



Waste Management Plan

Proposed Tourism Development

At 39 – 65 Old Castlereagh Road, Castlereagh

On behalf of Morson Group



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1 Introduction

1.1. Background

Colliers International Engineering & Design (TTMC) has been engaged by Morson Group to prepare a precinct Waste Management Plan (WMP) to support the development located at 39 – 65 Old Castlereagh Road, Castlereagh.

The proposal seeks approval for a tourism-oriented development comprising three (3) buildings across separate lots, including a hotel, an indoor recreation facility with two (2) drive-through restaurants, and a registered club. The proposal also includes associated vehicle access, on-grade and above-ground parking, and site infrastructure.

Development Overview:

Lot 12

- A seven (7) storey hotel with 147 rooms, restaurant, gym, spa, pool, and associated facilities.
- Multi-level above-ground car parking.

Lot 14

- A 5,713m² indoor recreation facility.
- Two (2) restaurants with capacity for drive-through.
- Associated on-grade car parking.

Lot 16

- A 5,177m² registered club building.
- Associated on-grade car parking.

Staging:

The proposed development is intended to be delivered in stages as outlined below:

Early Works Stage

- Demolition of existing dwellings and structures on the site.
- Installation of stormwater infrastructure, including partial construction of the stormwater system and a flood relief pipe at the rear of the site.
- No bulk earthworks are proposed in this stage.

Stage 1

- Construction of the hotel building on Lot 12.

Stage 2

- Construction of the indoor recreation facility and restaurants on Lot 14.

Stage 3

- Construction of the club building on Lot 16.

1.2. Scope

The recommendations in this report relate to the solid refuse generated in the demolition, construction and operational phases of the development. The items covered within the report are explained in Table 1.1.

It is understood this WMP will be submitted to the Department of Planning, Housing and Infrastructure in support of a Concept Development Application (CDA).

The key information for regulatory approval can be found in Sections 2 and 3. As the development is proposed to be delivered in stages, the application is being submitted at a detailed concept level for Lot 12 as Stage 1 and at a concept level for Lot 14 and Lot 16 as the subsequent stages. This WMP seeks to address the proportionate planning assessment benchmarks for each Lot in providing a deemed to satisfy waste management strategy across the precinct.

The content of the operational phase section of this WMP is intended to provide information on the typical movement of waste streams from disposal to collection. Information on refuse management is given for all three buildings within the proposed development.

Further information including site plans and drawings, recommended refuse management equipment and system specifications, common refuse signage as well as a list of terms and abbreviation are provided in the appendices.

Table 1.1: Scope Items

Item	Explanation
Refuse streams	Identification of refuse streams & anticipated development refuse volumes likely to be produced.
Refuse separation	Recommendations for appropriate segregation methods for each refuse stream
Refuse collections	Assessment of refuse collection vehicle (RCV) access and manoeuvring
Refuse storage	Detailed analysis of refuse storage facilities and design
Refuse transfer	Assessment of refuse transfer between refuse storage and collections areas
Refuse disposal	Recommendations for refuse disposal within the development
Refuse management equipment	Identification of recommended and optional refuse management systems and equipment
Refuse management operations	Recommendations for operational efficiency and ongoing management, including refuse minimisation, tenant education and safety
Building design	Recommendations for design of refuse management facilities

1.3. Site Analysis

The site is located at 39 – 65 Old Castlereagh Road, Castlereagh shown in Figure 1.1. The site is formally described as Lot 12, Lot 14 and Lot 16 on DP793163.

The site is located within the Zoned land (tourism) area of the Penrith Lakes masterplan.

The development site has a single road frontage on Old Castlereagh Road.

The existing lots contain 2 separate single storey freestanding brick and tile roof residential dwellings with a number of ancillary outbuildings and structures typical of large lot residential sites.



Figure 1.1: Site Location

Source: Nearmap, image dated 23/02/2025

1.4. Development Statistics

Table 1.2 provides a summary of the development as context for the operational refuse volume information provided in Section 3.

Table 1.2: Development Summary

Lot	Level	Description	Measure *
Lot 12 – Hotel	Ground Level	Hotel Lobby and Offices	92m ² GFA
		Hotel Suites	15 Suites
	Level 1	Laundry	36m ² GFA
		Hotel Suites	24 Suites
	Level 2 - Podium	Kitchen and Restaurant	474m ² GFA
		Gymnasium & Ancillary Facilities	291m ² GFA
		Hotel Suites	18 Suites
	Level 3	Hotel Suites	32 Suites
	Level 4	Hotel Suites	28 Suites
	Level 5	Hotel Suites	16 Suites
	Level 6	Hotel Suites	14 Suites
	Subtotal		893m² GFA
			147 Suites
Lot 14 – Indoor Recreation Facility with two Drive-through Restaurants	Ground Level	Kitchen and Restaurant 1	250m ² GFA
		Kitchen and Restaurant 2	249m ² GFA
		Indoor Recreation	92m ² GFA
	Entry Level	Restaurant 1 Upper Level	400m ² GFA
		Restaurant 2 Upper Level	399m ² GFA
		Indoor Recreation	4,691m ² GFA
	Mezzanine	Indoor Recreation	930m ² GFA
	Subtotal		7,010m² GFA
Lot 16 – Registered Club	Ground Level	Club	400m ² GFA
	Entry Level	Club	3,855m ² GFA
	Mezzanine	Club	922m ² GFA
	Subtotal		5,177m² GFA

* Refuse generating areas only; areas such as carparking, amenities, stair presses, or circulation space may not be included as not directly being a source of refuse generation. Areas may differ from total GFA as depicted on architectural drawings.

1.5. Regulatory Considerations

1.5.1. State Government Requirements

This plan has been prepared to align with DPHI's waste management requirements as outlined in the State Environmental Planning Policy (Precincts—Western Parkland City) 2021 and Penrith Lakes Development Control Plan (DCP).

The plan satisfies DPHI's requirements by providing the following information:

- Type and quantity of refuse materials to be generated by the development uses during the demolition, construction and occupancy of the proposed site.
- Refuse collection, storage, transfer, and disposal arrangements during occupancy of the completed development.
- Recommended operational requirements for the operational phase of the development, including waste minimisation strategies.

Table 1.3 outlines the waste management items addressed to align the design and this WMP with the Penrith Lakes DCP.

Table 1.3: Penrith Lakes DCP Requirements

3.11 Waste Management		
Objectives		
a)	Facilitate sustainable waste management practices during the demolition, construction and operational phases of development.	
b)	Minimise the environmental impacts of waste through waste avoidance, minimisation, refuse and recycling.	
Controls		Comments / Compliance
1)	A waste management plan must be lodged with a development application, including demolition, construction, changes of use or a combination of these. The plan must include details regarding: a) the types and volumes of waste and recyclables generated during the demolition, b) construction and operational phases; c) details of onsite storage, treatment of waste, or both during the demolition, d) construction and operational phases; e) disposal of waste generated during the demolition and construction phases that f) cannot be re-used or recycled; g) ongoing management of waste during the operational phase of the development, h) including collection regime; and i) waste minimisation techniques, including recycling.	The WMP has been prepared to provide details on criterion a-i. Section 2 provides details of the proposed waste management arrangements during the demolition and construction phases. Section 3 provides details of the proposed waste management arrangements during the operational phase.

1.5.2. Council Considerations

Whilst the application and subject site is assessable under the Penrith Lakes DCP, the site is located within the broader Penrith City Council area. The Penrith Lakes DCP recognises that the Penrith Development Control Plan (DCP) 2014 serves as a guide to design.

Throughout this report, where appropriate or the Penrith Lakes DCP does not provide guidance, Colliers has referred to Penrith City Council's requirements as outlined in the Penrith Development Control Plan (DCP) 2014 Part C5 Waste Management as well as Penrith City Council's 'Industrial, Commercial and Mixed-use Waste Management guidelines'.

Details on the specific design aspects addressed to align with the Penrith City Council's waste management requirements as outlined in the 'Industrial, Commercial and Mixed-use Waste Management guidelines' is located in *Appendix A*.

2. Demolition and Construction Refuse Management

This section provides details on the collection, storage, transfer, and disposal of demolition and construction refuse within the development.

2.1. Demolition and Construction Waste Legislation

The transfer, transport and disposal of certain wastes carry legislative requirements that will need to be adhered to during the life of the project. This legislation has bearing on both the owner of the waste and the transporter.

Under Section 143 of the *Protection of the Environment Operations Act 1997*, waste can only be transported to a place that can lawfully accept it. If wastes are transported to a place that cannot lawfully accept the material, both the owner of the waste and the transporter can be held liable for clean-up costs and for subsequent lawful disposal. Therefore, it is essential for the project managers/owners to ensure that due diligence is undertaken prior to transportation of waste materials. Additional measures owners of waste can protect themselves from fines and penalties are outlined at <https://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>.

As part of the development consent, it will be a requirement to keep a copy of this WMP along with proof of lawful disposal for all waste that is disposed of, or otherwise recycled from the site must be retained on site in a Waste Data File. Proof is to include a logbook with associated receipt/invoices, waste classification, and site validation certificate. All entries must include:

- Time and date,
- Description and size of waste,
- Waste facility used, and
- Vehicle registration and company name.

Both the logbook and associated receipts must be made available for inspection by authorised Council Officers at any time during site works and at the conclusion of works should be retained by the person responsible and made available for inspection by authorised Council Officers.

2.1.1. Asbestos

Developments constructed or renovated in NSW prior to 1987 are likely to contain asbestos. There are specific laws relating to working with or around asbestos (*Work Health and Safety Regulation 2017*). If the houses or structures that are to be demolished were built prior to 1987, an asbestos specialist should be engaged to identify if asbestos containing materials (ACM) are present and an appropriate removal process be undertaken. For more information, visit <https://www.safework.nsw.gov.au/hazards-a-z/asbestos>. Asbestos may be found in cement sheet walls and sheet roofing, backing to floor tiles, external cladding, switchboard backings and lagging insulation for water pipes.

Details of removal procedures and risk management will be detailed in the Hazardous Building Materials Assessment Report. All works should be halted if unidentified materials are suspected. Additional sampling may be required to areas that were not accessible at the time the report was undertaken.

2.1.2. Contaminated Land

Any unexpected, contaminated soil identified after demolition and excavation has commenced is to be remediated and disposed of to an approved contaminated/remediated soil facility as per the *Contaminated Land Management Act 1997* as required by NSW EPA. If, during the course of demolition or excavation and activities lead to the contamination of land, or once a person becomes aware that there is evidence of previous contamination, there is a legal obligation to notify the EPA.

Further information on requirements can be found on the NSW EPA website at <https://www.epa.nsw.gov.au/Your-environment/Contaminated-land>

2.2. Planning For Demolition and Construction

In order to achieve effective waste reduction during the demolition, excavation and construction phases, there are a number of measures that should be undertaken by the project manager, D&C contractors, and site staff. Any commitment to reducing waste sent to landfill will need to be agreed by all stakeholders and actions coordinated early in the operational works planning phases, in order to achieve best practice diversion rates. These measures are discussed in the following sections.

2.2.1. Material Identification and Recovery

Prior to demolition, it is recommended that construction contractors meet with demolition contractors and site managers to identify those materials or items that are to be salvaged or reused during the demolition or construction stages or may be suitable for reuse on other project sites. All other materials should then be categorised based on acceptance criteria for available recyclers. This presents a clear idea of those materials that are to be excluded from being sent offsite for recycling/reprocessing or for disposal to landfill.

Key principles to be followed during demolition, in order of preference and generally in accordance with the waste hierarchy, include:

- Manual deconstruction of the following:
 - Materials that can be reused on site during further demolition and/or construction stages or used offsite
 - Materials of high cost to dispose/treat. This material should not be mixed with other generic building materials, as the entire load will be deemed as contaminated, and therefore the entire load will be charged at the higher rate
 - High risk/dangerous materials (e.g. asbestos) by a licensed contractor or suitably qualified person
 - Items that will attract a high rebate (e.g. copper pipe).
 - Where structures or building areas to be retained.
- Stockpiling of materials to be reused on site in a safe location to prevent damage or contamination (e.g. green waste that is mulched on site, covered and stored in an area of the site with limited works to prevent contamination with foreign materials).
- Segregation of like materials (e.g. timber) and separate storage on site in bins, depending on market availability of recycling agents.
- Materials that cannot be reused or recycled are to be disposed of to landfill.

Volumes will also be dependent upon the method of demolition, and greater recovery rates will be achieved with dismantling of building structures by hand rather than with heavy machinery however, the greater workplace health and safety risk needs to be assessed prior to deconstruction works commencing.

2.2.2. Anticipated Demolition Waste Volumes

Given the composition of construction materials used in the existing buildings across the 3 lots, Colliers have estimated volumes by using data available on the demolition of both 2 three-bedroom brick houses and 2 three-bedroom weatherboard houses. The 3-bedroom brick houses are representative of the main dwellings and the three-bedroom weatherboard houses account for the additional outbuildings on the large lots.

The resulting quantities are a guide only to assist in planning appropriate management solutions (access, bin capacity, training) for each of the predominant waste streams. As actual volumes are currently unknown, it is essential that the construction contractor complete the table in *Appendix C* as soon as known quantities of materials are calculated.

The estimation of volumes has been provided is indicative only however, demonstrates the estimated volumes of demolition materials for the site.

Table 2.1: Anticipated Demolition Waste Volumes

Material	Estimated Demolition Waste Quantities (2 x 3-Bedroom Brick Houses & 2 x 3-Bedroom Weatherboard Houses)
Bricks	30m ³
Concrete	38m ³
Timber	60m ³
Metal	50m ³
Plasterboard	42m ³
Roof Tiles	18m ³
Total	238m³

Data source: Camden City Council Waste Management Guidelines 2019 (Note: No volume estimate information is provided in the Penrith Lakes DCP or Penrith DCP or Industrial, commercial and mixed-use waste management guidelines)

2.2.3. Construction Waste Volumes

As the development has been designed for a CDA, anticipated construction volumes cannot be reliably quantified for the site at a concept stage.

Given the advanced concept design for Lot 12, Colliers have provided estimated volumes, by using data available on the construction of a Residential Flat Building, considering the built form and use type of the proposed development.

The construction volumes for Lot 14 and Lot 16 will vary based on the evolution of the concept and material choices decided in later design stages and as part of subsequent applications. It is therefore essential that the construction contractor for each of the 3 lots complete the table in *Appendix C* as soon as known quantities of materials are calculated.

Table 2.2: Anticipated Construction Waste Volumes – Lot 12

Material	Estimated Material for Construction (Residential Flat Building)
Bricks	3-4m ³
Tiles	1-2.5m ³ (<i>Multi dwelling housing</i>)
Concrete	6-7m ³
Timber	1-2m ³
Metal	1-2m ³
Plasterboard	1-2m ³
Roof Sheeting	N/A
Other Waste	10-15m ³
Total	23-34.5m³

Data source: Camden City Council Waste Management Guidelines 2019 (Note: No volume estimate information is provided in the Penrith Lakes DCP or Penrith DCP or Industrial, commercial and mixed-use waste management guidelines)

2.3. Demolition and Construction Methodologies

2.3.1. Demolition

The general methodology to be followed for completing the demolition stage of each Lot are as follows:

- Sourcing of recycling agents/contractors and transportation – gain an understanding of their site access requirements and bin choices
- Installation of any barrier fencing to protect pedestrian safety, access pathways, and items to be protected/retained
- Identification of best bin storage areas for the number of material streams and collection vehicle access, ensuring unimpeded access for users and waste collection contractors and protection from elements
- Installation of recycling bins
- Preparation of access points and installation of safety and educational signage at waste storage areas
- Site induction for all staff to include discussion on commitment to reuse and recycling, how to use bins appropriately, and who to contact if there are any issues
- If structures / buildings are built prior to 1987, a licensed asbestos contractor should be engaged to identify and remove asbestos. Any other hazardous materials should also be removed at this stage
- Services and utilities disconnected
- Demolition of existing structures – materials to be segregated into appropriately labelled bins in waste storage area. The method of deconstruction to maximise resource recovery is also listed below:

Demolition / Dismantle and Removal Item	Method
Bricks and concrete	Machine
Fixtures & fittings	Hand
Plasterboard	Hand
Roof timbers, floor & wall framing	Hand / Machine
Roof sheeting / tiling	Hand
Trees and vegetation	Machine
Windows and glass panels to be removed separately	Hand

- Regular checks on bin capacity and scheduling of removal contractors
- Waste Data File maintained and updated with each collection.

2.3.2. Construction

The key objectives for reducing total waste to landfill during the construction phase for each Lot should be to:

- Minimise the amount of waste generated for the project – this should be the primary focus “waste avoidance”,
- Maximise the amount of materials reused or salvaged, sent for reuse or recycling, and
- Minimise the amount of waste sent to landfill.

These goals can be achieved with the right planning, commitment, infrastructure and site preparation. The site foreman, and contractor representatives should be engaged early and clear guidelines on the expectations to minimise waste to landfill communicated.

Table 2.3 provides guidance on minimising the volumes of waste to landfill during the construction phase by concentrating efforts on the most preferable outcomes of the refuse hierarchy.

Table 2.3: Construction Waste Avoidance Methods

Waste Avoidance
Plan to use building materials with low wastage rates such as prefabricated or modular materials
Design using standard material sizes, reducing off-cuts and time and labour saving
Store materials appropriately from weather, accidents, machinery and theft
Regularly undertake stocktake checks to ascertain available resources
Check all goods upon delivery for defects and return to supplier – do not accept oversupply as compensation
Purchase materials or request materials to have no packaging where appropriate
Support the purchase of recycled content materials
Reuse
Reuse materials identified in the pre-planning consultation with the Site Foreman and construction contractor
Identify and source other salvaged materials from salvage yards or look for bespoke items on for sale websites/pages
Stockpile materials that can be reused in future stages or projects
Recycling
Provide separate bins for each material stream based on acceptance criteria from recycling contractors,
Some contractors will provide mixed bins and they will undertake the sorting process within their facility – this may be particularly useful where available space or access is limited
Remember to provide a comingled (mixed) recycling bin for staff to dispose of recyclables from lunches and packaging.

2.3.3. Construction Staging and Operational Continuity

As the development is proposed to be delivered in 3 separate stages, each Lot has been designed to have independent access via a separate driveway. Construction contractors will be required to ensure the exclusion zones and temporary fencing are confined to the boundaries of each respective Lot to ensure access to preceding operational stages is not impinged. Refer to Section 3.6 for further details on servicing arrangements for each Lot.

2.4. Waste Bin Guidelines

Bin size and service frequency will vary depending on type and intensity of the demolition or construction activity. All waste containers / skip bins are to be positioned within the property boundary. Bins outside of the property boundary such as the roadway or nature strip may require a permit application to Council. Storage of skip bins / containers should be placed in a suitable location as to not cause disturbance to normal stormwater flow and enclosed or protected from wind to prevent litter. Under no circumstances should hazardous, flammable or explosive materials be disposed of within skip bins.

All bins should be appropriately labelled, clearly visible to and from the property, easily accessible, stored in a well-lit area and within an area to remove potential for litter generation. Potential bins and stockpile locations are proposed to be located in close proximity to the area of work with unobstructed access to adjoining access roads.

Given the staged delivery of the project, site access points, stockpile and waste bin locations must consider operational components of the development site; construction site access should not occur via an operational stage.

Figure 2.1 and Figure 2.2 overleaf suggests potential locations for material stockpiles and waste bins during the demolition and construction phases however, this may vary dependant on operational need.

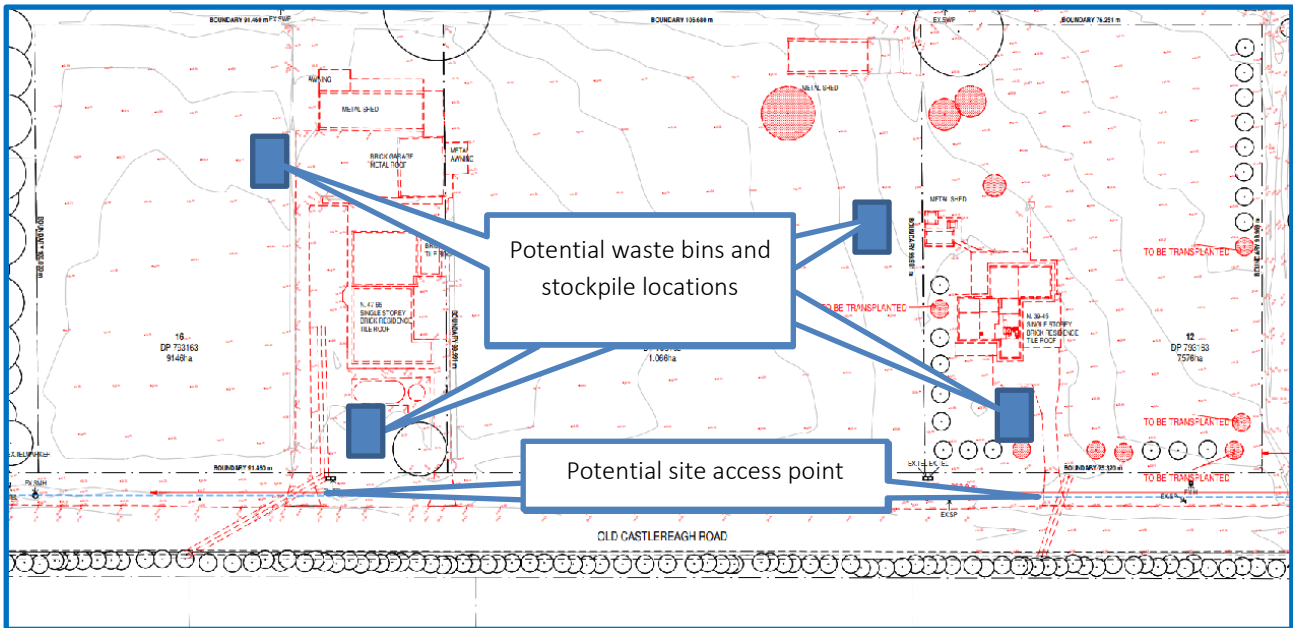


Figure 2.1: Potential Demolition Bin and Stockpile Locations

Source: Morson Group, Project: Castlereagh Tourism Development, Drawing: Demolition Plan and Proposed Road,
Drawing Number: DA06, Issue: A

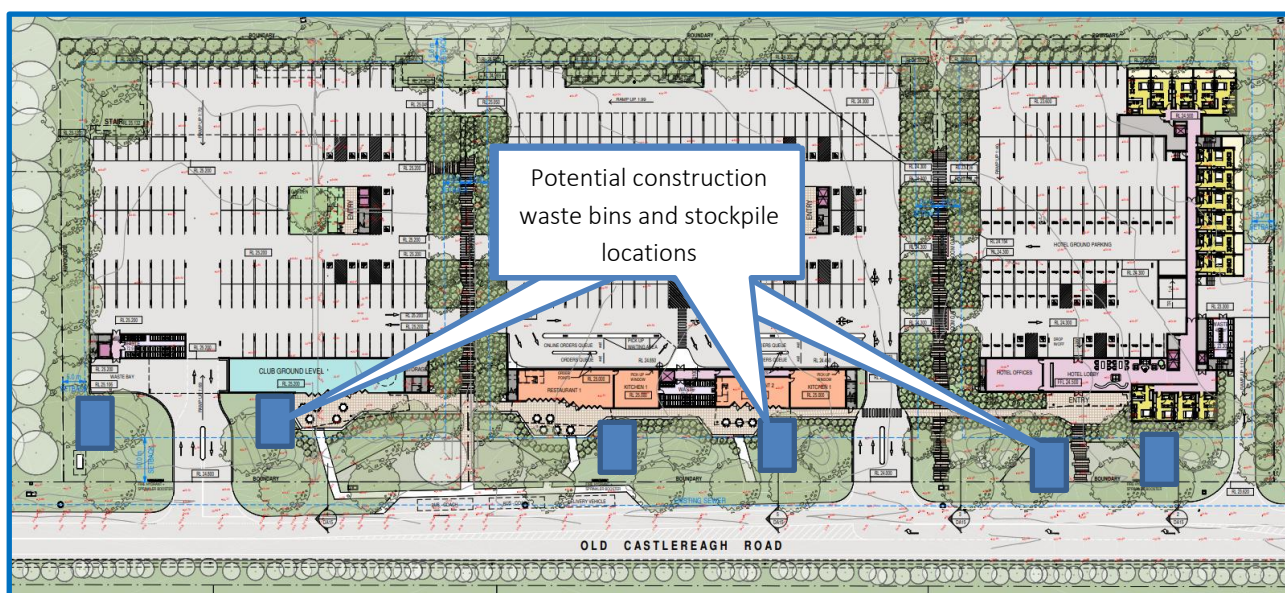


Figure 2.2: Potential Construction Bin and Stockpile Locations

Source: Morson Group, Project: Castlereagh Tourism Development, Drawing: Ground Floor Plan, Drawing Number: DA07, Issue: A

3. Operational Refuse Management

This section provides the detailed refuse calculations and describes the arrangements for the collection, storage, transfer, and disposal of refuse during the operational phase within the development. Information is presented on an individual Lot level. This includes associated bin quantities, storage capacities, equipment details, collection frequencies and site access details.

As Lot 12 has been prepared as an advanced concept, more detailed information is presented over the information provided for Lot 14 and Lot 16.

3.1. Anticipated Refuse Volumes

3.1.1. Lot 12

The refuse volumes utilised for the calculation of anticipated refuse generation are sourced from the NSW EPA *Better practice guide for resource recovery in residential developments* – Table F3 (NSW EPA BPG). The refuse generation rates utilised differ from the non-residential rates found within Penrith City Council's 'Industrial, Commercial and Mixed-use Waste Management guidelines'. However, the rates found within the NSW EPA BPG are based on NSW EPA audit results of refuse generation in commercial uses and considered to be an accurate reflection of likely refuse volumes.

Table 3.1 outlines the standard refuse generation rates utilised.

Table 3.2 details the further separation of the recommended 'General Waste' and 'Combined Recycling' generation rates into additional streams by percentage splits. The percentage splits have been applied in line with the expected refuse composition of each tenancy use.

Table 3.3 outline the refuse generation volumes that form the basis for waste storage area design and sizing.

Table 3.1: Refuse Generation Rates Lot 12

Generation Rate	Areas Applied To	Measure	General Waste	Combined Recycling
Motels	Each Hotel Suite	L / Room / Day	240	80
Restaurants	Restaurant and Kitchen	L / 100m ² / Day	400	280
Gymnasiums	Gym	L / 100m ² / Day	20	15
Offices	Hotel Offices and Laundry	L / 100m ² / Day	10	15

Table 3.2: Refuse Composition Splits

Area Description	General Waste		Recycling	
	General Waste	Food Waste	Commingle Recycling	Paper / Cardboard
Each Hotel Suite	100%	0%	95%	5%
Restaurant and Kitchen	70%	30%	50%	50%
Gym	100%	0%	100%	0%
Hotel Offices and Laundry	100%	0%	70%	30%

The refuse collection frequency has been established based on storage capacity between collections. A minimum storage capacity of 2 days is provided for all refuse streams and equates to a maximum of 4 collections per week or 7 collections per fortnight. A 7-day trading week has been assumed for all area uses within the hotel.

Table 3.3: Refuse Calculations – Lot 12

Area Description	Measure	Quantity	General Waste L/Week	Food Waste L/Week	Commingle Recycling L/Week	Paper / Cardboard L/Week
Hotel Suites	Suites	147	10,290	0	4,888	257
Restaurant and Kitchen	GFA (m²)	507	9,290	3,982	4,645	4,645
Gym	GFA (m²)	291	407	0	306	0
Hotel Offices and Laundry	GFA (m²)	128	90	0	94	40
Total Weekly Volumes (L / Week)			20,077	3,982	9,933	4,943
Volumes per Day (L / Day)			2,868	569	1,419	706
Volumes per Collection (L / Collection)			8,605	1,138	4,257	2,118
Collection and Equipment Details	Collections per Week		3	4	3	3
	Storage Capacity		3 Days	2 Days	3 Days	3 Days
	Equipment Size		1,100L	240L	1,100L	1,100L
	Equipment Quantity Required		7.82	4.74	3.87	1.93
	Equipment Quantity Provided		8	5	4	2

3.1.2. Lot 14

As the plans have been developed at a concept level only, internal layouts and tenancy fitout layouts are not available. As such a single generation rate has been applied to the total GFA of each tenancy, Colliers note this methodology is considered to provide a conservative estimate of refuse generation. Further developed plans that will be submitted as part of subsequent applications are likely to introduce additional internal uses to each tenancy, include further storage (such as cold rooms and freezers) as well as other non-refuse generating areas (such as lobbies or general circulation space). These developed plans are likely in result in reduced GFA and subsequently lower volumes of refuse generation.

The refuse volumes utilised for the calculation of anticipated refuse generation are sourced from the NSW EPA *Better practice guide for resource recovery in residential developments* – Table F3 (NSW EPA BPG). The refuse generation rates utilised differ from the non-residential rates found within Penrith City Council’s ‘Industrial, Commercial and Mixed-use Waste Management guidelines’. However, the rates found within the NSW EPA BPG are based on NSW EPA audit results of refuse generation in commercial uses and considered to be an accurate reflection of potential refuse volumes on a per 100m² basis. It is recommended these rates are maintained in subsequent applications for refined calculations.

Table 3.4 outlines the standard refuse generation rates utilised. Table 3.5 details the further separation of the recommended ‘General Waste’ generation rate into general waste and food organics by percentage splits. The separation of food waste has been designed to align with the NSW FOGO mandate legislation for non-residential uses. The further separation of the combined recycling stream into additional streams is expected to occur as part of subsequent developed applications in line with further developed design.

Table 3.6 outlines the refuse generation volumes that form the basis for waste storage area design and sizing.

Table 3.4: Refuse Generation Rates Lot 14

Generation Rate	Areas Applied To	Measure	General Waste	Combined Recycling
Cultural and Recreational Services	Total GFA – Indoor Recreation	L / 100m ² / Day	5	10
Restaurants	Total GFA – Restaurant 1 and 2 Upper and Lower Levels and Kitchen 1 and 2	L / 100m ² / Day	400	280

Table 3.5: Refuse Composition Splits

Area Description	General Waste	
	General Waste	Food Waste
Indoor Recreation	100%	0%
Restaurant and Kitchen	90%	10%

The refuse collection frequency has been established based on storage capacity between collections. A minimum storage capacity of 2 days is provided for all refuse streams and equates to a maximum of 4 collections per week or 7 collections per fortnight. A 7-day trading week has been assumed for all area uses / tenancies as a conservative measure for the calculation of refuse generation.

Table 3.6: Refuse Calculations – Lot 14

Area Description	Measure	Quantity	General Waste L/Week	Food Waste L/Week	Combined Recycling L/Week
Indoor Recreation	GFA (m ²)	5,713	2,000	0	3,999
Restaurant and Kitchen	GFA (m ²)	1,298	40,887	4,543	21,806
Total Weekly Volumes (L / Week)			42,887	4,543	25,806
Volumes per Day (L / Day)			6,127	649	3,687
Volumes per Collection (L / Collection)			18,380	1,298	11,060
Collection and Equipment Details	Collections per Week		3	4	3
	Storage Capacity		3 Days	2 Days	3 Days
	Equipment Size		1,100L	240L	1,100L
	Equipment Quantity Required		16.71	5.41	10.05
	Equipment Quantity Provided		17	6	10

3.1.3. Lot 16

Similarly to Lot 14, the plans for Lot 16 have been developed at a concept level only, internal layouts and tenancy fitout layouts are not available. As such a single generation rate has been applied to 80% of the total GFA of each level. Colliers note that clubs typically include significant gaming room space that does not directly generate refuse. This space is over and above the other non-refuse generation areas as per Lot 14 (such as food storage, lobbies or general circulation space). As a result, this methodology is considered to provide a conservative estimate of refuse generation. Further developed plans that will be submitted as part of subsequent applications are likely in result in reduced GFA and subsequently lower volumes of refuse generation.

The refuse volumes utilised for the calculation of anticipated refuse generation are sourced from the City of Sydney's *Guidelines for Waste Management in New Developments* – Reference A Waste Generation Rates (City of Sydney Guidelines). The refuse generation rates utilised exceed the generation rates for comparable uses found within Penrith City Council's 'Industrial, Commercial and Mixed-use Waste Management guidelines'. Additionally, the City of Sydney guidelines provide a standard generation rate for food organics and supports alignment with the NSW FOGO mandate legislation for non-residential uses. The further separation of the combined recycling stream into additional streams is expected to occur as part of subsequent developed applications in line with further developed designs.

Table 3.7 outlines the refuse generation rates applied to the calculations in Table 3.8 that form the basis for refuse storage area sizing.

Table 3.7: Refuse Generation Rates Lot 16

Generation Rate	Areas Applied To	Measure	General Waste	Food Waste	Combined Recycling
Pubs / clubs	80% of Total GFA	L / 100m ² / Day	100	40	150

Table 3.8: Refuse Calculations – Lot 16

Area Description	Measure	Quantity	General Waste L/Week	Food Waste L/Week	Combined Recycling L/Week
Club	GFA (m ²)	4,142	28,991	11,596	43,487
Volumes per Day (L / Day)			4,142	1,657	6,212
Volumes per Collection (L / Collection)			12,425	13,313	18,637
Collection and Equipment Details	Collections per Week		3	4	3
	Storage Capacity		3 Days	2 Days	3 Days
	Equipment Size		1,100L	240L	1,100L
	Equipment Quantity Required		11.30	13.81	16.94
	Equipment Quantity Provided		12	14	17

3.2. Refuse Bins and Equipment Requirements and Specification

Table 3.9 and Table 3.10 below outline the number of bins and additional equipment required for the development considering the volume calculations above.

As actual refuse volumes may vary from assessment benchmarks or over time according to evolving waste streams and occupant cohort, bin numbers and sizes may need to be altered to suit the building operation and occupant needs.

Table 3.9: Bin Requirements

Lot	Refuse Stream	Bin / Equipment - Type or Size	Bins Required
Lot 12	General Waste	1,100L	8
	Food Waste	240L	5
	Commingled Recycling	1,100L	4
	Paper / Cardboard	1,100L	2
Lot 14	General Waste	1,100L	17
	Food Waste	240L	6
	Commingled Recycling	1,100L	10
Lot 16	General Waste	1100L	12
	Food Waste	240L	14
	Commingled Recycling	1,100L	17

Table 3.10: Additional Equipment

Lot	Description	Quantity	Notes – See Appendix D for details
All	Individual Stream Separated Receptacles	TBD	Receptacles for the immediate disposal of refuse into separate streams. Typically, bins typically from 5L up to 90L in volume placed BoH, FoH or within hotel rooms. Refer to Section 3.3.1.
	Refuse / Cardboard Trolley	TBD (Optional)	Recommended to be provided by building management to assist in transfer of large volumes of refuse from each level to the refuse storage area.
	Battery Recycling Receptacle	3 (Optional & recommended)	Recommended for communal use in each building. Where provided, should be located in the refuse room of each building or alternate communally accessible location for the capture of mixed batteries for recycling to ensure separation from other waste streams.
	Used Cooking Oil Storage	1 per Kitchen Space	Portable storage tank stored BOH in each commercial kitchen. Required for food preparation / kitchens using fry vat equipment. Alternatively, bulk oil tanks may be used in the refuse store of each building.

3.3. Refuse Disposal

The tables in this section summarise general recommended disposal arrangement for frequently generated and infrequently generated refuse for each use within the development. 3.3.1 describes the frequently generated refuse streams that are generated in high volumes for any given period and require significant capacity for storage prior to collections. Section 3.3.2 describes the infrequently generated refuse streams that are generated in relatively low volumes, and where minimal provision for storage can be easily managed by ad-hoc collection as required.

3.3.1. Frequently Generated Refuse

Table 3.11: Disposal of Frequently Generated Refuse

Refuse Stream	Disposal Details
WASTE	
General Waste	Hotel Areas Guest Rooms will have receptacles for collection and storage of at least one day of general waste. Bins are to be accompanied by a commingled recycling bin in order to facilitate separation of general waste and recycling. General waste from food and beverage areas such as restaurants, function rooms is to be captured by bins typically ranging in size from 30L to 80L placed within the kitchen or back-of-house area to meet the design or layout criteria of the café or restaurant operators. Lot 14 and 16 Tenancies Depending on the type of operations of the individual tenancies, different wastes may be produced. Waste bins should always be lined with bags and the bags tied before removal. Waste bins must be accompanied by a recycling bin in order to facilitate separation of general waste and recycling. Café / restaurant waste will be captured by bins typically ranging in size from 30 L to 80 L that will be placed within the kitchen or back-of-house area to meet the design or layout criteria of the cafe or restaurant operators. Service type tenancies or areas will typically produce lighter wastes and may consider the use of larger bins. All tenancies will have a sufficient quantity of receptacles within each tenancy for collection and storage of at least one day of general waste. After each day of service or between peak operating periods, waste will be transferred by cleaning staff to the refuse storage area and placed / decanted into the bulk storage. Carts or trolleys may be used for transfer if required, e.g. to transport heavier waste, multiple bags or types of refuse at the same time. General waste from public spaces (e.g. food court / external dining) may include quantities of food waste, food packaging, drink bottles etc. General waste bins of an appropriate size to accommodate at least one day of waste should be located within the respective areas. Additional bins may be provided for special events. Each generating area should have a sufficient quantity of receptacles within that area for collection and storage of at least one day of general waste.
Organic (Food) Waste	Separating organic or food waste from general waste is provided to reduce the total amount of general waste produced to align with FOGO mandate legislation. Separation of food waste is required in all staff-controlled areas including commercial kitchens and staffrooms. Caddy bins up to 20L may be used in all staff areas. Caddies are transferred by cleaning staff to the refuse storage area and manually decanted into the maceration equipment provided. Separation may be considered in public areas; however, additional education and signage is required to assist patrons in the use of bins. Additional bin monitoring is also required to limit stream contamination. Where food waste is separated in the public realm, lidded bins must be provided to limit vermin and odour amenity issues.

Table 3.12: Disposal of Frequently Generated Recyclables

RECYCLING	
Comingled, including • glass • aluminum • steel cans • tins • cardboard • semi rigid plastics	The site operator will be required to provide receptacles for each separate refuse stream in a sufficient quantity to temporarily store one day or events' worth of refuse in each relevant back-of house area of the development. After each day of operation or between peak operating periods as required, refuse will be transferred by staff / cleaners to the refuse room via the goods lift and decanted into the appropriate bulk bins. The number of and location of bins provided will be determined during tenancy fitout and careful consideration should be given to the placement and types of bins to optimise source separation. A comingled recycling bin should accompany each general waste bin. Recycling from offices largely consists of clean paper (and cardboard) which can be collected separately from comingled recycling if large quantities are produced. In addition, comingled recycling may originate from pantries, staff rooms and meeting / conference rooms where bottled drinks or food is consumed. Comingled recycling will be captured in bins up to 90L that will be placed within the relevant back-of-house area to meet the design or layout criteria of the operators. Staff will circulate patron areas to collect recycling as it is generated. Bins will also be required within patron areas.
	Container deposit / refund schemes are currently in place in New South Wales. Various models exist including bottle return facilities and (automated) reverse vending machines. Occupants should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams and send back to a return point. Storage space or dedicated bins within the units or refuse rooms can be provided.
Cardboard and Plastic (plastic film / low-density polyethylene / high density polyethylene)	Separation of cardboard is provided for Lot 12, the hotel and may be provided for in Lots 14 and 16. Where separated, cardboard and plastics must not be mixed. They must be stored individually (and compacted or baled individually if equipment is selected in later design stages). Where possible, large cardboard boxes and plastic film or packaging should be removed from the refuse stream prior to going into the building. This involves decanting at the loading dock and providing trolleys or stackable containers for use in transporting the decanted goods to the relevant areas of the building. Where this material does make it into the building or to each a level, a bin, trolley or mobile container should be placed for disposal. When placed in a bin or trolley, this material is easily transferred to the refuse rooms and decanted into the appropriate bin or baling equipment.

3.3.2. Infrequent Waste

Table 3.13: Disposal of Infrequently Generated Waste

Refuse Stream	Disposal Details
Green Waste	Garden organic refuse also referred to as green waste will be produced from landscaped areas or potted plants around this development. Green waste is produced largely on a weather or seasonal dependent basis and based on plant selections. Green waste is usually removed by the designated maintenance contractor. The engaged contractor will be required to send this material to a composting or resource recovery facility rather than to a landfill.
Hard Waste / Bulky Goods	The bulk bins provided will also be utilised for bulky waste disposal. Where items are unsuitable for bulk bin disposal or where significant volumes are generated, such as during refits, coordinated collection arrangements will be made and goods items moved to the loading dock for collection. When storing bulky goods in a loading area, it is recommended that items are placed on a pallet for efficient loading via a pallet jack or forklift onto the RCV.
Hazardous Waste - Batteries	Batteries are highly volatile and must be disposed of separately and never in the general waste or commingled recycling bins. Colliers recommend a communal disposal point is provided by building management and located in an easily accessible location such as within the refuse enclosure.
Hazardous Waste	Limited volumes of hazardous or regulated wastes may be generated on site such as chemicals, paints or oils. Hazardous waste must be handled with due care, separated and securely stored for collection by a specialist waste contractor in accordance with the requirements of the <i>Protection of the Environment Operations Act 1997</i>. Please refer to local and NSW government websites for disposal options and further information.

3.4. Refuse Storage, Access and Rotation Requirements

3.4.1. Lot 12

All refuse generated from the various areas within the building will be stored within a single refuse storage area directly adjoining both the good lift and loading bay on ground level. The location of the refuse storage area is provided to support the efficient servicing of refuse as well as the efficient disposal of refuse via the goods lift and back of house corridors, limiting the movement of refuse through publicly accessible areas.

The design of the refuse storage area provides direct access to all bins required for Lot 12 as outlined in, no rotation of bins is required between collections.

Access to the refuse room will be limited to building staff and the collecting contractor.

Figure 3.1 illustrates the configuration of the refuse storage area in context to the loading bay.

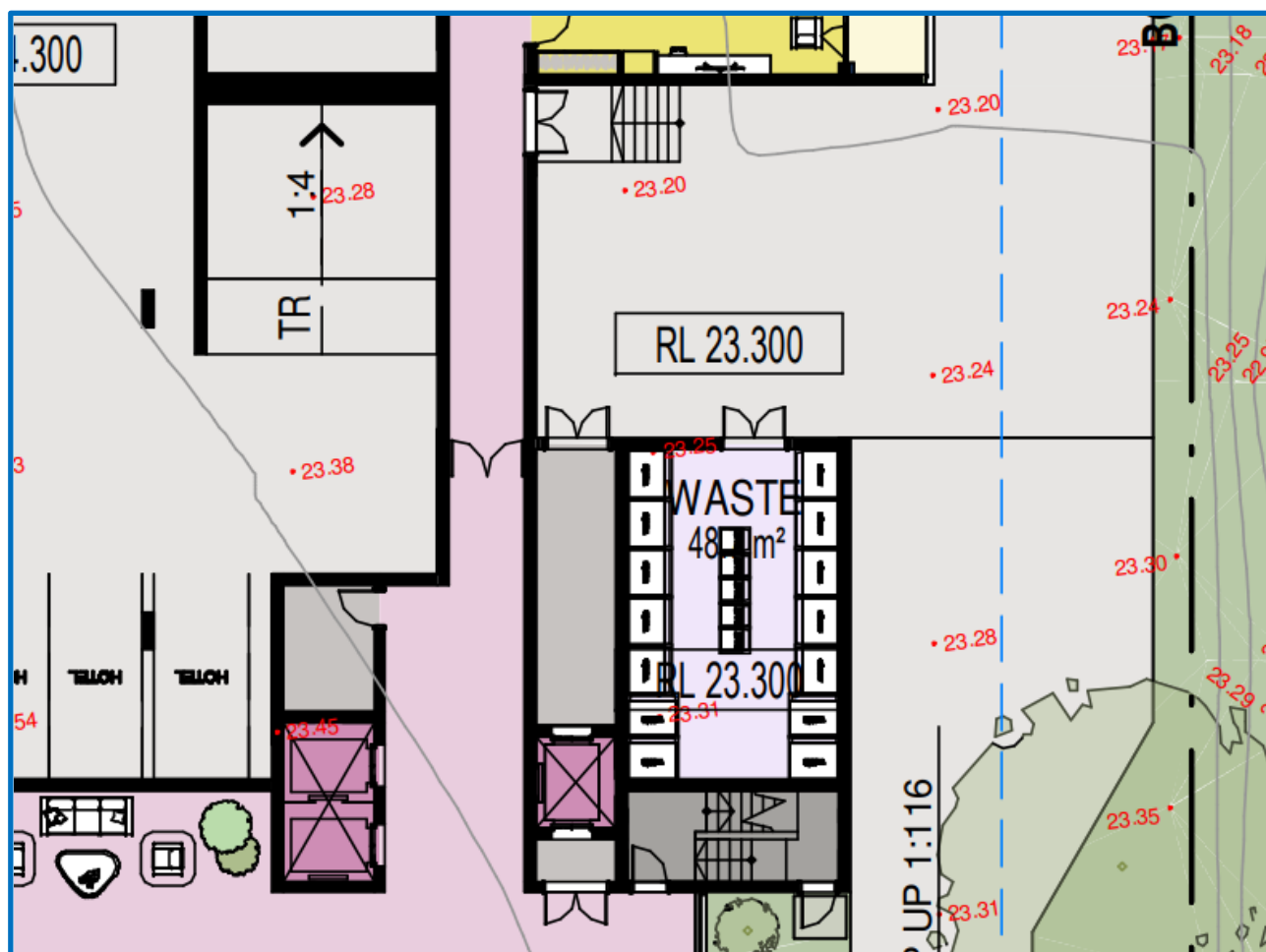


Figure 3.1: Refuse Storage Area Lot 12

Source: Morson Group, Project: Castlereagh Tourism Development, Drawing: Ground Floor Plan, Drawing Number: DA07, Issue: A

3.4.2. Lot 14

A single refuse storage area is proposed for Lot 14. Refuse generated from each tenancy / use will be consolidated into shared bins and equipment.

The refuse room is provided on ground level and centrally located between the ground level tenancies and adjoining the good lift to support efficient disposal from all tenancies.

Access to the refuse room will be limited to building staff and the collecting contractor.

The refuse room is sufficiently sized to accommodate the total number of bins required for Lot 14 as outlined in Table 3.9. While rotation of bins is required to access all bins, as noted in Section 3.1.2, the refuse generation calculations are considered conservative and less bins are likely to be required.

As the plans develop through subsequent applications and as fitout requirements are ascertained, Colliers recommend that consideration is given to the implementation of compaction equipment to reduce the overall volume of refuse. This in turn reduces bin numbers and or collection frequency. Alternatively, the implementation of compaction may be instigated to support a reduction in refuse storage area size in subsequent applications.

Figure 3.2 illustrates the configuration of the refuse storage area in context of the access point to adjoining tenancies.

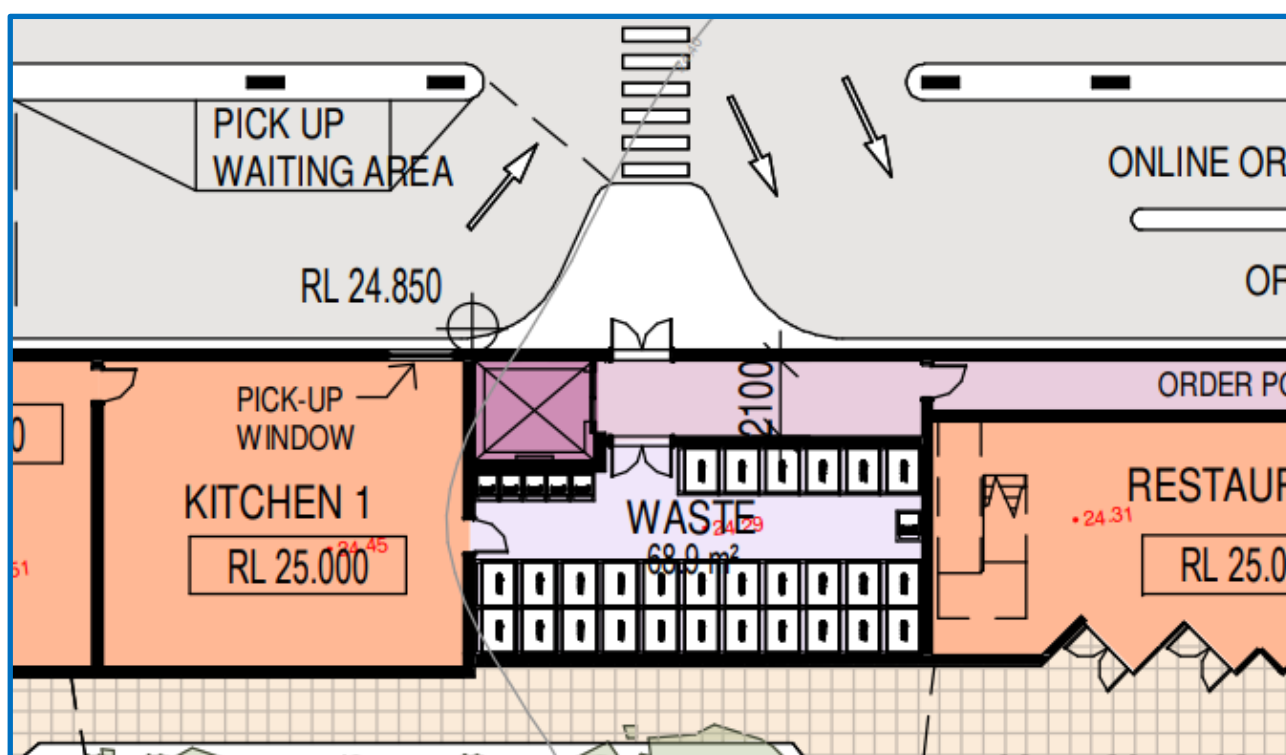


Figure 3.2: Refuse Storage Area Lot 14

Source: Morson Group, Project: Castlereagh Tourism Development, Drawing: Ground Floor Plan, Drawing Number: DA07, Issue: A

3.4.3. Lot 16

A single refuse storage area is provided for Lot 16 on ground level and directly adjoining the RCV loading bay.

As per Lots 12 and 14, the refuse storage area is conveniently located near the goods lift to support convenient disposal for all refuse generated above ground level.

Access to the refuse room will be limited to tenancy staff and the collecting contractor.

The refuse room is sufficiently sized to accommodate the total number of bins required for Lot 16 as outlined in Table 3.9. While rotation of bins is required to access all bins, as noted in Section 3.1.3, the refuse generation calculations are considered conservative and less bins are likely to be required.

As per Lot 14, as the plans develop through subsequent applications and as fitout requirements are ascertained, Colliers recommend that consideration is given to the implementation of compaction equipment to reduce the overall volume of refuse. This in turn reduces bin numbers and or collection frequency. Alternatively, the implementation of compaction may be instigated to support a reduction in refuse storage area size in subsequent applications.

Figure 3.3 illustrates the configuration of the refuse storage area in context to the loading bay.

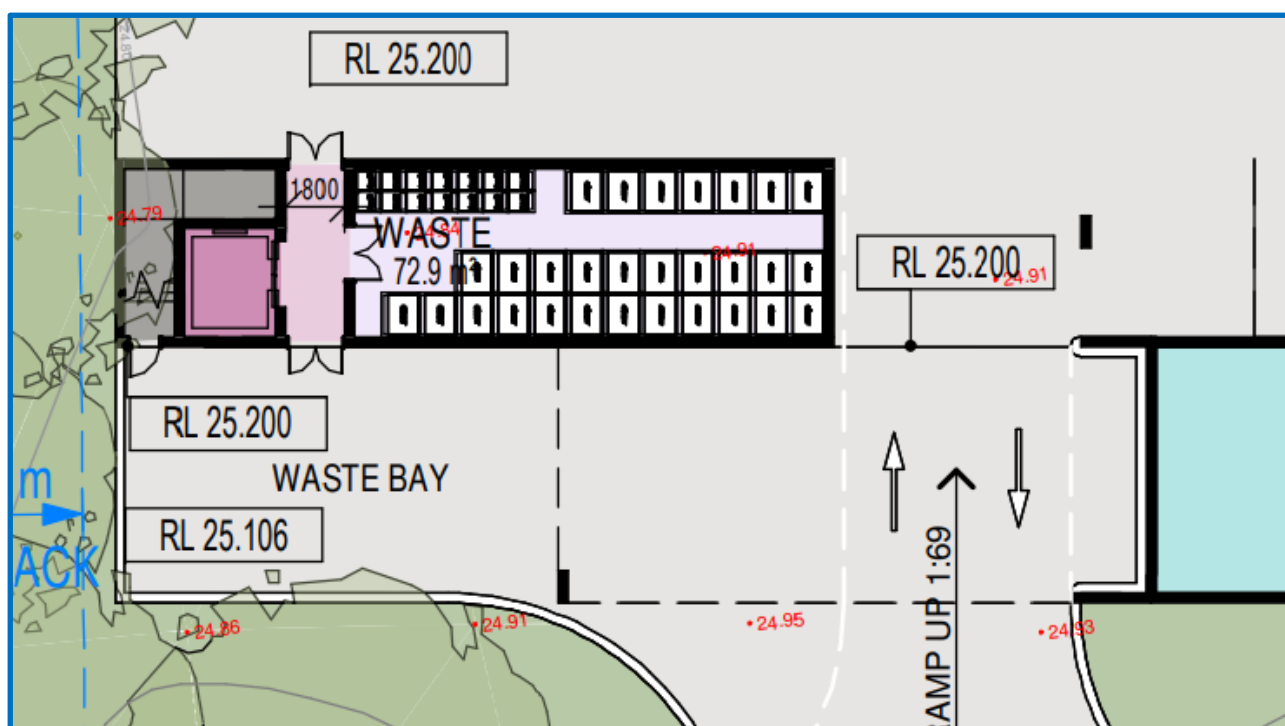


Figure 3.3: Refuse Storage Area Lot 16

Source: Morson Group, Project: Castlereagh Tourism Development, Drawing: Ground Floor Plan, Drawing Number: DA07, Issue: A

3.4.4. Refuse Storage Area Design Requirements

Table 3.14 outlines the refuse storage area design criteria to be addressed in the detailed development of the refuse storage areas provided for each Lot in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

Table 3.14: Refuse Storage Area Design Criteria

Positioning Considerations
A refuse servicing storage room is provided and positioned in immediate proximity of the designated loading point.
Is in a purpose-built storage area which is vermin proofed and used solely for the storage of refuse leaving the site or specifically designed for service vehicle use only.
Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage).
Is positioned away from entrances to shops or residential premises
Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
Visual Amenity Considerations
Is enclosed on all sides except for the access points to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site.
Is designed to minimise their visual impact on the surrounding areas.
Functional Design Considerations
Is of sufficient size to accommodate the bins with sufficient clearance around the combined bin area
Doors / shutters wide enough to allow for the easy removal of the largest container to be stored.
Permits unobstructed access for removal of the containers to the service point.
The height of the bin storage area allows for waste bins to be opened and closed.
Does not have any steps or lips.
Adequate artificial lighting.
Be fire rated and ventilated in accordance with the National Construction Code – Building Code of Australia.
Bin Washing and Room Cleaning Considerations
A hose cock provided inside the room for cleaning bins and the enclosures.
The walls, ceilings, floors and equipment are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning.
Coved at the intersection with the walls with coving integral to the floor.
The floors to be graded to fall to a drainage point.
Drainage points connected to sewer in accordance with trade waste requirements.
Roofed and designed to prevent entry by rainwater.

3.5. Refuse Transfer

3.5.1. Refuse Disposal Transfer

The refuse transfer methodology for the disposal of refuse is consistent across all Lots. Either designated tenancy staff or tenancy cleaners will transfer all refuse generated from each of the Lot to the respective refuse room directly. The goods lifts will be utilised for the vertical transfer of all refuse and, where available back of house corridors utilised for the transfer of refuse at grade. It is anticipated refuse or cleaners' trolleys will be used for the transfer of bulk quantities of refuse at a time and to reduce the manual handling required in the transfer of refuse.

3.5.2. Refuse Servicing Transfer

The refuse servicing transfer methodology for Lot 12 and Lot 16 are consistent; the collecting contractor will collect all bins directly from the respective refuse storage areas in either loading dock directly adjoining the RCV standing position, manoeuvre to the RCV lifting mechanism and return bins to their respective rooms after service.

The refuse servicing transfer methodology for Lot 14 requires bins to be transferred across the driveway aisle to the loading bay. The transfer path includes the interface point of the drive-thru lanes for both restaurants; the drive-thru exit of Restaurant 1 and the drive-thru entry of Restaurant 2. A landing is provided externally to the building before the aisle crossing to improve contractor visibility. Further, a pedestrian crossing is also provided to enable contractors to safely cross the aisle. The collecting contractor will collect all bins directly from the refuse storage areas, manoeuvre across the aisle via the designated pathway to the RCV lifting mechanism and return bins to the refuse rooms after service

Table 3.15 outlines the refuse transfer path design features for both disposal and servicing.

Table 3.15: Refuse Transfer Path Design Criteria

The bins to be transferred via hard stand pathway.
Allows bins to be easily manoeuvred.
Does not impede traffic flow.
Does not extend through any habitable parts of a building or food premise
Does not have any lips, stairs or steps for bins to be manoeuvred easily.
Doors, including lift doors wide enough to allow for the easy removal of the largest container to be stored.

3.6. RCV Arrangements and Bin Servicing Areas

All refuse generated by each Lot will be collected by Rear Loading RCV. A private collections contractor will be appointed and will be responsible for the collection of all refuse. Separate contractors may be appointed by each Lot however, a central refuse collection contract may be considered to reduce the overall number of RCV attendances to precinct.

The servicing of each Lot occurs in a similar methodology with the following information applicable to each Lot.

The servicing of each Lot, both refuse and general delivery vehicles will be limited to service vehicles with a height of 3.5m or less. Colliers note that many private refuse collections contractors operate fleets including rear loading RCV's less than 3.5m in the broader geographic area and the head height restriction is not anticipated to impart significant restrictions on possible contractors. From a refuse collection perspective, Colliers consider the 3.6m overhead clearance provided to be sufficient for the servicing of this development.

Servicing occurs within shared loading bays and the use of each loading bay including the collection of refuse will be managed by the operator of each Lot. Loading dock booking software may be employed to assist in the management of loading bays and to reduce instances of conflict. It is expected that refuse collections will be scheduled to occur outside of peak operational hours such as peak meal times (typical lunch and dinner time) for Lot 14, to reduce the volume of traffic at the drive-thru interface point.

As touched on in Section 2.3.3, construction contractors must consider and assess the site establishment area of Lot 14 and 16 to ensure the site does not encroach on or impede the operational continuity of established stages. For example, the construction zone of Lot 14 must not impact the driveway to Lot 12. Each Lot has been designed to be accessed wholly independently of the other Lots.

All RCV's will enter each Lot via the respective driveway crossover provided for each Lot using the on Old Castlereagh Road in a forward gear. RCV's will navigate to, and perform a single reverse manoeuvre into the respective shared loading bay. Once the collections service is complete the RCV will exit the site in a forward gear onto Old Castlereagh Road.

Figure 3.4 and Figure 3.6 over the following pages show the swept paths for a 9.8m rear loading RCV for Lot 12, and 16 respectively. This RCV size is indicative of the largest RCV expected to require access to the site. Figure 3.5 swept paths for an 8.8m MRV and representative of a rear loading RCV up to 8.8m in length for Lot 14.

Further details on vehicle access, holding and on-site manoeuvring can be found in the traffic report, with copies of swept paths provided in the Appendices.

Table 3.16 overleaf outlines the design criteria address in the design of the bin servicing area / loading bay for each Lot.

Table 3.16: Refuse Servicing Area Design Criteria

Has sufficient access and clearance for the waste and recycling collection vehicles up to 3.5m high to service the bins.
Allows bins to be serviced safely while minimising the impediment to vehicle movements during servicing.
Is clearly separated from car parking bays, footpaths and pedestrian access.
Is devoid of stairs, lips or ramps and allows bins to be manoeuvred easily.
Does not block the entry and exit to the property.
Is not adjacent to a kitchen or eating area for public use.
Is over 5m from any door, window or fresh air intake within the development or any adjoining site.
Is located to minimise the view of bins from neighbouring properties or passing vehicles and pedestrian traffic external to the site.
Is positioned away from entrances to shops or residential premises.

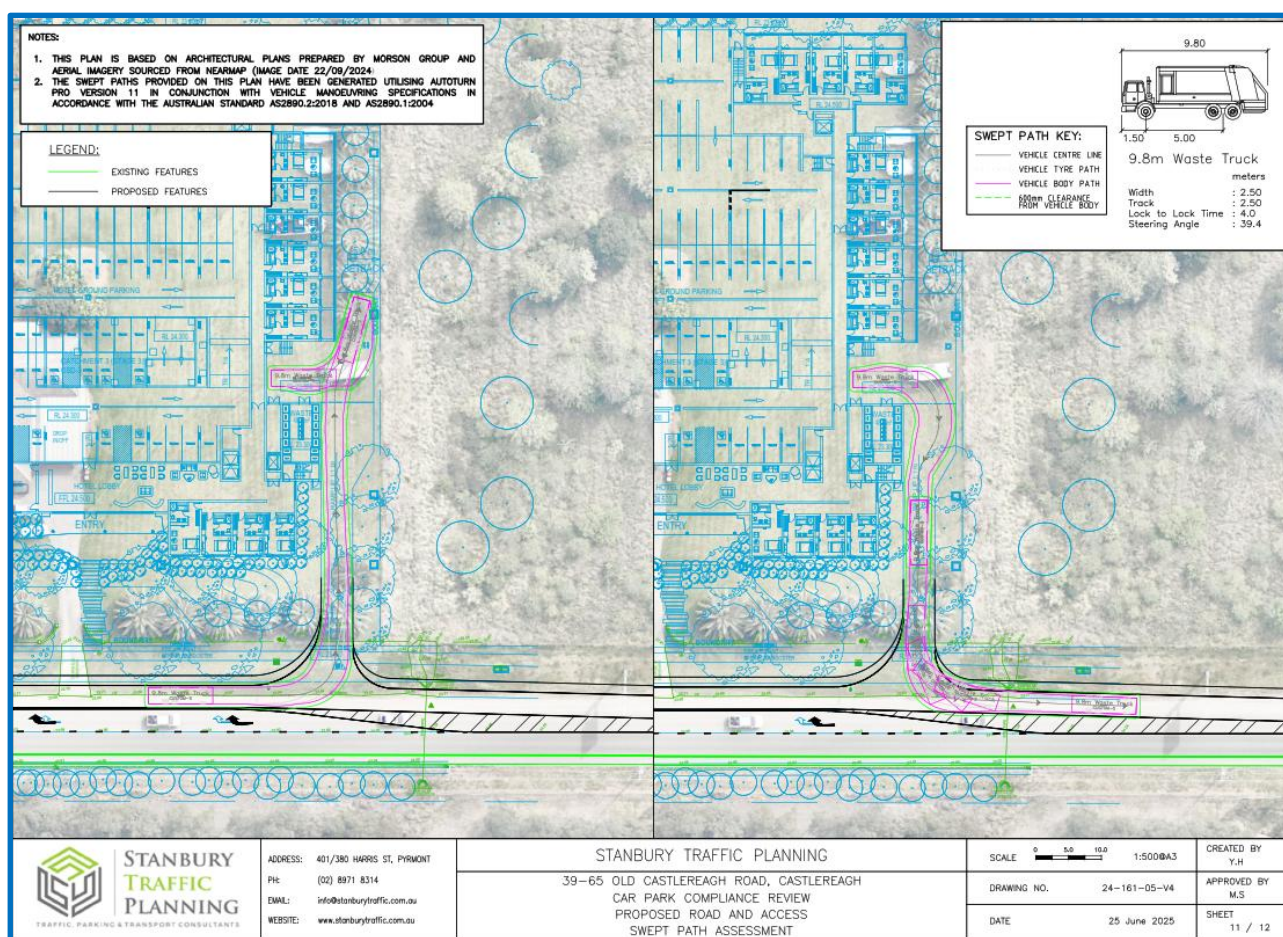


Figure 3.4: 9.8m RCV Swept Paths Lot 12

Source: Stanbury Traffic Planning, Project: 39-65 Old Castlereagh Road, Castlereagh, Car Park Compliance Review, Proposed Road and Access Swept Path Assessment, Drawing number: 24-161-05-V4, Sheet 11/12

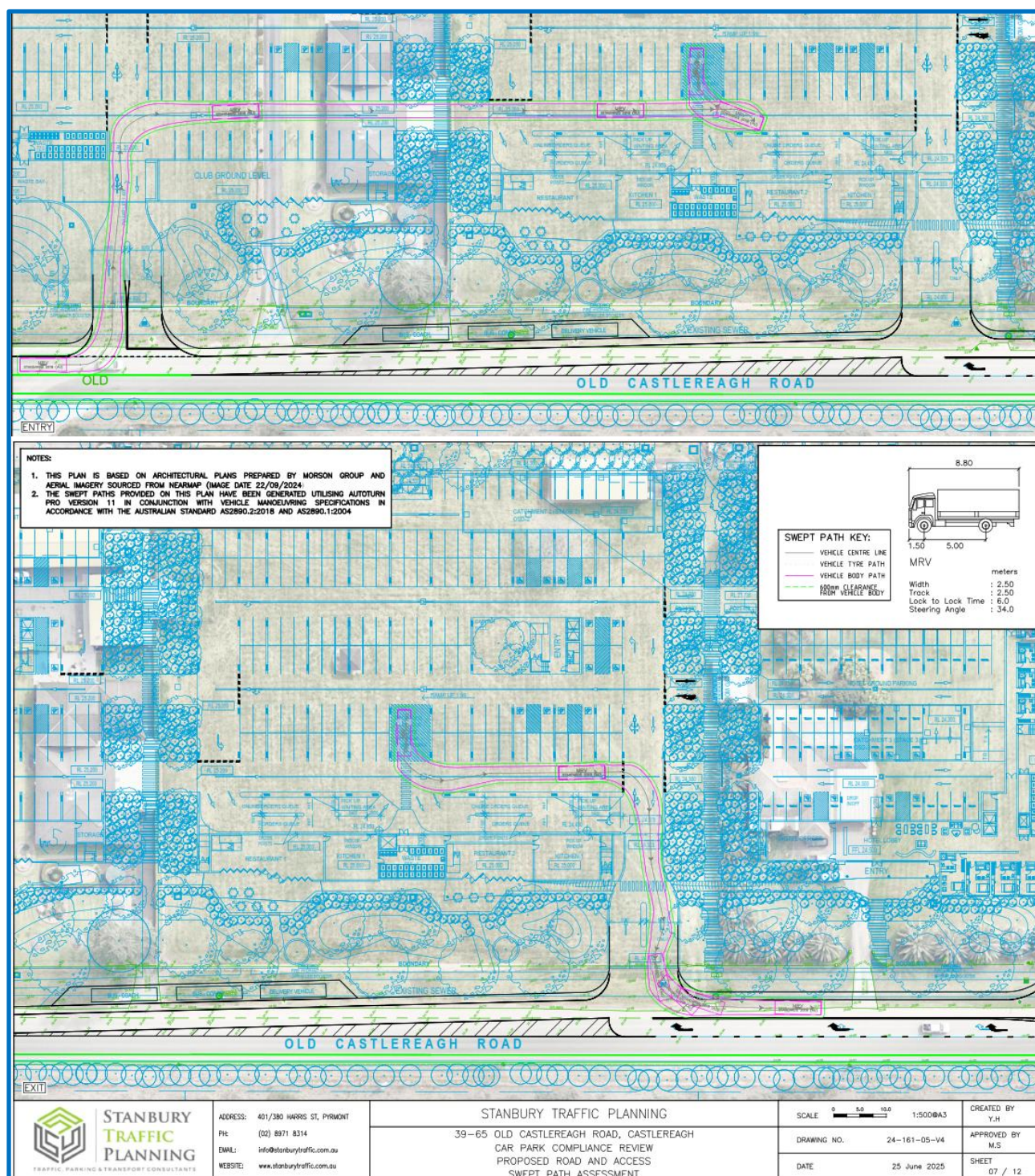


Figure 3.5: 8.8m RCV Swept Paths Ingress and Egress Excerpts Lot 14

Source: Stanbury Traffic Planning, Project: 39-65 Old Castlereagh Road, Castlereagh, Car Park Compliance Review, Proposed Road and Access Swept Path Assessment, Drawing number: 24-161-03-V5, Sheet 06/12 and 07/12

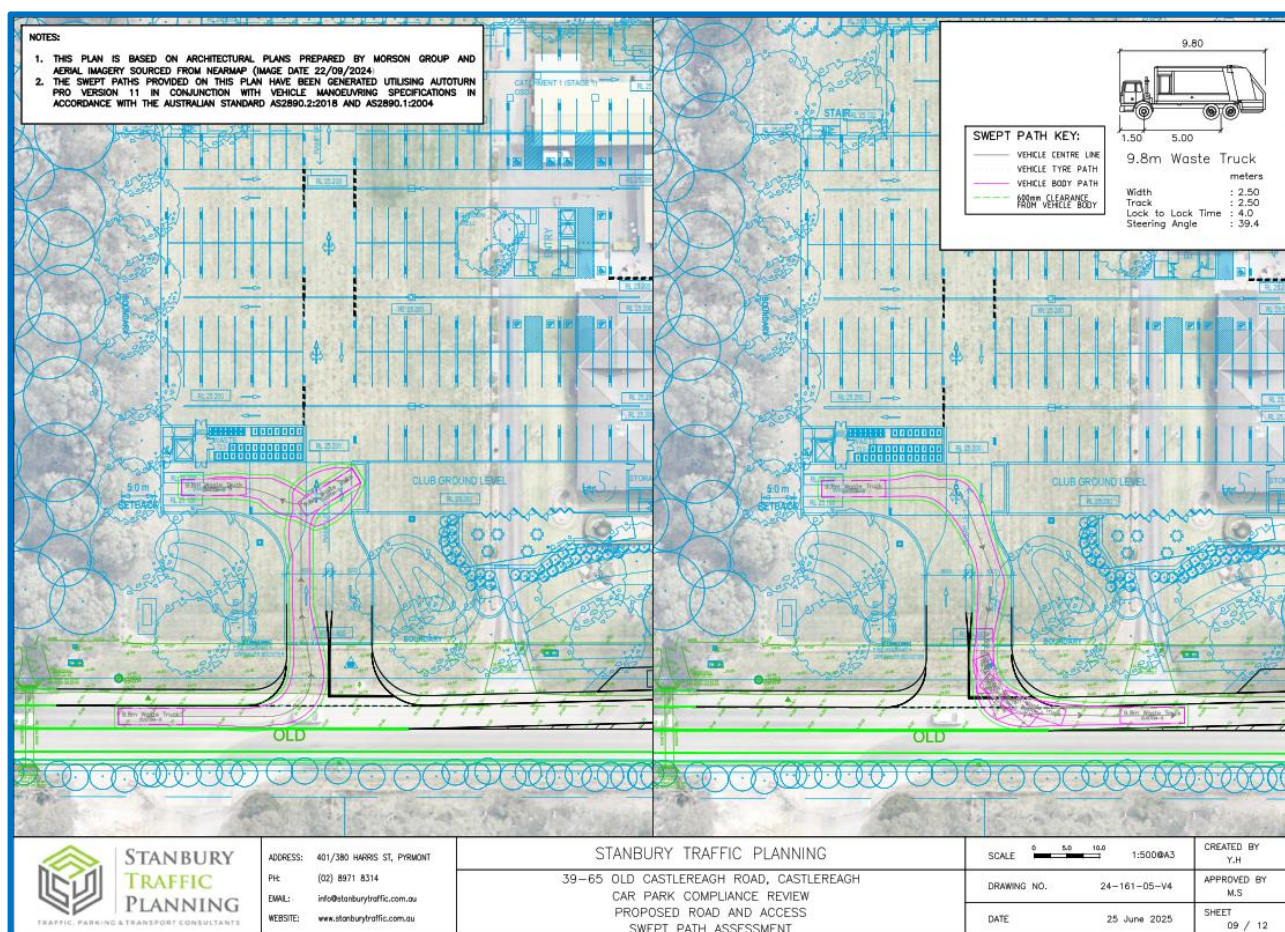


Figure 3.6: 9.8m RCV Swept Paths Lot 16

Source: Stanbury Traffic Planning, Project: 39-65 Old Castlereagh Road, Castlereagh, Car Park Compliance Review, Proposed Road and Access Swept Path Assessment, Drawing number: 24-161-05-V4, Sheet 09/12

4. Recommended Operational Requirements

This section does not contain information relevant for regulatory assessment.

This section relates to the outcomes and waste management practices of the development during the operational phase as recommended by Colliers. It is intended for use as a live document by the end user of the development to assist with the ongoing management of the development.

4.1. Future Considerations

As noted throughout this WMP, this report has been developed to a concept level for Lots 14 and 16 and detailed concept for Lot 12. The further development of plans through post consent stages, subsequent applications and as tenants sign-on will enable the anticipated refuse volumes and anticipated refuse composition noted in Section 3.1 to be developed and refined.

The refinement of the anticipated refuse generated from each tenancy permits the opportunity for the design of each refuse storage area to be amended to suit the specific needs of the tenant. This may include the implementation of volume reduction equipment including but not limited to food waste processing equipment, dry refuse baling, including cardboard or the compaction of putrescible wastes.

As plans develop, Colliers recommend that designers prioritise designing out waste, not only through considered procurement during fitout stages, but considering opportunities to maintain items in their highest value form. This may include the inclusion of dedicated maintenance rooms for the repair or recycling of bulk items typical of hotels, indoor rec facilities, restaurants and clubs such as furniture and equipment.

Where waste cannot be designed out, it is imperative that equal preference is given to the disposal of all refuse streams to be recovered by the site; if it is easier to dispose of one stream such as general waste, recoverable materials will be lost to the most convenient and accessible stream.

Colliers recommend consideration is given to the installation of refuse weighing scales, such as platform scales, in each refuse room to enable the tracking of refuse weights and ensure the accurate on-charging of waste disposal costs based on actual generation for Lot 14. Where scales are installed, it will be a requirement for building staff / cleaners to weigh all refuse and record the generator / tenancy of origin prior to final disposal. Additionally, it is recommended that leasing contracts include clauses that encourage and support tenant recycling performance.

4.2. Ongoing Management

The tables below relate to a cycle of ongoing implementation, operation, review and amendment of the refuse strategy. These tables are intended to serve as a live document to be completed and updated during the operational phase of the development and therefore intentionally left blank.

Responsibilities will be assigned for all on-going refuse management related activities during the operation of the development. Colliers recommend the appointment of dedicated personnel to champion refuse management and sustainability. The following lists (Table 4.1 to Table 4.3) are designed to help manage and assign responsibilities and monitor the refuse operations. On-going management of the refuse strategy will maintain efficient services, a safe environment and improve on sustainability outcomes.

4.2.1. Implementation Phase

Refuse management tasks during the implementation of the refuse strategy are required prior to and during the early stages of building occupancy. An opportunity to revisit these tasks is provided at set intervals with the review of the refuse strategy.

Table 4.1: Implementation Checklist

Task	Assigned	Remarks
Certify the as-built form of all refuse related areas. This task does not refer to building certification but is typically undertaken by a specialist waste consultant prior to building certification. This provides an opportunity to identify variances in building form versus design and recommend alternate or mitigating refuse management strategies. This task may also be required during significant building refits or renovation.		
Appoint personnel to oversee or undertake refuse management tasks. A building or facilities manager is typically appointed and undertakes most operational tasks, engaging contractors for specialist tasks.		
Conduct internal safety review. An internal safety review is required to be undertaken to identify potential hazards in the implementation of the refuse strategy and risk mitigation opportunities. This includes the use of any refuse management equipment installed, as well as refuse transfer paths		
Development of policy and procedures Must be undertaken after safety review and abide by all relevant occupational health and safety legislation, regulations and guidelines to ensure site safety for visitors, staff and contractors. Also includes assessment of any manual handling risks and preparation of a manual handling control plan for waste and bin transfers.		

Task	Assigned	Remarks
Engage refuse collection contractors. A private collections contractor must conduct a site visit for the purposes of risk assessing the site prior to conducting services. Contractors must ensure that a full risk assessment of equipment, surfaces and related gradients is complete and procedural documentation is provided to the appropriate personnel. RCV manoeuvrability testing and the establishment of service frequency and timing is also undertaken at this time.		
Install signage in all refuse disposal and storage points. Signage is required to be installed to educate building occupants on location of disposal and refuse storage points. Additionally, to identify the accepted items disposed of in each refuse. The installed signage should be colour coded in accordance with <i>AS 4123.7 – 2006 Mobile waste containers</i> . Examples of signage are provided in the appendices.		
Leasing / Building Management Agreements All building management and leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment.		
Education and Training. Provision of equipment manuals, induction, training, health and safety procedures, risk assessments and personal protective equipment (PPE) to all staff / contractors associated with all waste management activities in order to control hazards. The step is repeated through the operational phase of the development as required due to changes in users, equipment or personnel.		
Consider fitout and move-in refuse. Higher volumes of waste are generated during the initial tenant move-in or final tenancy fitout. This typically includes large volumes of cardboard. Additional bins or collections may be required. This also applies to tenancy turnover events and refits.		
Baseline Refuse Auditing A baseline audit is recommended once the development reaches 80% occupancy undertaken by a specialist waste consultant is recommended to identify refuse volumes and stream composition. This information is then used to establish potential recoverable material percentage based on initial waste practices and set recycling rate targets.		
Establish Baseline Targets The baseline audit results should be used to establish baseline landfill reduction and recycling rate targets. Baseline targets should be achievable with a view to continual improvement to enable the celebration of success and promote buy-in by building occupants.		

4.2.2. Occupation / Operational Phase

Refuse management tasks during the occupation or operational phase of the development relate to the day to day and business as usual operational tasks that must be undertaken to execute the refuse strategy.

Table 4.2: Occupation / Operation Checklist

Task	Assigned	Remarks
Facilitate disposal from communal areas, public realm and tenancies. Appointed facilities staff are required to transfer refuse generated in communal areas and the public realm to the refuse storage area for final disposal, this includes litter removal. Best practice operations include having dedicated cleaning staff assigned to handle all waste generated across the precinct, rather than tenancy staff. This results in maximum recovery of available streams.		
Manage rotations of bins to ensure convenient access. Check bin fill levels and rotate / swap bins as required. Sufficient capacity must be provided for the disposal of all streams at all times including reduced personnel on site (such as weekends or public holidays). Where equal access to a refuse stream is not maintained, other streams may be contaminated leading lost resources.		
General cleaning. Regular cleaning and maintenance of all refuse management facilities is important to maintain a safe and hygienic environment for visitors, staff and contractors. General cleaning is required for all refuse holding and transfer areas including • Refuse bins, rooms and storage areas • Refuse transfer areas including lifts and staircases • Any other refuse management equipment		
Perform spot checks on bin contents and refuse streams. Appointed staff regularly check for compliance and stream contamination. Early intervention prevents the development of poor practice and lost resources. Feedback and education is provided to the relevant parties (see below).		
Ongoing education and communication. On-going education is important to ensure people continue to use the facilities as originally intended and to avoid ongoing contamination of recoverable refuse streams. Appointed personnel should be actively involved in education of occupants and encouraging participation in recycling activities. Widespread communication of the achievements of the refuse strategy and areas for improvement encourage participant buy-in.		

4.2.3. Review and Amendment Phase

The review and amendment refuse management tasks relate to tasks undertaken on a routine (e.g. quarterly, bi-annually or annually) or ad hoc basis. At the completion of the review and amendment phase, the cycle restarts with the implementation of the amended refuse strategy.

Table 4.3: Review and Amendment Checklist

Task	Assigned	Remarks
Coordination of specialised cleaning contractors as required. Typical specialised cleaning services may include cleaning internal areas of compaction equipment (if selected); this reduces risk of blockage, odour and risk of fire.		
Maintenance and servicing of refuse management equipment as per schedule. Frequency depends on equipment, building operation and manufacturer specification. Routine maintenance reduces downtime and detrimental impact of unscheduled equipment breakdown.		
Coordination of specialised equipment contractors as required. May extend to ad hoc services requiring specialist equipment such as bulky / hard waste removal.		
Internal safety review. Routine safety reviews are required to identify changes to the site, work practices or legislation that may impact existing policies and procedures. Reviews should include visual inspection of equipment and user PPE. Any policy or procedure updates arising from a safety review must be immediately communicated.		
Audit operational refuse volumes and composition. As similarly undertaken at the beginning of occupancy a review by a specialist waste consultant is recommended to identify refuse volumes and stream composition. This information is then used to establish potential recoverable material percentage and identify opportunities for improvement in refuse strategy. Alternatively, an internal audit may be undertaken by visual inspection during on-site waste management handling activities. For example, cleaners may observe contents of waste receptacles when decanting caddies in larger bins and recording results, this method is less accurate than a comprehensive audit, however, give immediate indicative results and may be undertaken on an ongoing basis.		
Review bin quantities and refuse management equipment. Reviewing bin quantities and equipment is required ensure operational sustainability of refuse volumes and equipment remains fit for purpose. Consideration should be given where alternate equipment may provide improved outcomes. This review may form part of the external audit process (above) as recommendations made.		

Task	Assigned	Remarks
Review service frequency and methodology on 6 monthly intervals with collecting contractor. The service frequency and service methodology should be reviewed once development is fully occupied and on rolling 6 monthly basis to ensure the optimum cost efficiency in services provided and explore options for additional services. Any potential changes to the bin numbers or bin sizes should be made in liaison with the appointed contractor to confirm cost or contract implications.		
Review of recycling rate target to target continual improvement. Once benchmarked performance has been assessed against the existing targeted recycling rate a new target can be established that strives for continual improvement. Any changes in targeted recycling rates and the achievements of the refuse strategy should be widely communicated to all occupants.		
Update and amend OWMP based on review outcomes. On completion of the refuse strategy review the OWMP should be updated to reflect refuse strategy amendments and to enable implantation of refuse strategy.		

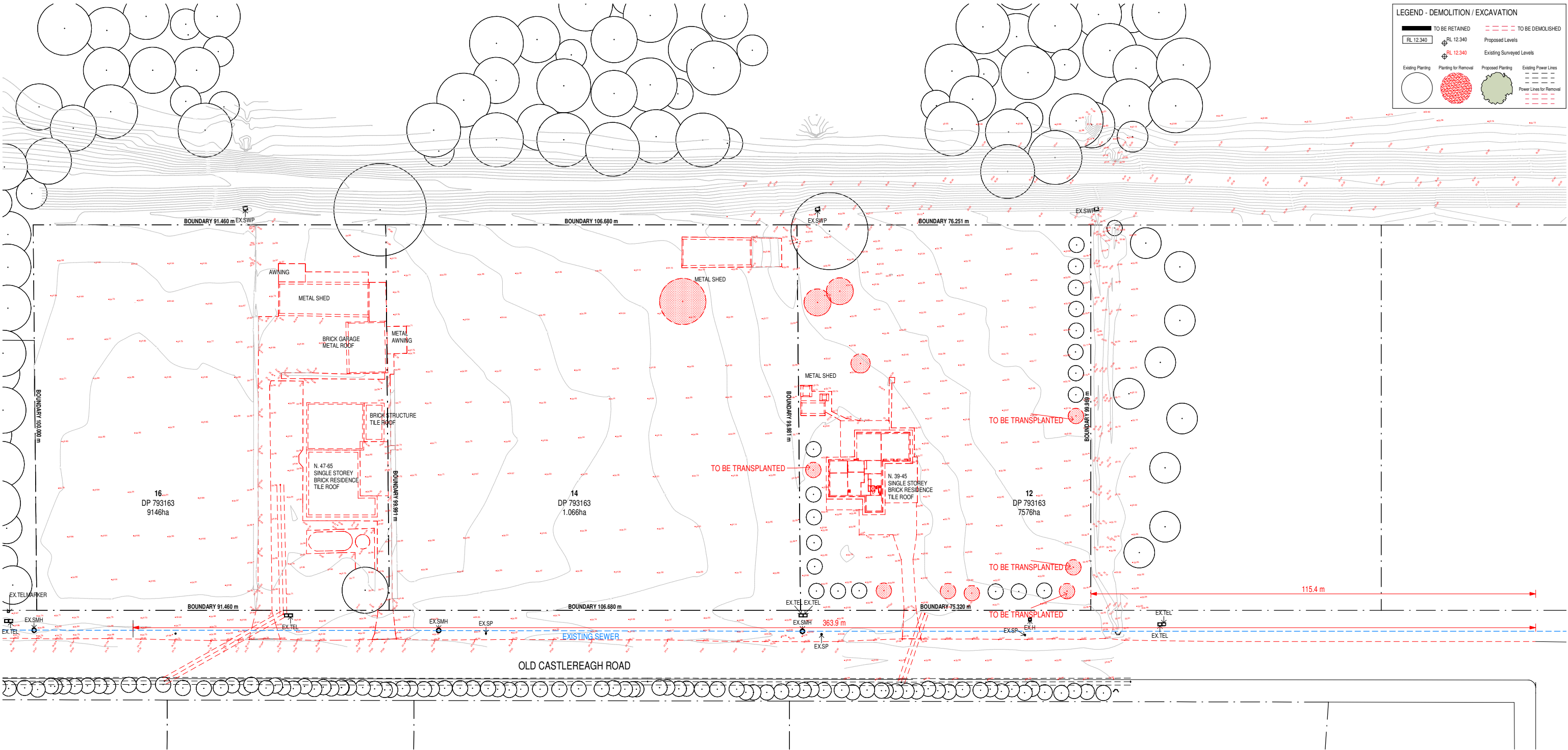
Appendix A WMP Compliance Checklist

Industrial, Commercial and Mixed-use Waste Management guidelines	
Control	Comments / Compliance
2. Service Requirements	
2.1 Development Classification	
The following controls relate to developments outlined within Part D – Land Use Controls of the Penrith Development Control Plan 2014: • D3 Commercial and Retail Development • D4 Industrial Developments • D5 Other Land Uses	The subject site falls within the Penrith Lakes masterplan and is subject to the Penrith Lakes DCP. The site is zoned as tourism.
2.2 On-Site Waste Collection	
Waste collection vehicles proposed to service commercial and industrial developments are to be designed in accordance with the vehicle specifications outlined in section 3.5	Private collection contractor proposed. Refer to Section 3.6 for details.
2.2.1 On-site Collection The vehicle must be able to safely and efficiently access the site and the nominated collection point to perform on-site waste collection. There must be sufficient manoeuvring area on-site to allow the collection vehicle to enter and exit the site in a forward direction and service the development efficiently with little or no need to reverse	Complies – Forward-in, forward-out manoeuvring provided for each Lot. Minimal reversing required.
2.2.2 Architectural Plans Scaled architectural plans are required to support the development application which demonstrate the site's entry point, vehicle's route of travel and manoeuvring comply with a standard waste collection vehicle (section 3.5).	Complies – Swept path analysis has been provided for each Lot and is based on architectural plans which depict the full path of travel for RCV's.
2.2.3 Swept Path Models Swept path models to be provided illustrating how a standard waste collection vehicle (section 3.5) will enter, service and exit the site. A 0.5m unobstructed clearance is required from all obstructions for the vehicle's ingress and egress manoeuvres. The model to provide on-street parking on both sides of the road adjacent to the development to demonstrate unobstructed access during a 'business as usual' configuration.	Complies – As above swept path analysis provided. Refer to traffic engineering documentation.
2.2.4 Service Clearances For rear loaded vehicles an additional 2m unobstructed loading zone is required behind the vehicle for the loading of 660L and 1,100L bins. Additionally, a 0.5m side clearance is required on either side of the vehicle for driver movements and accessibility.	Complies – Adequate clearances are available for the servicing of refuse. Note, the RCV has the capacity to stand the RCV anyway within the loading bay.
2.2.5 Route of Travel for Collection Vehicle The route of travel of the collection vehicle to the designated loading bay is to satisfy the dimensions of standard waste collection vehicle. To support unobstructed access adequate driveways and ramps of sufficient strength are required to support waste collection vehicle movements. A structural engineer's report is required to be submitted accompanying the Waste Management Plan. The report to confirm all infrastructure used for vehicle ingress and egress movements can support the vehicle's 'gross weight' outlined within section 3.5.	Private collection contractor proposed. The site has been designed to accommodate an RCV as detailed in Section 3.6.
2.2.6 Plan of Operations All development applications to be submitted with accompanying 'Plan of Operations', outlining proposed; Bin Infrastructure Sizes, Collection Frequency, Waste Collection Vehicle Dimensions, Hours of Collection and Access to Waste Collection Room.	Complies – This WMP provides full details, at a concept level, for the operational phase of the development.

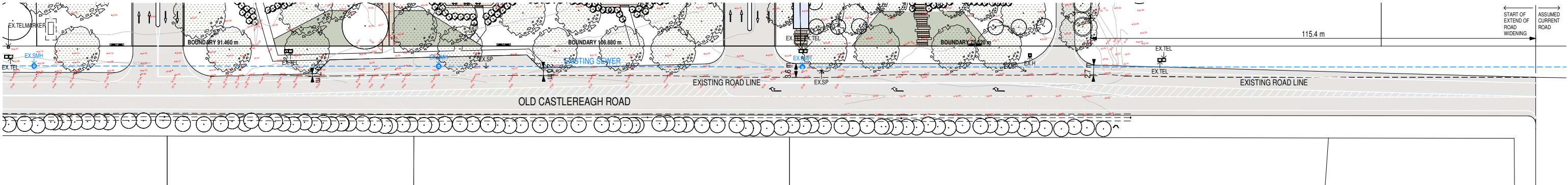
Control	Comments / Compliance
2. Service Requirements – Continued	
2.3 Site Restricted Developments	
There may be site characteristics that restrict the opportunity for the developments design to accommodate a standard waste collection vehicle entering and exiting the site in a forward direction. These site characteristics may include the width of the development site and its topography. There may be circumstances where the applicant is able to demonstrate an improved design outcome is achieved responsive to urban design, planning and waste collection operational specifications on-site by not accommodating the vehicle entering and exiting the site in a forward manner.	N/A – Forward-in, forward-out manoeuvring provided. Alternate solution not proposed.
3. Waste Collection Infrastructure	
3.1 Bin Infrastructure	
The bin dimensions provided reflect typical bins used to service waste streams within commercial and industrial developments: 3.1.1 Rear Lift Bins	Complies – Rear loading RCV proposed for the collection of 240L and 1,100L bins.
3.1.2 Front Lift Bins	N/A – Rear loading RCV proposed
3.2 Lifting the Bar Provisions	
Alternative and innovative waste collection solutions and technologies can be proposed for new developments. These solutions will need to address and exceed the objectives outlined in Penrith's C5 Development Control Plan. A meeting is advised with Council's Waste and Resource Recovery Department to explore the innovative solutions proposed prior to pre-lodgement and formal submission of the development application.	N/A – This WMP has been developed at a concept level and based on standard bin collection. Alternate solutions may be explored in subsequent applications.
3.3 Model Waste Generation Rates	
3.3.1 Food Premises	N/A – Alternate refuse generation rates applied. Refer to Section 3.1 for details.
3.3.2 Specialty Food Premises	N/A – Uses not included.
3.3.3 Accommodation	N/A – Alternate refuse generation rates applied. Refer to Section 3.1 for details.
3.3.4 Non-Food Premises	N/A – Alternate refuse generation rates applied. Refer to Section 3.1 for details.
3.3.5 Alternate Use	N/A – Alternate refuse generation rates applied. Refer to Section 3.1 for details.

Control	Comments / Compliance
3.4 On-Site Waste Collection Infrastructure	
3.4.1 Waste Collection Room All developments are required to provide a waste collection room integrated wholly within the developments built form to permit a safe and efficient waste collection service. The room will need to incorporate the following into its design: • The room is to be large enough to accommodate the entire fleet of bins plus 0.2m between bins to allow adequate manoeuvrability (refer to section 3.1 & 3.3). • 1.8m unobstructed clearance zone between the stored bins and the entrance to permit access and manoeuvrability. • The room to provide suitable dual door access for the service of bins with a minimum width of 1.8m and accessed by a minimum 1.8m unobstructed access corridor. • The room is to be located within close proximity to the on-site loading bay. • The room is to be fully enclosed, walled and not permit through access to other on-site waste infrastructure. • The floor is to be waterproofed, non-slip and sealed in accordance with the Building Code of Australia to permit the use of wash facilities. • The floor is to be graded to a central drainage point connected to the sewer, enabling all waste to be contained and safely disposed of. • The room is to be partitioned and enclosed with a minimum 2.7m unobstructed internal room height in accordance with the Building Code of Australia. • The room is to be provided with an adequate supply of water through a centralised mixing valve and hose cock. • The room to incorporate adequate lighting and natural/mechanical ventilation in accordance with the Building Code of Australia.	Complies – Refuse rooms provided for each Lot. The design of each refuse room has been undertaken at a concept level only. The further refinement of each room will occur in post consent and subsequent applications. Refer to Section 3.4.4 for the design criteria that will be addressed.
3.5 Waste Collection Vehicles	
3.5.1 Rear Loaded Waste Collection Vehicles	Private contractor rear loading RCV proposed.
3.5.2 Front Loaded Waste Collection Vehicles	N/A – Rear loading RCV proposed. Refer to Section 3.6 for details.

Appendix B Site Plans and Supporting Drawings



SITE PLAN - DEMOLITION
1:500

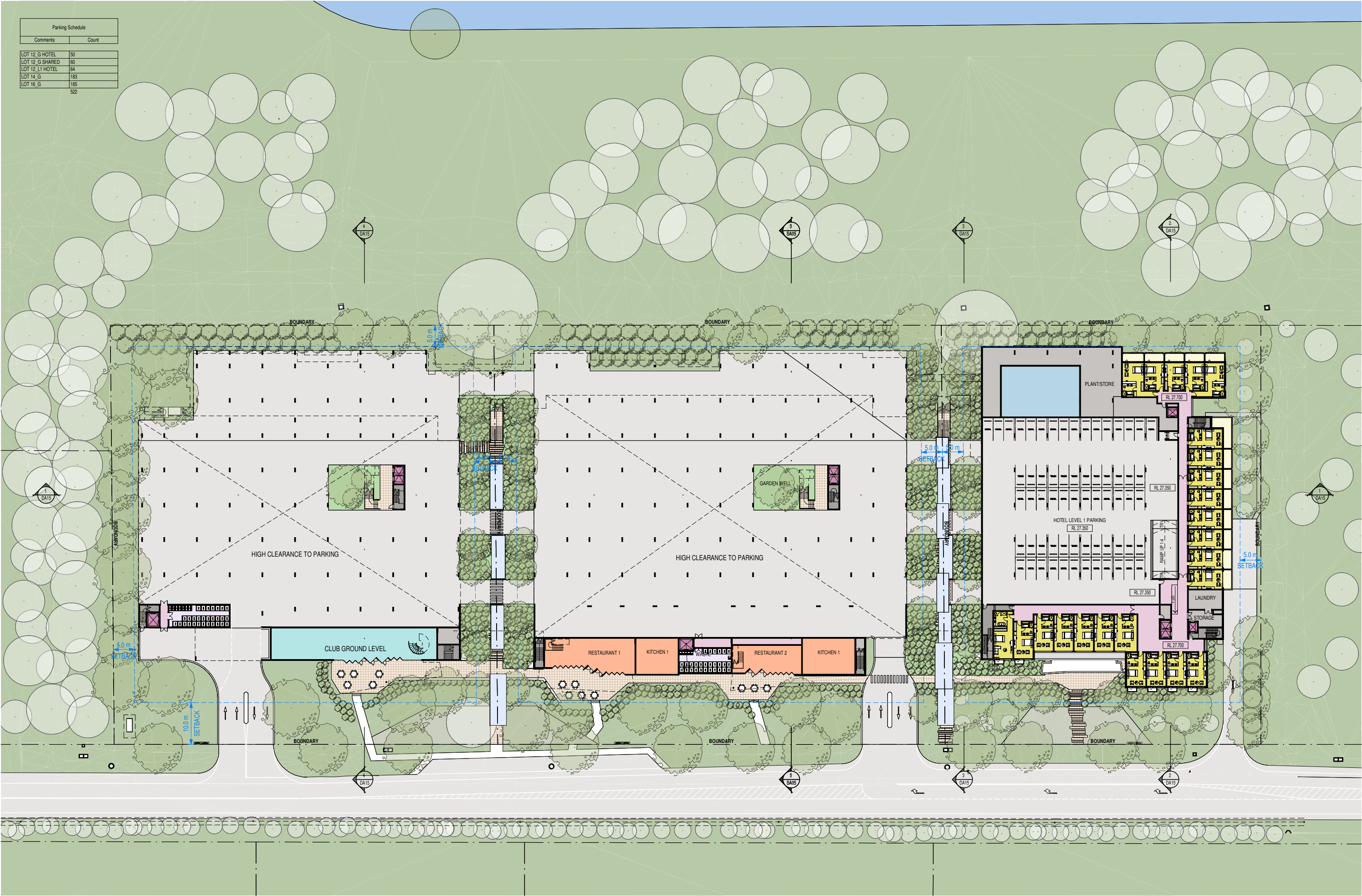


SITE PLAN - PROPOSED ROAD
1:500

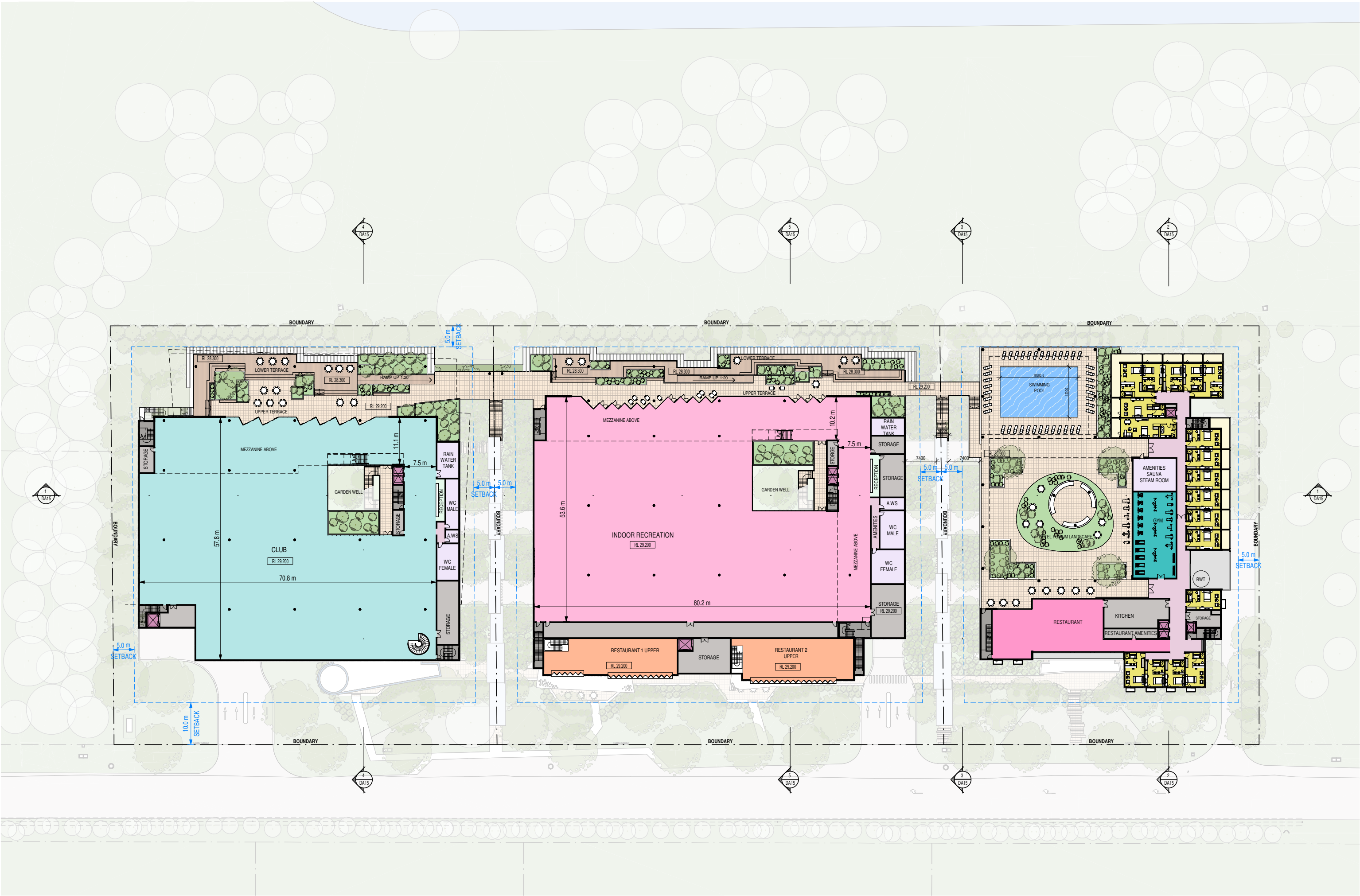
ISSUE	DATE	AMENDMENT	GENERAL LEGEND: Proposed Construction Existing Retained Demolished	EX TELMARKER EX TEL EX SMH EX SP EX H EX SWP	Existing Telmarker Post Existing Telco Pit Existing Manhole Existing Sign Post Existing Hydrant Existing Drainage Pit		0 5 10 15 20 SCALE 1:500@A1	50m (1:1000@A3)	PROJECT No.	17011	MORSON GROUP NOMINATED ARCHITECT - P. MORSON REGISTRATION NUMBER 81102 ACH 02/04/2014 556, 48/04/2014 632/144 556 Email/ info@morsongroup.com.au Phone/ (02) 9380 4946 Mobile/ PO Box 170, Potts Point NSW 1230	SHEET SIZE: A1	SHEET NAME:	DEMOLITION PLAN & PROPOSED ROAD	DRAWING No.	DA06							
P3	20-05-2025	PRELIMINARY														CLIENT		ISSUE No.	A				
P4	21-05-2025	PRELIMINARY														ADDRESS	39-65 Old Castlereagh Rd, Castlereagh NSW 2749						
P5	04-06-2025	PRELIMINARY																					
A	09-06-2025	DA SUBMISSION																					

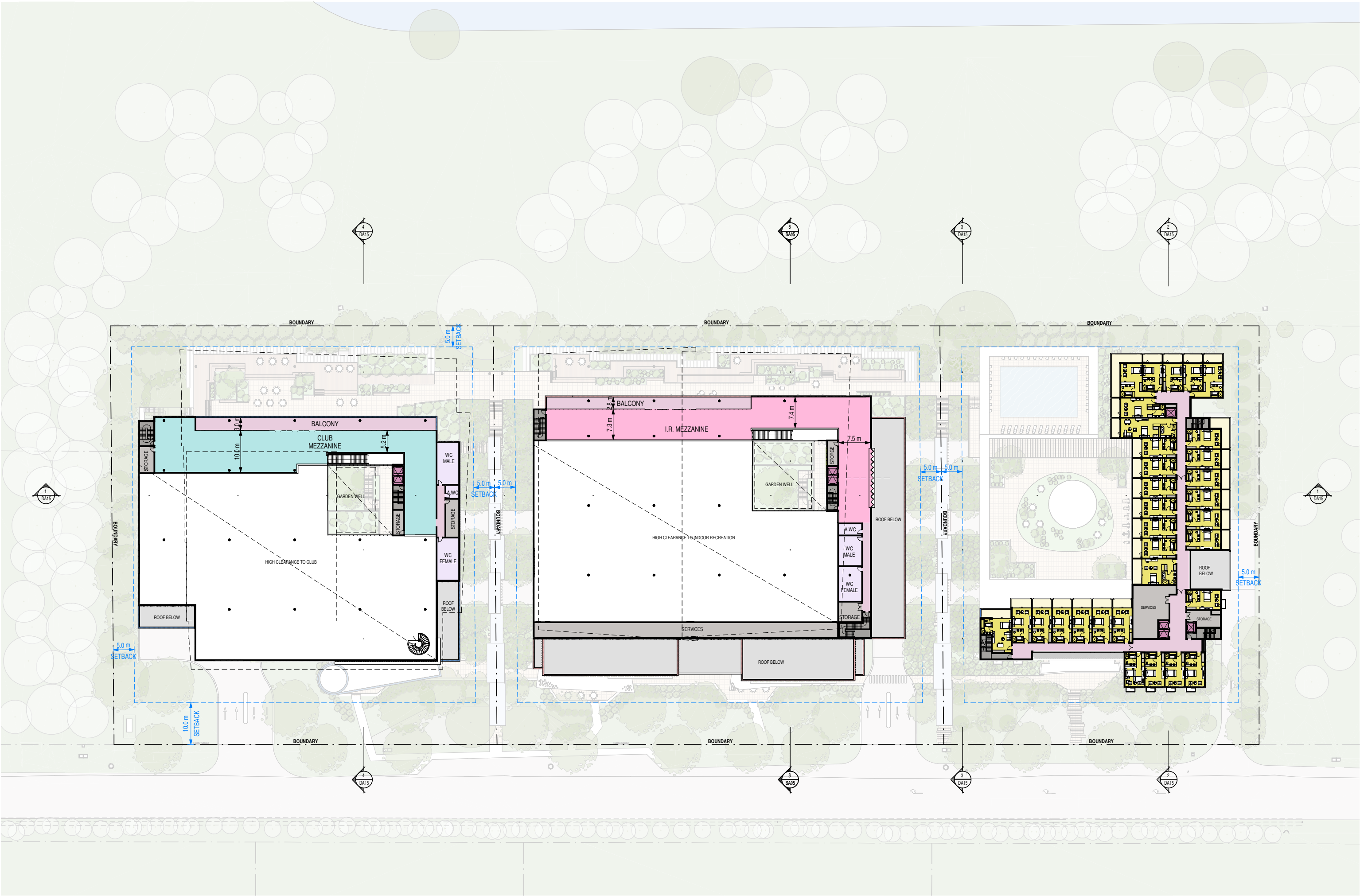


ISSUE		DATE	AMENDMENT	GENERAL LEGEND:		PROJECT		PROJECT No.	MORSON GROUP		SHEET	SHEET	DRAWING No.				
P4		20-05-2025	PRELIMINARY	FHB Fire Hydrant Booster		Existing Planting		17011		NOMINATED ARCHITECT - P. MORSON REGISTRATION NUMBER 8100 ACTN 623 944 556, ABN 54 623 944 556 Email: info@morsongroup.com.au Phone: (02) 9380 4946 Model/PO Box 170, Potts Point NSW 1523	SIZE: A1	NAME: GROUND LEVEL PLAN	DA07				
P5		21-05-2025	PRELIMINARY	GD Grated Drain		Transplanted Planting											
P6		04-06-2025	PRELIMINARY	RL 12.340 Proposed Levels		Proposed Planting											
A		09-06-2025	DA SUBMISSION	RL 12.340 Existing Surveyed Levels		Proposed Planting											
				RWT Rainwater Tank		TOH Top of Hob		0		10		20		30		40m	
				TOW Top of Wall		SCALE 1:400@A1											



Parking Schedule	
Comments	Count
LOT 12 G HOTEL	50
LOT 12 G SHARED	60
LOT 12 L1 HOTEL	64
LOT 14 G	183
LOT 16 G	165
	522



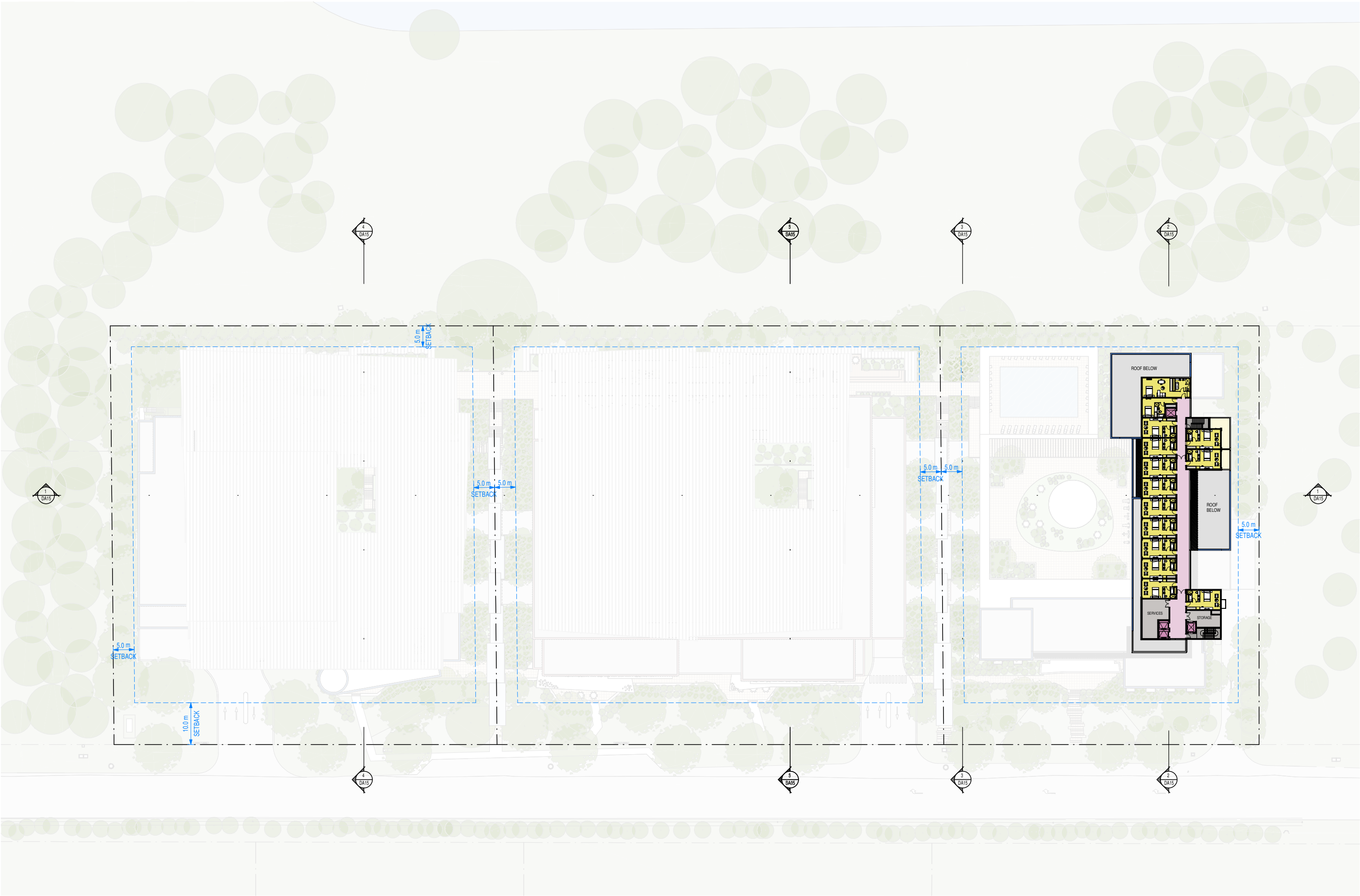




ISSUE	DATE	AMENDMENT	GENERAL LEGEND:		PROJECT		PROJECT No. 17011		MORSON GROUP		SHEET SIZE: A1		SHEET NAME: LEVEL 4 HOTEL		DRAWING No. DA11	
P1	21-05-2025	PRELIMINARY	RL 12.340	Proposed Levels	FHB Fire Hydrant Booster	GD Grated Drain	Existing Planting	Transplanted Planting	Proposed Planting	REGISTRATION NUMBER 8100	ACN 623 944 556	ABN 54 623 944 556	EMAIL: info@morsongroup.com.au	PHONE: (02) 9380 4748	ISSUE No. A	
P2	04-06-2025	PRELIMINARY	RL 12.340	Existing Surveyed Levels	RL Relative Level	RWT Rainwater Tank	TOH Top of Hob	TOW Top of Wall		REGISTRATION NUMBER 8100	ACN 623 944 556	ABN 54 623 944 556	EMAIL: info@morsongroup.com.au	PHONE: (02) 9380 4748		
A	09-06-2025	DA SUBMISSION														

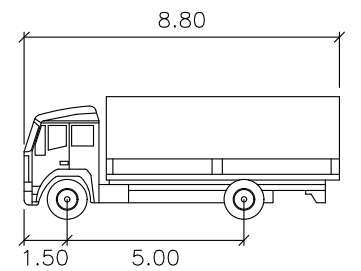
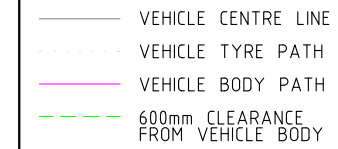


ISSUE	DATE	AMENDMENT	GENERAL LEGEND:		PROJECT		PROJECT No. 17011		MORSON GROUP		SHEET SIZE: A1		SHEET NAME: LEVEL 5 HOTEL		DRAWING No. DA12	
P1	21-05-2025	PRELIMINARY	RL 12.340	Proposed Levels	FHB Fire Hydrant Booster	GD Grated Drain	EXISTING PLANTING	TRANSPLANTED PLANTING	PROPOSED PLANTING	NOMINATED ARCHITECT - P. MORSON	SHEET SCALE: 1:400		ISSUE No. A		A	
P2	04-06-2025	PRELIMINARY	RL 12.340	Existing Surveyed Levels	RD Relative Level	RWT Rainwater Tank	TOH Top of Hob	TOW Top of Wall	TOH Top of Wall	REGISTRATION NUMBER 8100	SHEET NAME: LEVEL 5 HOTEL		A		A	
A	09-06-2025	DA SUBMISSION	RL 12.340	Existing Surveyed Levels	TOH Top of Hob	TOW Top of Wall	ADDRESS		39-65 Old Castlereagh Rd, Castlereagh NSW 2749		SHEET NAME: LEVEL 5 HOTEL		A		A	



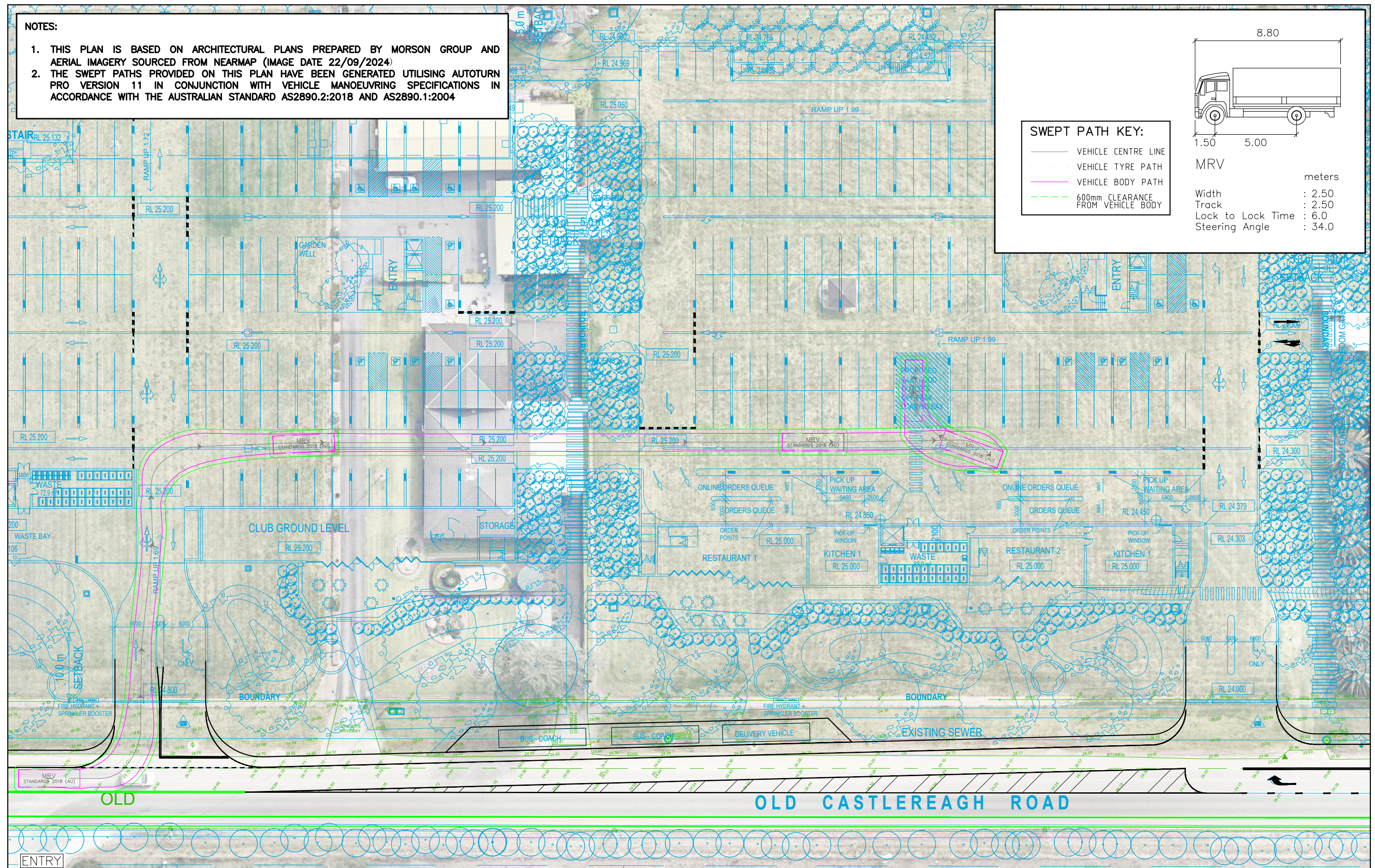
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P3	29-01-2025	SDRP no 02 Issue			FHB Fire Hydrant Booster	Existing Planting	Transplanted Planting	Proposed Planting								
P4	21-05-2025	PRELIMINARY	RL 12.340	Proposed Levels	GD Grated Drain											
					RL Relative Level											
P5	04-06-2025	PRELIMINARY	RL 12.340	Existing Surveyed Levels	RWT Rainwater Tank											
A	09-06-2025	DA SUBMISSION			TOH Top of Hob											
					TOW Top of Wall											
							0 10 20 30 40m									
							SCALE 1:400@A1									
									PROJECT CASTLEREAGH TOURISM DEVELOPMENT							
									ADDRESS 39-65 Old Castlereagh Rd, Castlereagh NSW 2749							
									CLIENT							

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 22/09/2024)
2. THE SWEEP PATHS PROVIDED ON THIS PLAN HAVE BEEN GENERATED UTILISING AUTOTURN PRO VERSION 11 IN CONJUNCTION WITH VEHICLE MANOEUVRING SPECIFICATIONS IN ACCORDANCE WITH THE AUSTRALIAN STANDARD AS2890.2:2018 AND AS2890.1:2004



meters

Width : 2.50
Track : 2.50
Lock to Lock Time : 6.0
Steering Angle : 34.0



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PH: (02) 8971 8314
EMAIL: info@stanburytraffic.com.au
WEBSITE: www.stanburytraffic.com.au

39-65 OLD CASTLEREAGH ROAD, CASTLEREAGH
CAR PARK COMPLIANCE REVIEW
PROPOSED ROAD AND ACCESS
SWEEP PATH ASSESSMENT

SCALE 0 5.0 10.0 1:500@A3

DRAWING NO. 24-161-05-V4

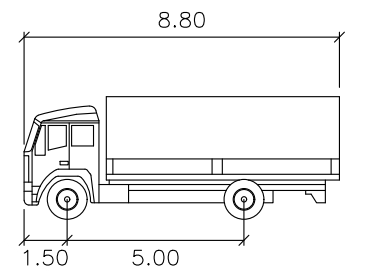
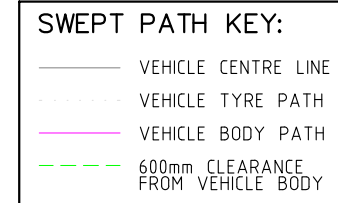
DATE 25 June 2025

CREATED BY
Y.H

APPROVED BY
M.S

SHEET
06 / 12

1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 22/09/2024)
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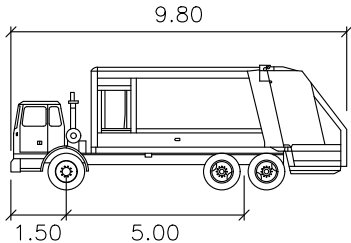


MRV		meters
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	34.0

- NOTES:
1. THIS PLAN IS BASED ON ARCHITECTURAL PLANS PREPARED BY MORSON GROUP AND AERIAL IMAGERY SOURCED FROM NEARMAP (IMAGE DATE 22/09/2024)
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SWEPT PATH KEY:

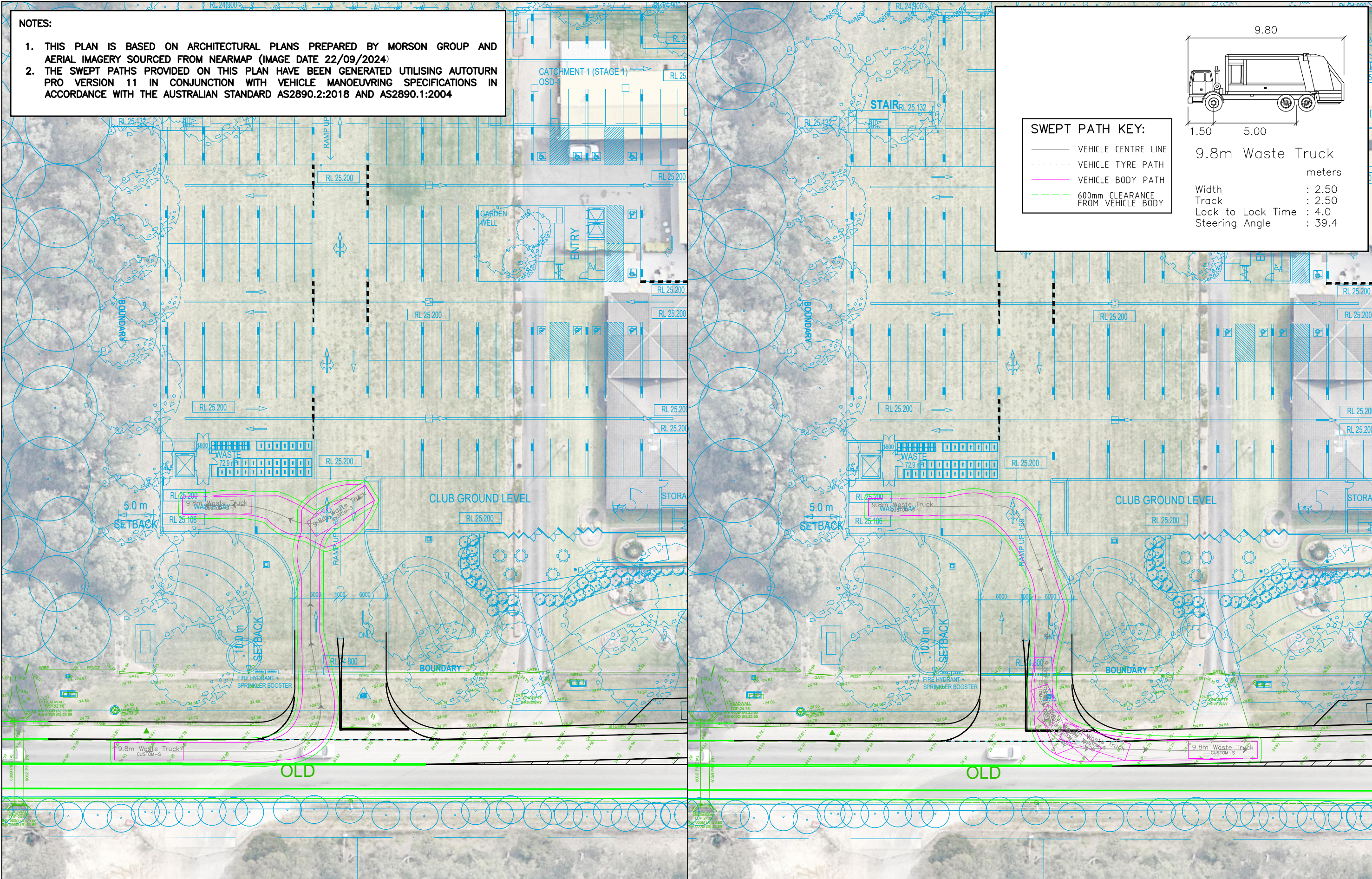
- VEHICLE CENTRE LINE
- - - VEHICLE TYRE PATH
- VEHICLE BODY PATH
- - - 600mm CLEARANCE FROM VEHICLE BODY



9.8m Waste Truck

metres

- Width : 2.50
- Track : 2.50
- Lock to Lock Time : 4.0
- Steering Angle : 39.4



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39-65 OLD CASTLEREAGH ROAD, CASTLEREAGH
CAR PARK COMPLIANCE REVIEW
PROPOSED ROAD AND ACCESS
SWEPT PATH ASSESSMENT

SCALE 0 5.0 10.0 1:500@A3

DRAWING NO. 24-161-05-V4

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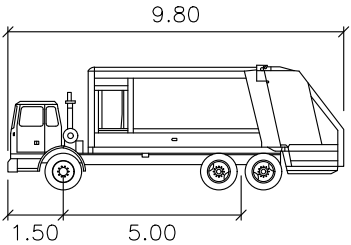
- NOTES:
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LEGEND:

- EXISTING FEATURES
- PROPOSED FEATURES

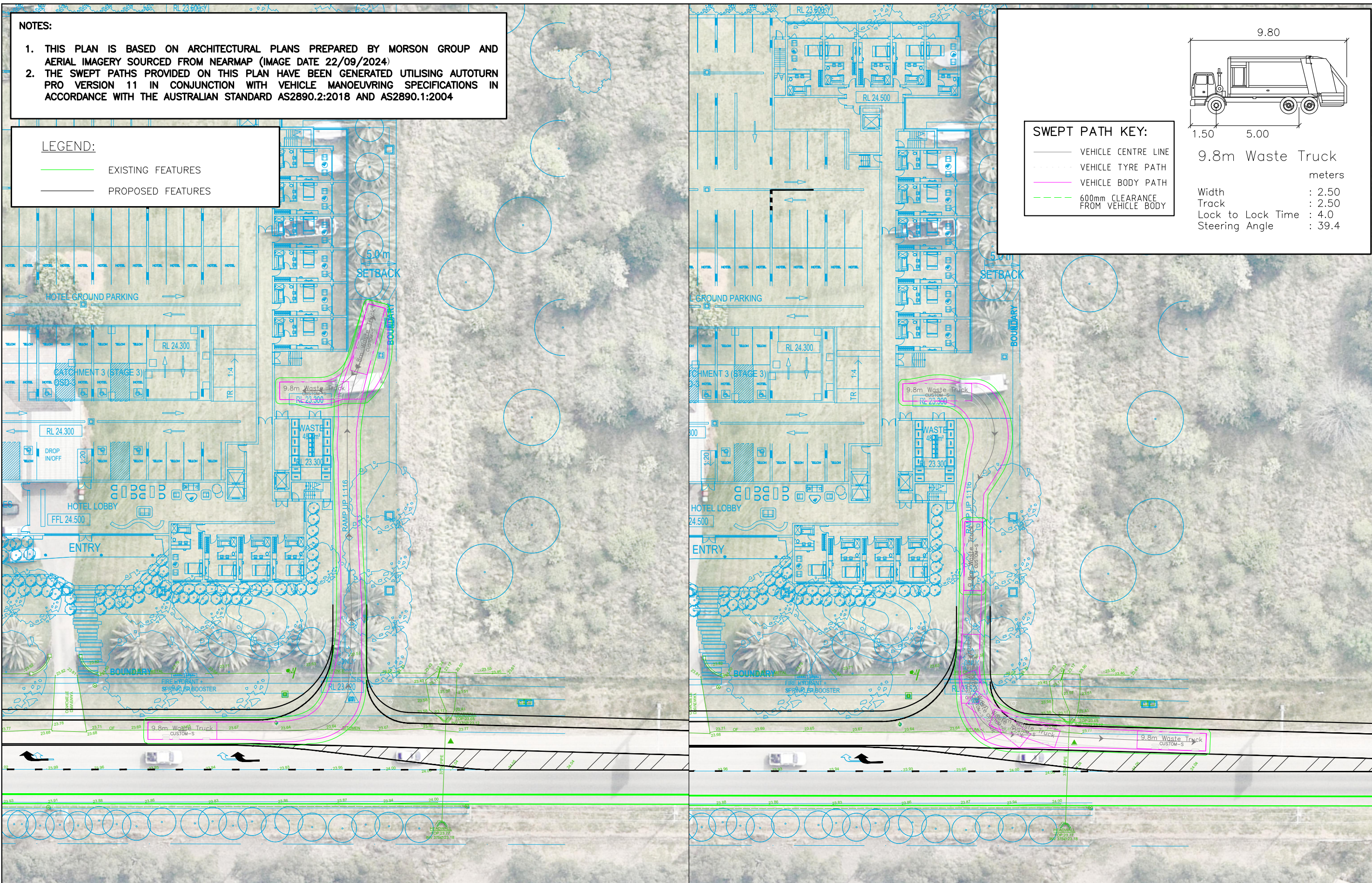
SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 600mm CLEARANCE FROM VEHICLE BODY



9.8m Waste Truck

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 4.0
Steering Angle	: 39.4



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PROPOSED ROAD AND ACCESS
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DRAWING NO. 24-161-05-V4

DATE 25 June 2025

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Y.H

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M.S

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Appendix C Demolition/Excavation and Construction Checklist

Waste and/or Recyclable Materials			Destination		
			Reuse and Recycling		Disposal
Possible Materials Generated	Estimated volume (m³) or Area (m²) or weight (t) (Contractor to confirm)		On-site (How will materials be reused and/or recycled on-site?)	Off-site (Specify the contractor and recycling facility)	Specify the contractor and/or landfill site/transfer station
	Demolition	Construction			
Excavation Material					
Timber (specify)					
Concrete					
Bricks					
Tiles					
Metal (specify)					
Glass					
Plasterboard					
Fixtures and Fittings					
Floor Coverings					
Packaging					
Garden Organics					
Recoverable containers (CDS)					
Paper/Cardboard					
Residual Waste					
Hazardous Waste (specify)					
Other(s) specify					
How and where will materials be stored on-site for reuse and recycling? e.g. in skip bins located near entry.					
How will site operations be managed to ensure minimal waste creation and maximum reuse and recycling? e.g. staff training, feedback from waste management service provider, on-going checks by site managers, separate area set aside for sorted wastes, clear signage for waste areas etc.					
How will this plan be evaluated, and who is responsible for the evaluation? e.g. feedback from staff collected by the site manager.					

Appendix D Systems and Specifications

D.1 Specified Refuse Equipment

The table below provides contextual examples of the equipment specified within this WMP and is not intended to provide an exhaustive list of all potential options of the required equipment.

Equipment	Waste Streams	Examples	Information
Hotel Suite bins	General waste and recycling		Various options and sizes. In-built and standalone bin options available. Examples: https://www.bunnings.com.au
Tenancy Back of House Individual Stream Bins	General waste, recycling, food waste, paper / cardboard		Various options and sizes available. To be supplied depending on preference and space available. Examples: https://www.sourceseparationsystems.com.au/product/multisort https://methodrecycling.com.au/
240L bins	General waste, paper, recycling, organics waste		Dimensions approx. 740 x 580 x 1080mm (L x W x H) (dimensions may depend on contractor) Examples: http://www.justwheeliebins.com.au , http://wheeliebinsonline.com.au
1100L bins	General waste, recycling, paper / cardboard		Dimensions approx. 1070 x 1240 x 1330mm (L x W x H) (dimensions depend on contractor) Examples: http://www.justwheeliebins.com.au , https://www.australianwastemanagement.com.au
Portable Cooking Oil Storage	Used Cooking Oil		Cooking oil recycling Example: https://www.cookers.com.au Cooking oil delivery, used oil collection and provision of required equipment
Refuse / Cleaners Trolleys	All Streams		Assisted manual transfer of refuse Examples: https://rubbermaidcommercial.com.au/products/waste-management/mega-brute https://www.materialshandling.com.au/products/deluxe-compact-cleaning-carts

Equipment	Waste Streams	Examples	Information
Kitchen Caddies (Optional)	Food waste		Various options and sizes. Examples: https://www.compostapak.com.au/ https://www.sourceseparationsystems.com.au/
Counter-top Battery Recycling (Optional)	Electronic Waste		Prepaid battery collection Example: https://envirostream.com.au/product/prepaid-countertop-battery-recycling-box/ https://www.ecoactiv.com.au/product/4l-battery-recycling-prepaid-service/
Bin Weighing Scales (Optional)	All streams		Scales are used to capture all outgoing refuse weights for ongoing analysis of recycling rates. Examples https://www.osat.info/ https://gurru.com.au/bintracker/

Appendix E Refuse Signage

E.1 Refuse Signage

All waste stream signage used should be colour coded to be compliant with *AS 4123.7-2006 Mobile waste containers – Part 7: Colours, markings and designation requirements*.

Waste signage guidelines are provided by the New South Wales government:

<https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs>

General Refuse Signage



Other Refuse Signage



Colour coding as per AS 4123.7-2006

Mixed (Commingled) Recycling	PMS 108
General waste (landfill)	PMS 032C
Organics	PMS 15-0343
Paper and cardboard recycling	PMS Process Blue C
Soft Plastics	PMS 1655
Used Cooking Oil	Grey

E.2 Other Refuse, Facility and Safety Signage

Various signage including refuse area, safety and facility signage should be arranged through certified signage providers. Example signs can be found at <http://www.signblitz.com.au>, <https://www.wayout.com.au> or <https://www.smartsign.com>.

Example Refuse Room Signage



Example Facility Signage



Example Safety Signage



Appendix F Terms and Abbreviations

In this SWMMP, a term or abbreviation has the following meaning unless indicated otherwise:

TERM	ABBREVIATION	DEFINITION
Equipment		
Bin (Refuse Bin)		A plastic or steel container for disposal and temporary storage of waste or recycling items. Various types and sizes exist for different items and purposes. Examples include residential unit bins, bulk bins, MGB, steely bins and specialised for medical waste or cigarette butts.
Bin Storage Area		An enclosed area designated for storing on-site refuse bins or a refuse compactor within the property.
Bulk Bin		A galvanized or steel bin receptacle that is greater than 360L in capacity generally ranging from 1.00m ³ to 4.50m ³ used for the storage of refuse that is used for on-site refuse collection.
Bulk Mobile Garbage Bin	Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 660L to 1100L used for the storage of refuse.
Collection Point		An identified position where refuse bins are stored for collection and emptying. The collection point can also be the bin storage area.
Compactor		A receptacle that provides for the mechanical compaction and temporary storage of refuse. It allows to reduce bin numbers and collection frequency.
Composter		A container or machine used for composting specific food scraps and/or organic materials.
Food Waste Recycling System		Defined as a vacuum or pump-based system for shredding, macerating or pulping of food waste. The food waste is transferred through pressure (service) pipes to sealed liquid storage tanks.
Green Waste		All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers.
Liquid Waste		Non-hazardous liquid waste generated by commercial premises should be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
Mobile Garbage Bin	MGB	A plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste		Putrescible waste is the component of the waste stream liable to become putrid and usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling		Recycling contains all material suitable for re-manufacture or re-use, e.g. glass bottles and jars; plastics such as PET, HDPE and PVC; aluminium aerosol and steel cans and lids; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines.
Refuse		Refuse is material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse Storage Room		An area identified for storing on-site MGBs or Bulk Bins within the property.
Refuse Trolley		A cart on wheels that can be used to collect smaller quantities of refuse from different areas or rooms of a building or site, and wheel the collected refuse to a (bulk) bin storage area where it is disposed. Refuse trolleys are commonly used in hotels or offices.
Regulated Waste		Regulated waste is waste prescribed under legislation as regulated waste.
Transfer (Manual Transfer)		Manual transfer means physical transfer of refuse material and associated bulk bins or trolleys without assistance.

TERM	ABBREVIATION	DEFINITION
Waste		Waste is referred to as refuse material with the exclusion of recycling, green waste, hazardous waste, special waste, liquid waste and restricted solid waste.
Waste (General Waste)		General waste is generally referred to as material free of any actual or apparent contamination such as pathological / infectious, radioactive materials and / or hazardous chemical. Reporting use is for material considered to be free of food waste.
Wheelie Bin		A MGB of up to 360L, usually with 2 wheels for easy transfer. A common type is a 240L wheelie bin used for kerbside collection in many residential areas.
Measures		
Cubic Metre	m ³	Volume in cubic metre(s) related to refuse management equipment.
Ground Floor Area	GFA	The GFA of all storeys of a building is measured from the outside of the external walls or the centre of a common wall. It is commonly measured in square metres.
Kilogram	kg	Kilogram(s) related to refuse weight.
Litre	L	Litre(s) related to refuse volumes.
Square Metre	m ²	Square metre(s) related to refuse areas.
Ton	T	Ton(s) related to refuse weight.
Collection Vehicles		
Body Truck		A conventional heavy vehicle with a covered loading area. It is generally not specifically designed for emptying the content of bins into the truck during refuse collections, but can be used to carry entire (full) bins for servicing by bin swap-over.
Refuse Collection Vehicle	RCV	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Rear-End-Loading Refuse Collection Vehicle	REL RCV	A truck specially designed to collect municipal solid waste and recycling, typically 240L wheelie bins to 1100L bulk bins, from rear loading mechanism and haul the collected waste to a solid waste treatment facility.
Tank Truck		An RCV that is specifically designed to collect liquid wastes such as waste cooking oil and food waste pulp. The waste is typically pumped from a waste storage tank into the truck via a hose. Liquid waste management equipment is often provided by the contractor who collects the waste and operates the truck.