actual percentage of wastes that are being, or have been, recycled during the site preparation and construction stages of the development.

3.1.5 Potential waste streams

Construction waste streams along with their waste classification and proposed management pathways are documented in Table 3 and are expected to include:

- Site excavation waste
- Construction waste
- Packaging waste
- Construction work compound waste from on-site employees.

3.2 Operational waste generation and management

- Operational waste that will be generated in the data halls and corridor areas includes electronic waste (e-waste) and packaging waste. The site will generate small amounts of operational waste from the site office areas. These operational waste streams are documented in Table 3 and are expected to include:
    - General solid waste
    - Mixed recycling
    - Paper / cardboard
    - E-waste from end-of-life office equipment and maintenance of the data centre
    - Infrequent hazardous waste materials for disposal (e.g. batteries, spill clean up, paints)
    - Bulky waste items, such as furniture and packaging.

A WMP will be developed during detailed design and will include:

- Types and volumes of waste expected to be generated
- Bin provision and sizing to support source separation of recyclable materials and hygienic storage of waste
- Bin storage locations and collection scheduling to preserve amenity
- Requirements for compliance with the *Waste Avoidance and Resource Recovery Act 2001*.

3.2.1 Estimated quantities

Preliminary waste generation has been estimated by applying the typical waste generation rates for commercial offices, published in the *NSW EPA Better Practice Guide for Resource Recovery in Residential Developments*. The data centre layout includes a Gross Floor Area (GFA) of approximately 16,015 m^2 spread over two levels. It has been assumed that only the areas designated “Front of House and Administration” will be regularly generating waste, these areas equate to 2,746 m^2 and are suspected to function similar to a

commercial office. Given the nature of this development, all other areas in the data centre are expected to produce negligible amounts of waste.

The expected waste generation for major waste streams is:

- General waste: 1,924 L/week
- Mixed recyclables: 108 L/week
- Paper & Card: 2,777 L/week

Waste and recyclable materials will be removed from the site by appropriately licensed contractors and reused, recycled, or disposed of at appropriately licensed facilities, in line with the NSW Waste Classification Guidelines.

The proposal is likely to generate e-waste in the form of server racks and associated data storage equipment reaching the end of their service life. For this reason, a waste collection and recycling contract should be established to collect all e-waste for refurbishment, reuse or recycling and ensure it is not disposed of to landfill.

The waste generation estimates, and waste management requirements are based on the following key assumptions:

- Drawings provided by Genton.
- Site office areas include front of house and administration areas as per the architectural drawings dated 18/07/2022 provided by Genton.
- Waste generation volumes for e-waste, confidential paper and other ad hoc waste were not able to be determined due to the limited data available.
- The following areas were not included as site office areas to calculate operational waste generation estimates:
    - Data halls
    - Circulation areas
    - Electrical rooms
    - Loading dock
- Day to day storage of paper and cardboard will be accommodated in the paper and cardboard bins, however if deliveries of equipment that generate larger volumes occur, then the bulky waste storage can be utilised for temporary storage of this packaging. It is expected that the majority of the bulky waste produced by this development will be in the form of packaging from the unboxing of equipment. Bulky waste area requirements are stipulated in *Blacktown City Council's Guideline for Waste Management in New Developments* Section 6 – Bulky Waste (6.5). The guidelines state that non-residential developments must provide a bulky and problem waste storage area(s) of at least:
    - 4 square metres for developments between 100 to 2000 square metres
    - an additional 4 square metres is required for each retail accommodation or entertainment development over 2000 square metres and for every 20,000 square metres of office space.
- Sanitary waste will be collected directly from the point of generation by a specialist waste collection contractor.
- E-waste and other ad hoc waste streams will be stored in MGBs located within each office area as required. Any hazardous or liquid waste will be stored in appropriate specialised containers and collected by specialised services.

3.2.2 Waste targets and reporting

Waste reporting and audits can be used to determine the actual percentage of wastes that are being, or have been, recycled during the operations of the development. The Blacktown City Council Guidelines for Waste Management in New Developments state that suitable space for bin separation and bin weighing station(s) must be considered in the early design stage to ensure multiple waste streams generated onsite are recovered for reuse, recycling, or disposal.

The proposed development should consider alignment with the NSW Waste and Sustainable Materials Strategy 2041 regional target of an 80% average recovery rate from all waste streams from landfill by 2030.

3.2.3 Waste Storage

Based on the architectural drawings from Genton dated 18/08/2022, and the waste generation rates the waste collection enclosure provided on ground floor is sufficient for the storage of a maximum of three days' worth of operational waste from the development. A bin scaling factor of two has been applied to all bins to account for adequate movement space. The waste streams to be stored in the enclosure are:

- General waste – Collected every three days. Stored in 2 x 660L MGBs, requiring 3.76m^2
- Paper/card - Collected every three days. Stored in 2 x 660L MGBs, requiring 3.76m^2
- Comingled recycling – Collected weekly. Stored in 1 x 240L MGB, requiring 0.86m^2
- Bulky waste – Collected as needed / on call. Stored in 4m^2 caged area.

Total storage space required: 12.38m^2

Total storage space provided: 14m^2

Figure 3: Waste collection enclosure with three days of waste storage displayed.

3.3 Summary of waste generation and management

Table 3 below outlines the expected waste materials, classification, and management pathways.

Table 3: Waste generation and management summary

Waste Stream	Source	Phase	Estimated Quantities	Expected Waste Classification under NSW Waste Classification Guidelines	Expected Management Pathway
Excavated Soil Soil, sand, and rubble fines	Excavation of the waste bunker and other site works	Construction	Not quantified. However, construction waste quantities would be detailed as part of a WMP in a CEMP.	General solid waste (non-putrescible) – pre-classified	Temporarily stockpiled for collection and offsite reuse, in line with the CEMP. The soil will be either virgin excavated natural material (VENM) or excavated natural material, covered by a current Resource Recovery Order and Exemption and suitable for reuse onsite or recovery on other construction projects.
Contaminated excavated soil Asbestos impacted soils, topsoil or fill material contaminated with ACM, hydrocarbons, or other chemicals (for example, lead)	Excavation of contaminated fill or soils with surface contamination from previous land use.	Construction	Not quantified, however the site represents a low risk with regards to potential contamination.	A Preliminary Site Investigation has previously been prepared as part of the Concept Design Approval. The results of the investigation concluded that the site represents a low risk with regards to potential contamination. The report concluded that the site is considered suitable for future industrial land uses. The below management pathway would prevail if contamination were found: Soil contaminated with ACM would initially be classified as special waste and need remediation in line with a remediation action plan. Soil contaminated with hydrocarbons, lead paint or other chemicals could be classified as restricted or hazardous waste, depending on contaminant concentration and leachability, potentially requiring offsite remediation and/or disposal. Testing of building footprints will need to be carried out.	If contamination is found, it is likely that the proposal will need to develop a remediation action plan that will define the preferred approach to any contaminated excavated soil. Potential management pathways might include: • Capping and isolation within onsite landform • Offsite disposal to an appropriately licensed facility (most expensive option, appropriate if material not needed on site).
Green waste Trees, shrubs and weeds	Vegetation removed from cleared land	Construction	Not quantified	General solid waste (non-putrescible) – pre-classified	Temporary stockpiling onsite and removal for composting or disposal at licensed facilities. A site weed management plan will be developed, specifying measures to manage high-threat weeds identified on the site.

Waste Stream	Source	Phase	Estimated Quantities	Expected Waste Classification under NSW Waste Classification Guidelines	Expected Management Pathway
General construction waste Concrete, timber, plastic wrapping and strapping, packaging, cardboard & paper, landfill, bricks & tiles, Plasterboard	Offcuts, excess material, packaging	Construction	Not quantified	General solid waste (non-putrescible) – pre-classified	Stored in onsite skip bins and transported offsite for disposal or recycling. Any wooden pallets to be stored for reuse or returned to the supplier for reuse where possible.
Septic waste	Toilets for site workers	Construction	Not quantified	Liquid waste	Portable toilets provided and serviced by an appropriately licensed contractor. All liquid waste managed offsite at an appropriately licensed facility.
Scrap metals	Offcuts, damaged items	Construction	Not quantified	General solid waste (non-putrescible) – pre-classified	Stored in dedicated recycling bins for offsite transport to metal recycling facilities.
General residual waste	Site offices and administration areas and amenities	Operation	1,924 L/week	General solid waste (non-putrescible) – pre-classified	Stored in dedicated general waste bins. Regular scheduled collection for offsite disposal.
Mixed recycling	Site offices and administration areas, workers lunch areas	Operation & Construction	108 L /week	General solid waste (non-putrescible) – pre-classified	Stored in dedicated mixed recycling bins and transported offsite for disposal.
Paper and cardboard	Site offices and administration areas, packaging.	Operation	2,777 L/week	General solid waste (non-putrescible) – pre-classified	Stored in paper / cardboard recycling containers and transported offsite for recycling. Regular scheduled collection.
E-waste	Site office and data halls	Operation	Not quantified, however the proposal is likely to generate e-waste in the form of server racks and associated data storage equipment reaching the end of their service life. For this reason, a waste	No classification within the NSW Waste Classification Guidelines as this waste should not be disposed to landfill.	Stored, separated, and collected for recycling. A waste collection and recycling contract will be established to collect all e-waste for refurbishment, reuse or recycling and ensure it is not disposed of to landfill.

Waste Stream	Source	Phase	Estimated Quantities	Expected Waste Classification under NSW Waste Classification Guidelines	Expected Management Pathway
			collection and recycling contract will be established to collect all e-waste for refurbishment, reuse or recycling and ensure it is not disposed of to landfill.		
Hazardous waste Paints, solvents, waste oils, chemicals, and related packaging.	Building fit-out and ongoing maintenance during operations	Construction and Operation	Not quantified, as generation will be linked to ad hoc site activities and maintenance rather than regular procedures.	Empty containers which held these liquid waste products: general solid waste (non-putrescible)– pre-classified. General solid waste (non-putrescible)– pre-classified	Maintenance vendors to remove empty containers for disposal or recycling as part of their contract.
Green waste	Maintenance of the outdoor green spaces	Operation	Not quantified, as generation will be linked to the flora species chosen during detailed design.	General solid waste (non-putrescible) – pre-classified	Removal by maintenance personnel for composting or disposal at licensed facilities.

4. Waste Management Plan

The Blacktown DCP requirements state that a WMP is to be prepared in line with the Blacktown City Council's Guideline for Waste Management in New Developments, as per this guideline the WMP will address all of the relevant requirements as set out in Table 4.

Table 4: DCP requirements to be addressed in WMP

Blacktown City Council DCP Requirements
Demolition and construction The waste management plan must include the: • Measures to minimise waste and maximise reuse and recycling • Amount and type of waste and recyclables to be generated • Proposed storage and treatment of waste and recyclables • Proposed purchasing policies that will assist with sustainable development • Opportunities to close the loop and support a circular economy.
Occupancy The waste management plan must include the: • Type of development • Number of units, dwellings, or tenancies • Waste and recycling generation rates for the proposed use(s) • Number of bins required for the development • Bin capacities • Collection frequencies • Proposed method of bin movement around the site • Method to rotate recycling bins on each residential floor where chutes are proposed • Proposed service provider • Location of waste collection point(s) • Location of the loading bay for the site (if required) • Proposed physical treatment of the loading bay to maintain truck turning areas (e.g., removable, lockable bollards) • Provision of bulky waste storage area(s), their size and location • Information on the bin tug and trolley equipment for the site (if required) • Specification sheets for all waste management equipment proposed for the site • Cleaning and maintenance schedules for all required waste equipment • Method of communication about the waste system to residents and/or tenancies • Building manager's responsibility to coordinate the waste arrangement for the site if communal bins are required. This includes but is not limited to ensuring clear access onsite for collection vehicles, granting access to loading bays, maintaining waste related signage, moving bins for collection, managing illegal dumping, and cleaning bins and waste facilities onsite • Waste management responsibilities if the development will be strata titled. The expectations and responsibilities of residents and/or tenants in the development must also be outlined in the Community Management Statement, Total Maintenance Plan and/or Strata By-Laws (whichever applies to the site) • Proposed management of shopping trolleys for commercial and mixed use developments in accordance with Council's Abandoned Shopping Trolley Policy P000497.1 • Compliance measures with NSW Government regulations for activities generating hazardous, intractable, or clinical waste.

5. Environmental management measures

Table 5 describes the measures that would be applied to avoid, minimise, or mitigate the potential impacts associated with the waste generated because of the proposal. More detailed provisions for waste management and resource recovery would be detailed as part of a WMP in a CEMP and OEMP.

Table 5: Summary of potential impacts and proposed mitigations for construction and operational waste

Impacts	Mitigation	Responsibility	Timing
Health risks arising from handling or contact with contaminated soil and hazardous waste materials	Existing buildings and potentially contaminated soil within building footprints will be assessed and remediated prior to the commencement of any works. Asbestos containing material, hazardous and/or intractable wastes will be disposed of in line with WorkSafe NSW and Environment Protection Authority requirements.	Construction contractor	Construction
Waste of recyclable resources through unnecessary disposal to landfill.	Waste will be managed in line with the waste hierarchy. The WMP will include provisions for segregation and separate collection of recoverable materials, including green waste, excavated natural materials and metals.	Construction contractor	Construction
Pollution of land or waterways including groundwater through accidental escape of waste or runoff.	The WMP will include measures for containment of waste during storage and transport, such as covering, fencing and bunding.	Construction contractor	Construction
Spread of weeds, pests or pathogens within recovered waste materials.	A weed management plan will be developed, outlining appropriate control and disposal options of any high threat weeds identified on site.	Construction contractor	Construction
Pollution of land or waterways through disposal of waste to an inappropriate site.	The WMP will include a requirement that all waste be delivered to an appropriately licensed facility for recovery or disposal. Receipts for all disposed materials must be kept and made available for inspection by regulatory authorities.	Construction contractor	Construction
Waste of recyclable resources through unnecessary disposal to landfill	Waste will be managed in line with the waste hierarchy. An WMP will be developed and will include provision for source separation systems for recyclable materials, including, paper and card, mixed recyclables, e-waste, and hazardous waste.	Applicant	Operation
Loss of amenity for workers, or neighbours due to odour and vermin Escape of litter causing: • Pollution of land and waterways • Harm to wildlife • Loss of amenity to neighbouring properties.	An WMP will be developed during detailed design for the adequate provision for storage and collection of waste.	Applicant	Operation

Pollution of land or waterways through disposal of waste to an inappropriate site.	The WMP will include a requirement that all waste be delivered to an appropriately licensed facility for recovery or disposal.	Applicant	Operation

6. Summary of residual impacts

It is not likely that there will be any residual impacts remaining if the above mitigation measures are implemented and waste is stored and managed appropriately.

7. References

Australian Government, 2018. The National Waste Policy: Less Waste More Resources 2018

City of Sydney, 2018. Guidelines for waste management in new developments

NSW EPA, 2014. NSW Waste Avoidance and Resource Recovery Strategy 2014–21

NSW EPA, 2014. Waste Classification Guidelines

NSW EPA, 2015. Waste Levy Guidelines

NSW EPA, 2019. Standards for Managing Construction Waste in NSW 2019

NSW Government, 2020. Protection of the Environment Operations (Waste) Regulation 2014

NSW Government, 2020. Waste Avoidance and Resource Recovery Act 2001

NSW Government, 2021. NSW Protection of the Environment Operations Act 1997