



88 Waterloo Road, Macquarie Park 2113
Mixed Use Development

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

10/02/2026
Report No. 5612
Revision B

Client

Cottonwood Development Pty Ltd

Architect

AJC Architects
www.architectsajc.com

SCOPE

A Waste Management Plan (WMP) must be submitted with all development applications for new developments and changes of use that are expected to generate construction, demolition, or operational waste.

This WMP addresses only the **construction** and **demolition** phases of the proposed development. The requirements outlined must be implemented on-site throughout these phases and may be reviewed if there are any design changes. Construction and demolition waste management provisions will also be reviewed as part of the Construction Management Plan.

Waste management for the **operational** phase of the development is outside the scope of this report and must be addressed in a separate Operational Waste Management Plan.

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	05/02/26	M. Cuevas	J. Parker	Draft
B	10/02/2026	M. Cuevas	J. Parker	Amendment

The information in this document has been prepared by EFC solely for the client named on the cover sheet and for the specific purpose stated. EFC accepts no responsibility or liability to any third party who may rely on this document. Reproduction, publication, or distribution of this document without prior written consent from EFC is strictly prohibited.

CONTENTS

1	ACKNOWLEDGEMENT OF COUNTRY	1
2	EXECUTIVE SUMMARY	1
3	INTRODUCTION	3
4	PURPOSE OF THIS REPORT	3
4.1	Legislation and Guidance	4
4.2	Waste Diversion Targets	4
4.3	Report Objectives	5
4.4	Limitations.....	5
5	DEVELOPMENT OVERVIEW.....	6
1.1	SITE LOCATION.....	6
6	GENERAL WASTE MANAGEMENT PROVISIONS.....	7
6.1	Stakeholder Roles and Responsibilities	7
6.2	Monitoring and Reporting.....	8
6.3	Opportunities for Reuse and Recycling	9
6.4	Management of Hazardous Waste Materials.....	10
6.5	Management of Excavation Waste.....	10
7	SITE SPECIFIC WASTE MANAGEMENT PROVISIONS.....	11
7.1	Demolition Waste Volumes and Management	11
7.2	Construction Waste Volumes and Management.....	13
7.3	Recycling Directory	15
7.4	Site-Specific Operational Measures	16
7.5	Location and Design of Waste Management Facilities	18
7.6	Demolition Plan.....	21

LIST OF FIGURES

Figure 1: Aerial Photo	6
------------------------------	---

LIST OF TABLES

<i>Table 1: Legal description of the site.....</i>	1
<i>Table 2: Mitigation measures.....</i>	2
Table 3: SEARs Requirements & Government Agency Comments	4
Table 4: Stakeholder Roles and Responsibilities	7
Table 5: Potential Reuse/Recycling Options for Construction Materials	9
Table 6: Demolition Waste Volumes and Management	11
Table 7: Demolition Waste Disposal Pathways.....	12
Table 8: Construction Waste Volumes and Management.....	13
Table 9: Construction Waste Disposal Pathways	14
Table 10: Recycling Directory	15

1 ACKNOWLEDGEMENT OF COUNTRY

Elephants Foot Consulting acknowledges the Traditional Custodians of the land on which we work - the Aboriginal and Torres Strait Islander Peoples. We pay our respects to Elders past and present, and recognise their continuing connection to land, waters, and culture.

2 EXECUTIVE SUMMARY

This Construction and Demolition Waste Management Plan (C&D WMP) has been prepared by Elephants Foot Consultancy to accompany a State Significant Development Application (SSDA) and concurrent Rezoning Proposal – SSD-94006708 for a mixed-use development identified at 15-21 Cottonwood Crescent, Macquarie Park (the **site**).

The proposal includes provision for the demolition of existing buildings and construction of a residential development comprising two residential flat buildings above a common basement car park / sleaved podium incorporating residential, car parking, and a retail component within the Waterloo Road frontage and provision of 10% affordable housing.

The legal description of the site is outlined in **Table 1** below.

Table 1: Legal description of the site

Property Address	Title Description
15 Cottonwood Crescent, Macquarie Park	SP8144
17 Cottonwood Crescent, Macquarie Park	SP7630
19 Cottonwood Crescent, Macquarie Park	SP7892
21 Cottonwood Crescent, Macquarie Park	SP7984

Note: for the purposes of reporting and branding of the proposal, we will also refer to the site as '88 Waterloo Road, Macquarie Park'

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-94006708).

This report concludes that the proposed development is suitable and warrants approval subject to the implementation of the following planned management and mitigation measures:

Table 2: Mitigation measures

Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure
Source Separation	Construction and Demolition	Separate waste streams at the point of generation (e.g., bricks, concrete, timber, metal, plasterboard) to maximise reuse and recycling. The Site Manager or Contractor is responsible for foreseeing the waste separation.
Reuse of Materials	Construction & Demolition	Reuse demolition materials such as crushed concrete and bricks onsite as fill or sub-base material. Demolition Contractor is responsible for foreseeing the waste reuse.
Accurate Material Ordering	Construction	Order correct quantities and use prefabricated materials to minimise excess. Project Manager to ensure correct material quantities are ordered.
Staff Training & Induction	Construction and Demolition	Provide all workers with site-specific induction and ongoing training on waste separation, hazardous waste handling, and spill response. Site Manager to regularly conduct training in line with evolving environmental regulations and best practices.
Management of Asbestos	Construction and Demolition	Contaminated material stockpiled on site will be minimised as far as possible and should be stored on HDPE liner, in a bunded location which is protected from inclement weather; Sediment fences should be installed around the base of stockpiles and the stockpiles should be covered. Where excavated material requires validations, samples should be taken for NATA laboratory testing as per the requirements of the contamination assessment prior to restoration works, backfilling exercises and disposal; Any trucks carrying contaminated materials should be securely and completely covered immediately after loading the materials (to prevent windblown emissions and spillage) and must be licensed by the NSW Environmental Protection Authority (EPA); Decontamination of all equipment prior to demobilisation from the site is important so that contaminated materials are not spread off-site.
Management of excavation waste	Construction and Demolition	Wherever practical, excavation material will be reused as part of the development; Excavation material that is not natural (virgin) material will be transported to an approved landfill site or off-site recycling depot; A waste classification assessment of the fill material should be undertaken prior to it being acceptable for waste disposal purposes; Transportation routes for excavation material removed from site will be identified and used.

Following the implementation of the above mitigation measures, the remaining impacts are considered appropriate.

3 INTRODUCTION

This report has been prepared in support of a State Significant Development Application (SSDA) and concurrent Rezoning Proposal – SSD-94006708 – at 15-21 Cottonwood Crescent, Macquarie Park (AKA. 88 Waterloo Road).

The application seeks development consent for the redevelopment of the site for a mixed-use development comprising residential accommodation and retail uses.

Specifically, this application seeks approval for the following:

- Demolition of all existing four-storey residential flat buildings on the site
- Site preparation works including:
 - Removal of existing forty-nine (49) trees
 - Excavation of the site to a maximum depth of six (6) basement levels
- Construction of two mixed-use buildings comprising a 60 and 52 storey building respectively, which will accommodate:
 - 858 Residential apartments inclusion 10% affordable housing of the uplift being sought
- Six (6) levels of basement with 733 car parking spaces, bicycle parking, services.
 - A four-level commercial podium containing:
 - Retail spaces
 - Four townhouses
 - Residential lobbies
 - Waste Storages
 - Residential and visitor Parking spaces
 - Bicycle Parking spaces
- Communal Open Space and residential amenities on level four (4).
- Rooftop Terrace on Level 52 of Cottonwood Crescent Tower and level 60 of Waterloo Road Tower.

The proposal includes provision to amend Clauses 4.3 and 4.4 of the Ryde Local Environmental Plan 2014 (RLEP2014) by virtue of the concurrent rezoning process. This includes the following amendments:

- Clause 4.3 – Height of Buildings:
 - Amend the current 65m maximum building height to 205.5m
- Clause 4.4 – FSR:
 - Amend the current FSR of 4.5:1 to 16:8:1

4 PURPOSE OF THIS REPORT

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 8 October 2025 and issued for the SSDA (SSD-94006708). Specifically, this report has been prepared to respond to the SEARs requirement and government agency comments issued below.

Table 3: SEARs Requirements & Government Agency Comments

Item	Description of Requirement	Section Reference (this Report)
17. Waste Management	Provide the measures to be implemented to manage, reuse, recycle and safely dispose of waste, including in accordance with any Council waste management requirements.	Sections 6.1, 6.2, 6.3, 6.4, 6.5, includes the management of hazardous waste, asbestos, excavation waste and opportunities of reuse and recycling. Sections 7.1 and 7.2 include the waste volumes for Construction and Demolition Stages
	Identify appropriately sited waste storage areas, collection access paths/roads, and appropriate servicing arrangements for the site	Section 7.3 of the C & D WMP outlines the waste recycling directory and recommendations for the location of waste management facilities Section 7.6 provides the demolition plan and provides the indicative bin location during the construction stage.

4.1 Legislation and Guidance

This Waste Management Plan (WMP) draws on a range of guidance materials at the local, state, and federal levels, relevant to construction and demolition waste management. The key references include:

- Ryde Development Control Plan 2014: Chapter 7.2 - Waste Minimisation and Management
- *Construction and Demolition Waste Guide – Recycling and Re-use Across the Supply Chain* (Australian Government, Department of Sustainability, Environment, Water, Population and Communities, November 2014)
- *NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014–2021*
- *NSW Waste and Sustainable Materials Strategy 2041 (WaSM 2041)*
- *NSW Waste Classification Guidelines (2014)*
- *Australia’s National Waste Policy (2018)*

4.2 Waste Diversion Targets

This WMP supports the sustainable handling of construction and demolition waste in alignment with state policy objectives. Two key strategies guide the targets outlined in this section:

NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014–2021

- Increase construction and demolition recycling rates to 80%
- Increase total waste diverted from landfill to 75%
- Reduce litter by 40%
- Reduce illegal dumping incidents by 30%

NSW Waste and Sustainable Materials Strategy 2041 (WaSM 2041)

- Achieve an average 80% resource recovery rate across all waste streams by 2030, including construction and demolition waste

- Reduce total waste generated per person by 10% by 2030
- Halve the amount of organic waste sent to landfill by 2030
- Triple the plastics recycling rate by 2030
- Reduce litter by 60% by 2030

4.3 Report Objectives

This report aims to promote best-practice waste management throughout the demolition and construction phases of the development, having regard to site conditions, material types, and design constraints. Where practical, the following measures are encouraged:

- Reuse of excavated material on-site, with any surplus directed to an approved facility
- Mulching and reuse of green waste on-site where suitable, or off-site recycling
- On-site reuse or off-site recycling of bricks, tiles, and concrete
- Returning plasterboard waste to suppliers for recycling
- Reuse of framing timber on-site or recycling off-site
- Off-site recycling of windows, doors, and joinery
- Safe disposal of all asbestos, hazardous, or intractable waste in accordance with SafeWork NSW and EPA requirements
- Recycling of plumbing, fixtures, and metal elements off-site
- Accurate ordering of materials and use of prefabricated components to minimise off-cuts and surplus
- Reuse of formwork wherever feasible
- Source separation of off-cuts to enable reuse, resale, or recycling

4.4 Limitations

This report has been prepared by Elephants Foot Consulting (EFC) solely for the purpose of providing a Construction and Demolition Waste Management Plan (C&D WMP) in support of a development application. It is subject to the following limitations:

- This report is intended solely for use by Cottonwood Development Pty Ltd (including its officers, employees, and advisers) and must not be relied upon by any other party without the prior written consent of EFC.
- Drawings, estimates, and information within this report are based on plans and documentation provided by the client or nominated third parties. Any assumptions made using that information are outside EFC's control.
- All waste calculations presented are indicative estimates only. Actual waste volumes may vary depending on site management practices, including staff training, education, and operational behaviours.
- The site manager is responsible for adjusting waste storage capacity and collection frequencies as required, based on actual waste volumes observed during construction and demolition.
- While this report has been prepared with due care, no representation or warranty is made that the WMP will reflect actual project outcomes. EFC accepts no liability for outcomes that may be unsuitable or inaccurate due to reliance on third-party information or unforeseen factors.
- Unless explicitly stated, EFC makes no warranty or representation regarding the accuracy or reliability of the information contained herein.
- Equipment examples referenced in this report are for illustrative purposes only. Selection and supply must be confirmed with the appropriate supplier. Reference to any third-party business or product does not imply endorsement by EFC.

5 DEVELOPMENT OVERVIEW

The proposed development falls under the LGA of City of Ryde Council, and consists of:

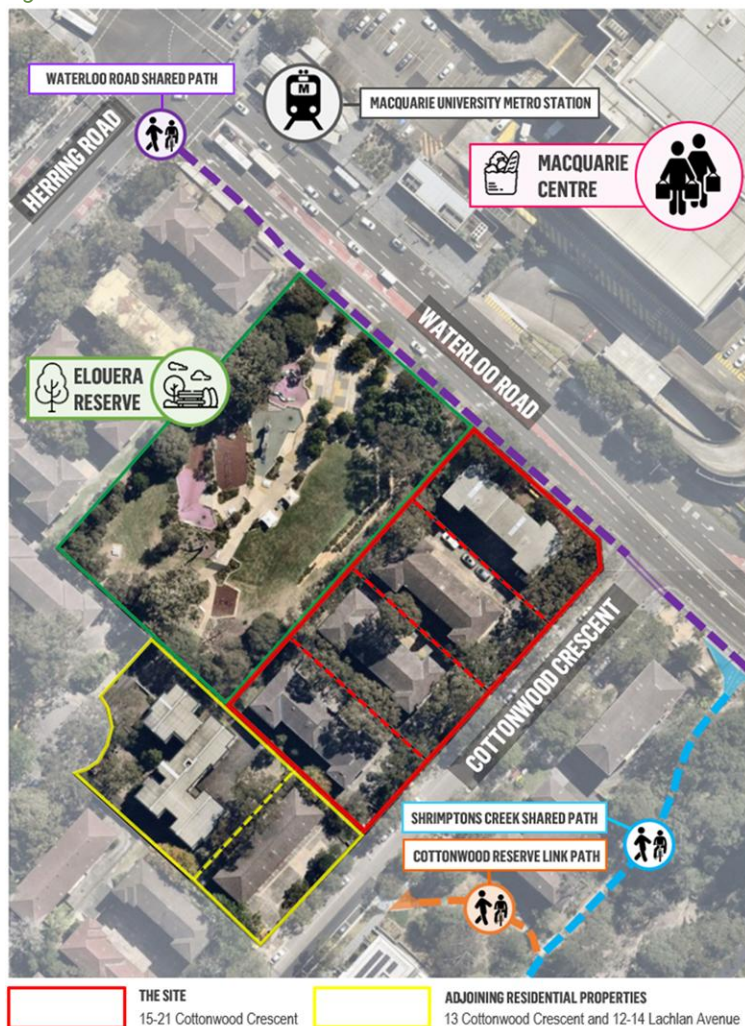
- Two buildings with a shared podium and 6 basement levels.
 - 858 residential units in total, separated into 2 buildings;
 - Cottonwood – 432 units across 52 levels
 - Waterloo – 426 units across 60 levels
 - Retail tenancies with a total GFA of 110m²

All figures and calculations are based on area schedules as advised by our client and shown on architectural drawings.

1.1 SITE LOCATION

The site is located at 15-21 Cottonwood Crescent, Macquarie Park (SP8144, SP7630, SP7892, SP7984) within the Ryde Local Government Area (LGA).

Figure 1: Aerial Photo



Source: Urbis (Nearmap)

6 GENERAL WASTE MANAGEMENT PROVISIONS

6.1 Stakeholder Roles and Responsibilities

All stakeholders are responsible for managing their environmental performance and complying with all relevant legislation.

The Construction Contractor will have primary responsibility for implementing this WMP. However, all site personnel must ensure they comply with the plan and associated environmental requirements at all times.

Where feasible, an Environmental Management Representative (EMR) should be appointed to support implementation and monitor compliance.

The following table outlines the key roles and responsibilities of each stakeholder:

Table 4: Stakeholder Roles and Responsibilities

Roles	Responsibilities
Site Management	<ul style="list-style-type: none"> • Organise waste collections as required • Arrange replacement or maintenance of bins • Investigate and ensure prompt clean-up of illegally dumped waste materials • Notify the Principal Certifying Authority (Council) of the appointment of waste removal, transport or disposal contractors for waste tracking purposes • Ensure waste-related equipment is well maintained • Accurately calculate material requirements to avoid over-ordering • Ensure segregation of materials to maximise reuse and recycling • Routinely check waste sorting and storage areas for cleanliness, hygiene, contamination, and WHS issues • Ensure monitoring and audit results are documented and carried out as specified in the WMP • Provide effective signage, communication, and education to site staff and contractors • Provide staff/contractors with equipment manuals, training, WHS procedures, risk assessments, and PPE for waste management activities • Assess manual handling risks and prepare a control plan for waste and bin transfers
Site Staff/Contractors	<ul style="list-style-type: none"> • Separate and dispose of waste streams in compliance with the WMP • Abide by all relevant WHS legislation, regulations, and guidelines • Attend training and inductions as required • Clean and transport bins as required • Carry out daily visual inspections of waste storage areas • Organise, maintain, and clean waste storage areas
Environmental Management Representative (EMR)	<ul style="list-style-type: none"> • Establish local commercial reuse of materials where on-site reuse is not practical • Provide separate skips and recycling bins for effective waste segregation • Ensure staff and contractors are aware of site requirements • Deliver training on WMP requirements and waste management strategies adopted for the development • Manage contaminated waste, approve off-site waste transport and disposal locations, and check licensing requirements • Arrange assessment of potentially contaminated, hazardous, or liquid waste materials • Monitor, inspect, and report as required
Waste Collection Contractors	<ul style="list-style-type: none"> • Provide a reliable and appropriate waste collection service • Give feedback to site management regarding contamination of waste streams • Work with site management to customise waste systems where possible

6.2 Monitoring and Reporting

The following measures are recommended to improve demolition and construction waste management and to provide more reliable waste generation figures:

- Compare projected waste quantities with actual waste produced
- Conduct waste audits of current projects (where feasible)
- Record waste generated and disposal methods
- Review past waste disposal receipts
- Maintain records to inform future waste management plans

Records of waste volumes recycled, reused, or removed by contractors must be kept. Dockets/receipts verifying recycling and disposal in accordance with the WMP are to be retained and made available to Council or the EPA upon request.

Daily visual inspections of waste storage areas will be undertaken by site personnel, with checklists/logs submitted to the Site Manager weekly or as required. These inspections will assist in identifying and rectifying any resource or waste management issues.

Waste audits are to be carried out by the Building Contractor to assess the effectiveness of waste segregation and recycling/reuse initiatives. Where audits indicate procedures are ineffective, additional staff training should be provided and site signage reviewed.

All environmental incidents must be managed promptly to minimise potential impacts. An incident register is to be maintained on-site at all times and include the 24-hour EPA Pollution Line contact details. Potential incidents during demolition and construction may include fuel or chemical spills, seepage or mishandling of hazardous waste, and unlicensed discharge of pollutants to the environment.

6.3 Opportunities for Reuse and Recycling

There are many opportunities to reduce waste volumes during demolition and construction. Adaptive reuse of building materials should be encouraged, with consideration given to both reusing or recycling materials on-site and sourcing used or recycled materials from external suppliers for use in the development.

Where practical, the site should facilitate reuse and recycling through ‘deconstruction’, in which materials are carefully dismantled and sorted. Unwanted but reusable items can be taken to second-hand building centres, helping to reduce disposal costs.

Where possible, individually wrapped materials should be avoided. Preference should be given to products supplied in returnable or reusable packaging, such as timber pallets.

The table below provides examples of potential reuse and recycling options for materials likely to be generated or required during demolition and construction of this development:

Table 5: Potential Reuse/Recycling Options for Construction Materials

Material	Reuse/Recycling Potential
Asphalt	Hot in-place recycling or reprocessed into Reclaimed Asphalt Pavement (RAP).
Bricks	Cleaned and/or rendered for reuse, crushed for fill, sold or provided to a recycled materials yard
Cardboard Packaging	Recycled at a paper/cardboard recycling facility
Carpet	Cleaned and reused for the same purpose, reused in landscaping or garages/sheds, recycled at an appropriate processing facility
Concrete, Masonry, Spoil	Reused on-site as fill, levelling or crushed for road base
Doors, Windows, Fittings	Reused in new or existing buildings or sent to second-hand supplier
Glass	Recycled at a glass recycling facility, aggregate for concrete production, crushed for termite barrier, reused as glazing
Green Waste (Organics)	Mulched, composted for reuse, trees chipped for use in landscaping or removed carefully and reused onsite or sold
Hardwood Beams	Reused as floorboards, fencing, furniture or sent to second-hand timber supplier
Insulation Material	Reprocessed to remove impurities and reused for the same purpose or as off-cuts, compressed for ceiling tile manufacture
Metal, Steel/Copper Pipe	Recycled at a metal recycling facility, melted into secondary materials for structural steel, roofing, piping etc. copper sold for re-use
Other Timber	Reused in formwork, ground into mulch for garden or sent to second-hand timber supplier
Plasterboard	Crushed for reuse in manufacture of new plasterboard, returned to supplier or used in landscaping
Plastics	Reused as secondary materials for playgrounds, park benches etc.
Roof Tiles	Cleaned and reused, crushed for reuse for landscaping and driveways or sold or provided to a recycled materials yard
Soil	Stockpiled onsite for reuse as fill
Synthetic & Recycled Rubber	Reused for the same purpose or reprocessed for use in manufacture/construction of safety barriers, speed humps
Topsoil	Stockpiled onsite for reuse in landscaped areas

6.4 Management of Hazardous Waste Materials

For the purpose of this report, hazardous waste materials include any waste that poses a hazard or potential harm to human health or the environment, particularly asbestos waste and asbestos containing material (ACM). The general advice provided in this report is superseded by any specific hazardous materials or remediation control plans prepared for the project.

During the construction phase of the development, there must be a commitment to engage qualified and certified contractors to remove all contaminated/hazardous materials (e.g. asbestos) and dispose of all contaminated/hazardous waste at an appropriately licenced facility, where applicable.

In the event that any contaminated or hazardous materials are unexpectedly uncovered during demolition or excavation works, the Site Manager is to stop work immediately in that location and contact the relevant hazardous waste contractor prior to further works being undertaken in the area.

The following general mitigation measures will apply:

- Contaminated material stockpiled on site will be minimised as far as possible and should be stored on HDPE liner, in a bunded location which is protected from inclement weather;
- Sediment fences should be installed around the base of stockpiles and the stockpiles should be covered. Where excavated material requires validations, samples should be taken for NATA laboratory testing as per the requirements of the contamination assessment prior to restoration works, backfilling exercises and disposal;
- Any trucks carrying contaminated materials should be securely and completely covered immediately after loading the materials (to prevent windblown emissions and spillage) and must be licensed by the NSW Environmental Protection Authority (EPA);
- Decontamination of all equipment prior to demobilisation from the site is important so that contaminated materials are not spread off-site.

6.5 Management of Excavation Waste

For the purpose of this report, excavation waste consists of any unwanted material generated from excavation activities such as a reduced level dig, site preparation and levelling and the excavation of foundations, basements, tunnels and service trenches. This will typically consist of soil and rock. The general advice provided in this report is superseded by any specific hazardous materials or remediation control plans prepared for the project.

All excavated material generated on this site may be re-used in the landscaping or used on other sites as fill material, provided no contamination is present. If sandstone is found to be present, this may be sold or incorporated into the building design.

The following measures and safeguards will apply to the development for excavated material:

- Wherever practical, excavation material will be reused as part of the development;
- Excavation material that is not natural (virgin) material will be transported to an approved landfill site or off-site recycling depot;
- A waste classification assessment of the fill material should be undertaken prior to it being acceptable for waste disposal purposes;
- Transportation routes for excavation material removed from site will be identified and used.

7 SITE SPECIFIC WASTE MANAGEMENT PROVISIONS

7.1 Demolition Waste Volumes and Management

Demolition waste volumes were estimated using benchmark waste generation rates published by Camden Council (2019) and Shoalhaven City Council (2012). As there are no state-wide demolition waste benchmarks currently available in NSW, these local government figures represent the most robust and recognised guidance for estimating waste generation.

The steps taken in our calculations were as follows:

1. **Establish demolition GFA** – total area of existing buildings scheduled for demolition.
2. **Apply benchmark rates** – published average waste generation rates (m³/m² and t/m²) applied to demolition GFA in line with Camden and Shoalhaven guidelines.
3. **Material breakdown** – proportions for each material stream allocated in line with Camden and Shoalhaven guidelines.
4. **Diversions assumptions** – recovery rates assigned to each material stream based on available processing capacity in NSW (EPA, *Waste and Resource Recovery Infrastructure Strategy 2017–2021*) and established industry practice in the construction and demolition sector.

The table below presents the estimated demolition waste volumes by material stream, expressed in both cubic metres (m³) and tonnes (t).

Table 6: Demolition Waste Volumes and Management

Material	Volume (m ³)	Mass (t)	Recovery %	Diverted (t)
Excavation Material	0.00	0.00	100%	0.00
Green Waste	69.26	20.78	95%	19.74
Bricks	1013.51	1621.61	90%	1459.45
Tiles	23.09	41.55	90%	37.40
Concrete	6596.81	15832.34	95%	15040.72
Timber	1388.95	833.37	80%	666.69
Plasterboard	1685.21	842.60	30%	252.78
Metals	23.09	184.68	98%	180.99
Asbestos	11.54	11.54	0%	0.00
Residual Waste	2008.40	602.52	10%	60.25
Other Waste	23.09	11.54	20%	2.31

Total Diversion (%)	89%
---------------------	-----

Based on our calculations, 89% of demolition waste is expected to be diverted from landfill, exceeding the NSW WARR Strategy target of 80%.

The following table outlines the disposal pathways for each waste stream expected to arise during the demolition phase. It identifies whether materials can be reused on site, recycled through established recovery facilities, or must be directed to landfill. This breakdown demonstrates the application of industry best practice and compliance with NSW recycling infrastructure capacity.

Table 7: Demolition Waste Disposal Pathways

Material	Reuse on site	Recycled	Landfilled	Notes
Green Waste	Yes	Yes	No	Mulch/compost
Bricks	Possible	Yes	Residual	Crushed to aggregates
Tiles	No	Yes	Residual	Crushed to aggregates
Concrete	Possible	Yes	Minimal	Crushed for road base/aggregate
Timber	Possible	Yes	Yes	Untreated timber recyclable; treated to landfill
Plasterboard	No	Yes	Residual	Specialised gypsum recycling
Metals	No	Yes	No	Scrap metal recovery
Asbestos	No	No	Yes	Licensed disposal only
Residual Waste	No	Limited	Yes	Unrecyclable mixed waste
Other Waste	Yes	Yes	Yes	Depends on material type

The above allocations indicate that the majority of demolition waste can be diverted from landfill through reuse and recycling, significantly reducing environmental impact and supporting compliance with project diversion targets.

7.2 Construction Waste Volumes and Management

Construction waste volumes were estimated using benchmark waste generation rates published by Camden Council (2019) and Shoalhaven City Council (2012). As there are no state-wide construction waste benchmarks currently available in NSW, these local government figures represent the most robust and recognised guidance for estimating waste generation.

In addition, excavation waste has been calculated separately. The methodology was as follows:

1. **Establish new GFA** – total area of new construction works.
2. **Apply benchmark rates** – published average waste generation rates (m³/m² and t/m²) applied to the new GFA.
3. **Material breakdown** – proportions for each material stream allocated in line with Camden and Shoalhaven guidelines.
4. **Excavation waste** – calculated separately using the following formula:
 Excavation volume (m³) = Basement area (m²) × Excavation depth (m)
 Excavation mass (t) = Excavation volume (m³) × 1.8 t/m³
5. **Diversion assumptions** – recovery rates assigned by material stream based on available processing capacity in NSW (EPA, *Waste and Resource Recovery Infrastructure Strategy 2017–2021*) and established industry practice in the construction and demolition sector.

The table below presents the estimated construction waste volumes by material stream, expressed in both cubic metres (m³) and tonnes (t).

Table 8: Construction Waste Volumes and Management

Material	Volume (m ³)	Mass (t)	Recovery %	Diverted (t)
Excavation Material	128979.00	232162.00	100%	232162.00
Green Waste	167.46	50.24	95%	47.72
Bricks	1130.33	1808.52	90%	1627.67
Tiles	125.59	226.07	90%	203.46
Concrete	3035.14	7284.34	95%	6920.12
Timber	774.48	464.69	80%	371.75
Plasterboard	334.91	167.46	30%	50.24
Metals	10110.16	80881.25	98%	79263.62
Asbestos	0.00	0.00	0%	0.00
Residual Waste	125.59	37.68	10%	3.77
Other Waste	2156.00	1078.00	20%	215.60

Total Diversion (%)	99%
---------------------	-----

Based on our calculations, 99% of construction waste is expected to be diverted from landfill, exceeding the NSW WARR Strategy target of 80%.

The following table outlines the disposal pathways for waste streams expected during the construction phase of the project. Materials are categorised according to their most suitable management option, including reuse on site, recycling, or landfill disposal where no recovery options are available. This approach ensures construction waste is managed in line with industry practice and contributes to achieving the project's waste diversion targets.

Table 9: Construction Waste Disposal Pathways

Material	Reuse on site	Recycled	Landfilled	Notes
Excavation Material	Yes	Yes	No	Clean spoil reused as backfill or sent as clean fill
Green Waste	Yes	Yes	No	Mulch/compost
Bricks	Possible	Yes	Residual	Crushed to aggregates
Tiles	No	Yes	Residual	Crushed to aggregates
Concrete	Possible	Yes	Minimal	Crushed for road base/aggregate
Timber	Possible	Yes	Yes	Untreated timber recyclable; treated to landfill
Plasterboard	No	Yes	Residual	Specialised gypsum recycling
Metals	No	Yes	No	Scrap metal recovery
Asbestos	No	No	Yes	Licensed disposal only
Residual Waste	No	Limited	Yes	Unrecyclable mixed waste
Other Waste	Yes	Yes	Yes	Depends on material type

As shown above, most construction waste streams can be effectively reused or recycled, ensuring that landfill disposal is limited to residual materials and supporting the achievement of high diversion rates.

7.3 Recycling Directory

Construction and demolition materials removed from site will need to be managed in accordance with the provisions of current legislation and may include segregation by material type classification in accordance with NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste* and disposal at facilities appropriately licensed to receive the particular materials.

Please find the below recommendations for recycling drop off locations for all materials likely to be generated at this development. Only the nearest locations are provided. See www.businessrecycling.com.au for additional locations:

Table 10: Recycling Directory

	Business Name	Suburb	Distance (km)
Excavation Material	Bingo Industries Recycling Centre	Artarmon	1.7
	Bingo Industries Recycling Centre	Alexandria	12.7
	Sydney Transwaste Industries	Homebush West	13.2
Green Waste	Bingo Industries Recycling Centre	Artarmon	1.7
	Bingo Industries Recycling Centre	Alexandria	12.7
	Sydney Transwaste Industries	Homebush West	13.2
Bricks	Bingo Industries Recycling Centre	Artarmon	1.7
	Cleanway Ryde Resource Recovery Centre	North Ryde	4
	Bingo Industries Recycling Centre	Alexandria	12.7
Tiles	Bingo Industries Recycling Centre	Artarmon	1.7
	Cleanway Ryde Resource Recovery Centre	North Ryde	4
	Concrete Recyclers (Group) Pty Ltd	Camellia	12.7
Concrete	Cleanway Ryde Resource Recovery Centre	North Ryde	4
	Bingo Industries Recycling Centre	Alexandria	12.7
	Concrete Recyclers (Group) Pty Ltd	Camellia	12.7
Timber	Bingo Industries Recycling Centre	Artarmon	1.7
	Cleanway Ryde Resource Recovery Centre	North Ryde	4
	Ironwood Australia	Rozelle	8
Plasterboard	Bingo Industries Recycling Centre	Artarmon	1.7
	Kimbriki Road	Ingleside	13.3
	Bingo Industries Recycling Centre	Auburn	14.4
Metals	SMS Municipal Services	Brookvale	1.3
	Bingo Industries Recycling Centre	Artarmon	1.7
	4G Metals/Wanless	Artarmon	1.9

7.4 Site-Specific Operational Measures

Training/Site Inductions

All staff employed during the demolition and construction stages of the development must undertake site-specific induction training regarding the procedures for waste management. Employees of the head contractor will undertake a specific induction outlining their duties and how they are to enforce the waste management procedures.

Induction training will include the following at a minimum:

- Legal obligations;
- Emergency response procedures on site;
- Waste storage locations and separation of waste;
- Litter management in transit and on site;
- The implications of poor waste management practices;
- Correct use of general-purpose spill kits;
- Responsibility and reporting (including identification of personnel responsible for waste management and individual responsibilities).

Materials Selection and Ordering

- Selection of all materials will be undertaken by architectural designers;
- Prefabrication of materials off-site where possible;
- Materials requirements are to be accurately calculated to minimise waste from over-ordering;
- Materials ordering process is to aim at minimisation of materials packaging;
- Material Safety Data Sheets (MSDS) are to accompany all materials delivered to site, where required, to ensure that safe handling and storage procedures are implemented.

Waste Avoidance Opportunities

- Limiting unnecessary excavation;
- Selection of construction materials taking into consideration to their long lifespan and potential for reuse;
- Ordering materials to size and ordering pre-cut and prefabricated materials;
- Reuse of formwork;
- Planned work staging;
- Use of naturally ventilating buildings to reduce ductwork;
- Reducing packaging waste on-site by returning packaging to suppliers where possible, purchasing in bulk and requesting cardboard or metal drums rather than plastics;
- Requesting metal straps rather than shrink wrap and using returnable packaging such as pallets and reels;
- Reduction of PVC use;
- Use of low VOC (volatile organic compounds) paints, floor coverings and adhesives;
- Use of fittings and furnishings that have been recycled or incorporate recycled materials;
- Use of building materials, fittings and furnishings with consideration to their longevity, adaptation, disassembly, reuse and recycling potential.

Site Procedures

- Excavated materials will be used onsite where practical;
- Green waste will be mulched and reused in landscaping either onsite or offsite;
- Concrete, tiles and bricks will be reused or recycled offsite;
- Steel will be recycled offsite; all other metals will be recycled where economically viable;
- Framing timber will be reused on-site or recycled off-site;
- Windows, doors and joinery will be recycled off-site where possible;
- Plumbing, fittings and joinery will be recycled off-site where possible;
- Plasterboard will be re-used in landscaping on-site or returned to the supplier for recycling where possible;
- All used crates will be stored for reuse unless damaged;
- All glass that can be economically recycling will be;
- All solid waste timber, brick, concrete, rock, plasterboard and other materials that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner;
- All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with WorkCover Authority and EPA requirements;
- Provision for the collection of batteries, fluorescent tubes, smoke detectors and other recyclable resources will be provided on site;
- Beverage container recycling will be provided on-site for employee use;
- All waste and recycling will be disposed of via council approved systems.

7.5 Location and Design of Waste Management Facilities

General Requirements

All waste management facilities onsite should:

- Be conveniently located to enable easy access for on-site movement and collection;
- Be incorporated with other loading/unloading facilities;
- Have sufficient space for the quantity of waste generated and careful source separation of recyclable materials;
- Have sufficient space to contain any on-site treatment facilities, such as compaction equipment;
- Have adequate weather protection and, where required, be enclosed or undercover;
- Be secure and lockable;
- Be well-ventilated and drained to the sewer;
- Be clearly sign-marked to ensure appropriate use.

Waste and Recycling Receptacles

A sufficient quantity of skip bins should be provided for the separate storage of each type of C&D material generated on site. This will assist in maximising source separation and resource recovery, while reducing the costs and quantity of materials disposed of at landfill.

The size of the receptacles should be appropriate to the nature of waste generated and the available storage area. In general, the following options would be acceptable:

Bin Size	Access	Dimensions
2.5m	Top loading	 H: 1.0m L: 2.0m W: 1.2m
3m	Drop door walk-in	 H: 1.0m L: 2.4m W: 1.5m
4m	Drop door walk-in	 H: 1.2m L: 2.6m W: 1.6m
5m	Drop door walk-in	 H: 1.4m L: 3.0m W: 1.6m
6m	Double doors walk-in	 H: 0.9m L: 4.0m W: 2.0m

Source: Aussie Bins

If the developer chooses to adopt a traditional waste management strategy, whereby waste is deposited into commingled skip bins to be sorted offsite, skip bins would be considered sufficient for purpose. However, if the site is to pursue source separation, dedicated skips for the following materials are recommended:

- Timber;
- Plasterboard;
- Concrete;
- Bricks;
- Scrap metal;
- General waste.

Separate receptacles for the safe disposal of hazardous waste types (i.e. light bulbs, batteries, etc) will also be provided where applicable. Where possible, additional bins will be provided in common areas for the collection of commingled recyclables such as beverage containers (glass, plastic, aluminium), paper products, recyclables food containers, etc. Specialised bins for cigarette butts should also be provided.

Safety and Signage

The following safety measures should be considered for the waste storage area:

- Location should not interfere with sight lines of drivers entering or leaving the site;
- Skip bins should be clearly visible and located in well-lit areas;
- Safe paths of travel should be designated using reflective tape, barriers and cones;
- Skip bins must be secured and must not be over-filled to reduce risk of injury through bins moving and falling objects.

Standard signage will be installed in all waste areas, with all skip bins colour coded and labelled appropriately on all sides to allow clear identification of the type of waste to be deposited into each bin.

Refer to the EPA's website for standard construction waste and recycling signs:

www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm

Space and Siting Requirements

The waste storage area will be located adjacent to the entrance to the site to enable access and allow sufficient space for the required skip bins and servicing requirements. The storage area will also be flexible in order to cater for change of use throughout demolition and construction works.

Where space is restricted, dedicated stockpile areas will be allocated onsite, with regular transfers to the dedicated skip bins for sorting and collections.

The position of the designated waste holding area onsite may change according to building works and the progression of the development. Access, visual amenity and WHS will always be integral to the selection of waste storage area locations. Any stockpile locations will take into account slope and drainage factors to avoid contamination of stormwater drains during rain events.

Servicing and Transport

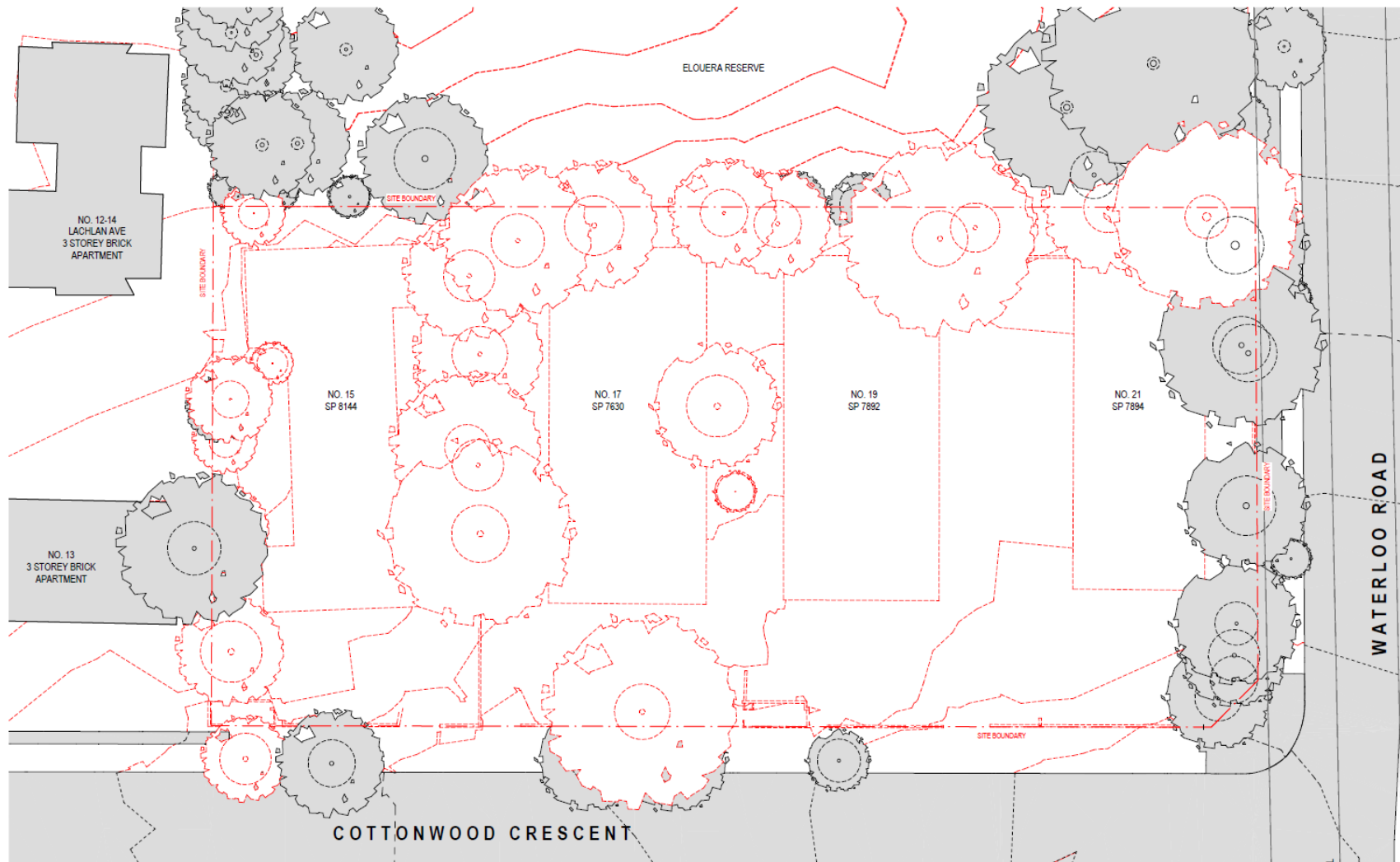
The frequency of waste removal from site will be determined by the volume of materials deposited into the dedicated skip bins. Skip bins will be monitored on a daily basis by the Site Manager to ensure they do not overflow. If skip bins are reaching capacity, removal and replacement should be organised for within 24 hours.

All skip bins leaving the site will be covered with a suitable tarpaulin to reduce spillage of waste while in transit.

All waste collection for construction works will be conducted between approved hours as per Council requirements (typically between 7am and 7pm Monday to Friday, and between 7am and 1pm on Saturdays). All waste generated on site will be transported to an approved and appropriately licensed resource recovery facility and/or landfill site.

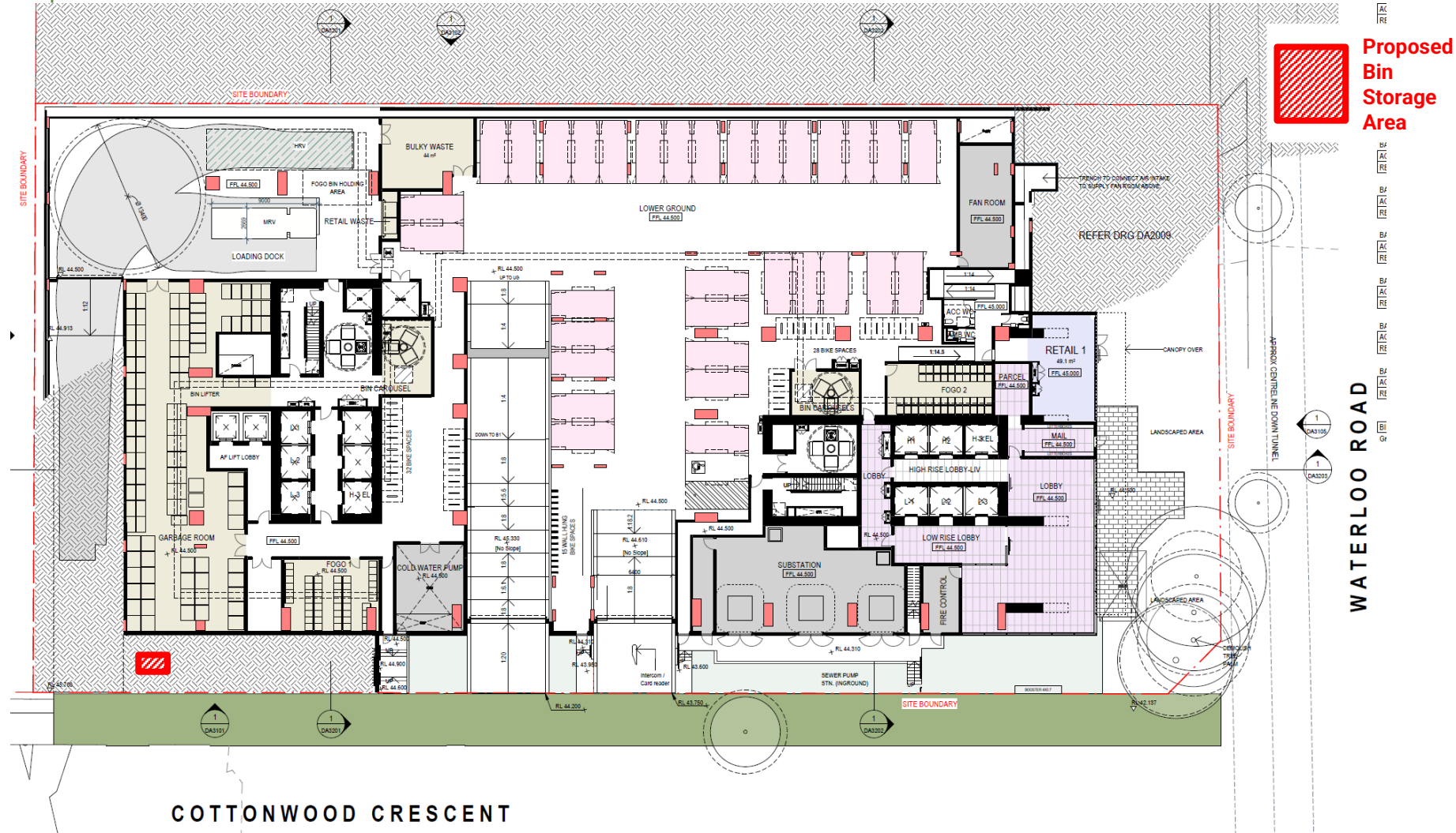
7.6 Demolition Plan

Existing Structures



Source: AJC, DA1100 – Demolition Site Plan, Rev 3, 30/01/2026

Proposal



COTTONWOOD CRESCENT

Source: AJC, DA2007 – Lower Ground, Rev 3, 30/01/2026

Note: the proposed bin location is indicative only, this may change based on site logistics.