Operational Waste Management Plan

Proposed Kellyville Park PNRL Eels – Centre of Excellence & Community Sports Centre

At 8 Memorial Avenue, Kellyville

On behalf of Parramatta Rugby League Club Pty Ltd

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Executive Summary

This document is an Operational Waste Management Plan (OWMP) developed for the proposed Kellyville Park PNRL Eels Centre of Excellence and Community Sports Centre development, located at 8 Memorial Avenue, Kellyville.

The purpose of the OWMP is to provide compliance and design information relating to the handling, storage, and collection of refuse within the proposed development. Compliance relates to alignment with The Hills Shire Council planning scheme policy and associated codes. The content of the OWMP is written with the purpose of providing a guide for the design, construction and operational phases of the development and therefore may be updated to include detailed information as required for each phase. Sections included as "client information only" are removed or amended during the appropriate phase and therefore should not be reviewed as assessable items.

Compliance

The OWMP satisfies The Hills DCP 2012 PBS6 Business requirements as well as the requirements outlined by SEARs. The content of the OWMP provides the following information:

- Type of Development Uses
- Individual refuse streams for each development use; and
- Anticipated quantities likely to be generated for each refuse stream under 100% occupancy and operation of the proposed development.
- Refuse collection, storage, transfer, and disposal arrangements during full occupancy of the completed development.
- Recommended operational requirements for the operational phase of the development including.

Waste Management Summary

Access to the site is via Memorial Avenue, the development will have a separate refuse enclosures for each facility. The collection contractor will pull up in front of the bin storage areas, retrieve the bins and return them after the service has been performed. A service frequency of 7 days per fortnight has been recommended for this site. This provides a maximum of 2 days of storage for each waste stream.

Equipment Requirement – Centre of Excellence	Equipment size	Quantity
General Waste	1100L	1
Food / Organics Waste	240L	2
Commingled Recycling	1100L	2
Secure Destruction – Office Areas	240L	1 per printer / stationary area
Medical Waste	Various Sizes	TBD by medical requirements

Equipment Requirement – Community Facility	Equipment size	Quantity
General Waste	1100L	1
Food / Organics Waste	240L	2
Commingled Recycling	1100L	2
Cardboard	1100L	2
Secure Destruction – Office Areas	240L	1
Medical Waste	Various Sizes	TBD by medical requirements
General Waste – Concourse / Stadium Seating	240L	6
Commingled Recycling – Concourse / Stadium Seating	240L	6
Cooking Oil	400L collection tank (TBC)	TBD
Bin lifter		2

Below is a list of frequently generated waste streams what will be collected on a regular basis for each building. Further details are provided within the OWMP for non-frequently generated waste streams

Building	General Waste (L / Week)	Food / Organics Waste (L / Week)	All Recycling (L / Week)
Centre of Excellence	3,435	1,145	5,724
Community Sports Centre	3,305	1,446	11,569
Combined Total	**6,732**	**2,591**	**17,293**

Centre of Excellence: The refuse will be managed back of house by operation staff / cleaners and transferred to the refuse room at the end of day or at designated times.

Community Sports Centre: The refuse will be managed back of house by operation staff / cleaners and transferred by staff when appropriate or at designated times to the refuse room in the Centre of Excellence Building.

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1 Introduction

1.1. Background

TTM Consulting has been engaged by Parramatta National Rugby League Club Pty Ltd to prepare an OWMP to support the proposed Centre of Excellence and Community Sports Centre at 8 Memorial Avenue, Kellyville. It is understood that it is a State Significant Development a Development Application will be lodged with Council.

The purpose of this OWMP is to outline the refuse collection arrangements for the Centre of Excellence and Community Sports Centre with regards to recommending equipment, bin sizes and numbers and also how the waste is disposed of and transported throughout the stadium to provide an efficient and effective waste management processes and procedures for the proposed development.

1.2. Scope

The content of this plan is intended to provide information in reverse order to the typical movement of waste streams from disposal to collection. The reverse order provides context for refuse collection, storage and transfer. Information about refuse disposal and disposal points is given for each use area within the development.

The items covered within the report are explained in Table 1.1. The key information for Council approval can be found in Section 2.

Table 1.1: Scope Items

Item	Explanation
Refuse streams	Identification of refuse streams and anticipated refuse volumes that will be produced within each of the "Development Uses"
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

Detailed information including refuse calculations, site plans and drawings, recommended refuse management equipment and system specifications, common refuse signage as well as a list of terms and abbreviations are provided in the appendix.

The recommendations in this report relate to the operational phase of the development. Additional requirements for refuse management during or after demolition or construction phases are not included and require a dedicated plan.

1.3. Regulatory Considerations

1.3.1. Refuse Planning Scheme

The State Government provide the framework for the Local Government Areas who use this to describe the planning policies, therefore TTM has referred to the City of Parramatta Council documentation, specifically '*The Hills DCP 2012 PBS6 Business*'. Table 1.2 demonstrates the refuse management items addressed to align with The Hills DCP's and SEARs requirements.

Table 1.2: Waste Management Plan Compliance Checklist

Development Controls	Compliance / Comments
Adequate storage for waste materials must be provided on site. Ideally waste storage containers should be kept inside units and under no circumstances should waste storage containers be stored in locations that restrict access to any of the car parking spaces provided on site.	Refuse room provided for all refuse streams
Where a residential development and commercial development occupy the same site or development, the waste handling, storage and collection systems for residential and commercial waste are to be completely separate and self-contained.	N/A – Commercial Only Site
All waste must be removed at regular intervals and not less frequently than once per week.	Recommended collection frequency of 7 services per fortnight
All waste storage areas must be screened from view from any adjoining residential property or public place.	Enclosed bin room provided
Waste storage areas must be kept clean, tidy and free from offensive odours at all times.	Ongoing during operational phase
Submission Requirements	**Compliance / Comments**
Applications for development are to be accompanied by a Waste Management Plan (WMP). The WMP accompanying the application must demonstrate appropriate design of facilities and on-going management techniques that minimise waste and the WMP will include the following details: - Type of future use for the development. - Types of waste to be generated. Part B Section 6 Business The Hills Shire Council Page 18. - Estimated volume of waste to be generated per week and different waste streams - Show on plans and describe on-site storage and/or treatment facilities for waste. - State the destination for waste produced. - Servicing arrangements.	OWMP covers all of the submission requirements.

1.3.2. Waste Levy

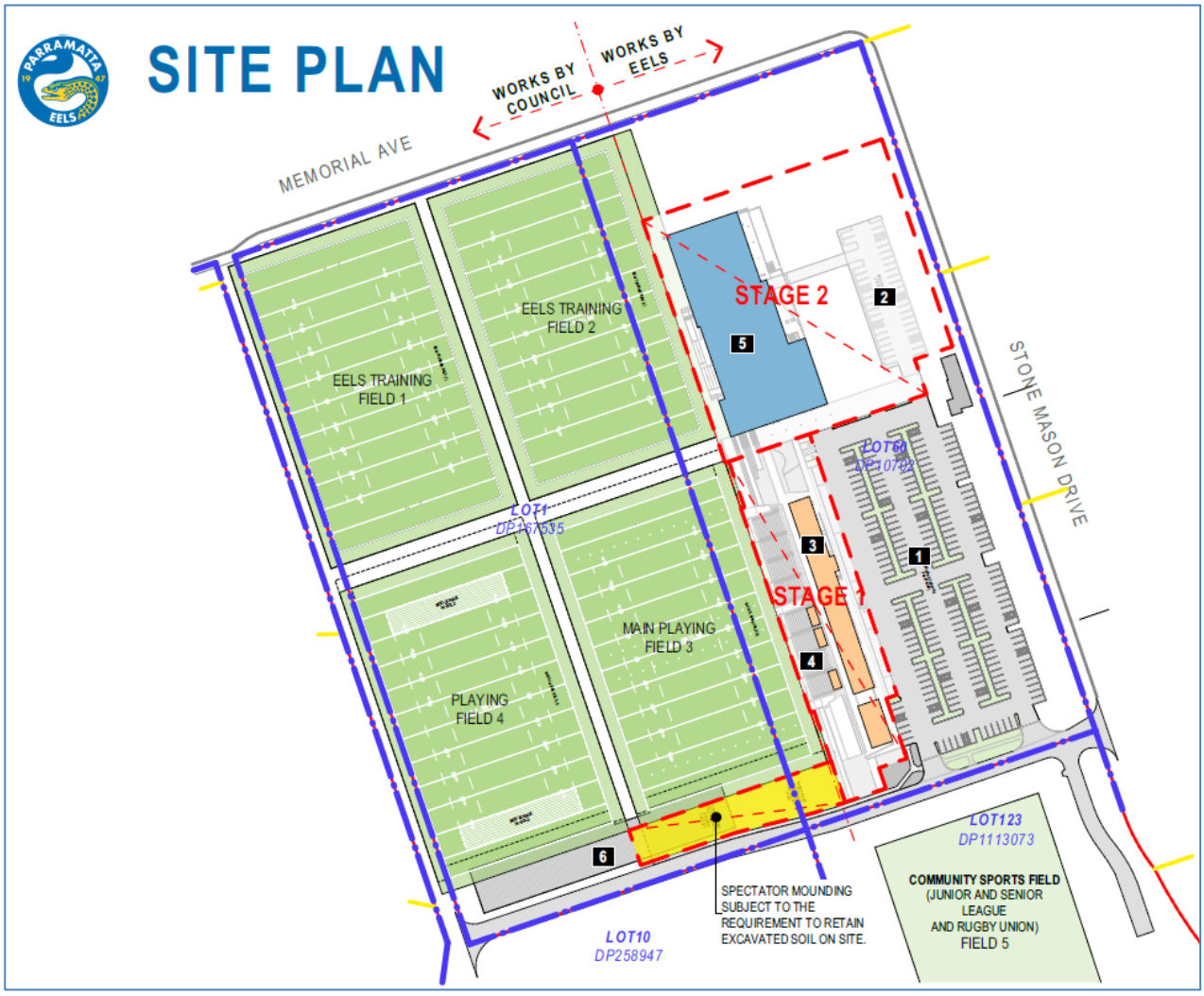
The New South Wales state government introduced a levy on commercial wastes sent to landfill. It is normally be applied per tonne of waste and passed on by waste collection contractors to customers, possibly based on an assumed volume per bin.

The cost of the levy for the start of the development's operation will be approximately $147 per tonne as of 1 July 2021. This cost is on top of normal waste collection costs charged by waste collection contractors. Therefore, in order to reduce waste levy costs, waste generators should choose to avoid waste generation through a range of preventative measures and maximise recycling and food waste diversion from landfill.

1.4. Site Location

The subject site is located at 8 Memorial Avenue, Kellyville, at the existing Kellyville Park as shown in Figure 1.1. The property description is Lot 1 on DP 167535 and Lot 60 on DP10702. The site has a single road frontage to Memorial Avenue.

Figure 1.1: Site Location (Google Maps)



Source: HB Architecture & Planning, Overall Site Plan, P6, Date: 30/02/2021

1.5. Development Summary

The project will see the development of a state-of-the-art Centre of Excellence and Community Sports Facility at Kellyville. Once completed the project will:

- Consolidate the Parramatta Eels training and administration bases at one location
- Provide improved practice facilities for all players (from community to elite levels) to develop their skills as well as for skilled players to have access to high performance training facilities.
- Provide a community facility with covered seating for spectators to service Parramatta Eels pathway programs and existing community tenants of Kellyville Park.
- Support the operations of the Parramatta Eels and ensure its viability into the future.
- The Project represents a significant investment into rugby league in the region. The project is being funded by the Federal Government.

1.6. Development Refuse Profile

Table 1.3 demonstrates the anticipated volumes for each of the commonly separated refuse streams across the entire site where refuse is generated. All calculations and equipment requirements are based on the development areas and common waste generation rates as outlined in the detailed information in Appendix A.

Table 1.3: Refuse Summary

Facility	Level	Areas	Waste (L / Week)	Food / Organics (L / Week)	All Recycling (L / Week)	Use Type / Generation Rate
Centre of Excellence	Lower Level	Football Dept.	571	190	952	Office
		Aquatic Dept.	572	191	954	Office
		Medical Dept.	142	47	236	Office
		Gym	961	320	1601	Office
	Upper Level	Admin Area	555	185	926	Office
		Social Area	328	109	546	Office
		FOH Area	306	102	509	Office
Community Sports Centre	Lower Level	Ref + Change + Gym Facilities	628	209	1047	Office
	Lower Levels	Food and Beverage Areas	875	875	4375	Food and Beverage Outlets
		Multi-Purpose Room	700	280	3150	Conference / Events
		Office Areas	87	29	145	Food and Beverage Outlets
		Retail Tenancy	263	53	2100	Office
	Grandstand Seating	1504 Seats	752	0	752	
Total (L)			**6739**	**2591**	**17293**	

Taking in consideration the waste levy as outlined in Section 1.3.2, examples of waste levy costs for this development are outlined below. The calculation is based on the anticipated commercial refuse volumes as shown above and 80% food waste and 50% recycling diversion from landfill with year 2021 waste levy pricing.

Table 1.4: Waste Levy Costs

Description	Measure	General Waste	Food / Organics	All Recycling
Quantity (weight)	Tons/year	6,739	2,591	17,293
Estimated additional levy costs from 2022	A$/year	$7,748.28	$1,687.91	$3,199.30

2 Refuse Management

This section describes the arrangements for the collection, storage, transfer and disposal of refuse within the development. This includes associated bin quantities, storage capacities, equipment details, collection frequencies and site access details.

2.1. Refuse Collection

The following information relates to refuse collection arrangements for the entire development. All refuse will be collected by a Commercial Collection Contractor, or by a provider directed by Council.

2.1.1. Bin Quantities

Table 2.1 and Table 2.2 outlines the estimated number of bins per collection. As waste volumes may vary according to the development occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation. Note: Final bin numbers for residential storage and collection will be assessed by On-site management and collection contractor personnel and adjusted as required upon commencement of the building operations.

Table 2.1: Equipment Summary – Centre of Excellence Building

Equipment	Equipment size	Quantity
General Waste	1100L	1
Food / Organics Waste	240L	2
Commingled Recycling	1100L	2
Secure Destruction – Office Areas	240L	1 per printer / stationary area
Medical Waste	Various Sizes	TBD by medical requirements

Table 2.2: Equipment Summary – Community Facility Building

Equipment	Equipment size	Quantity
General Waste	1100L	1
Food / Organics Waste	240L	2
Commingled Recycling	1100L	2
Cardboard	1100L	2
Secure Destruction – Office Areas	240L	1
Medical Waste	Various Sizes	TBD by medical requirements
General Waste – Concourse / Stadium Seating	240L	6
Commingled Recycling – Concourse / Stadium Seating	240L	6
Cooking Oil	400L collection tank (TBC)	TBD
Bin lifter		2

2.1.2. Collection Cycle

Table 2.3 outline the vehicles and estimated collection frequencies or site entries required to service the site refuse. The type of vehicles allocated, and demand will be subject to final design and potential selection of volume reduction equipment. The figures demonstrated apply as a maximum demand to the frequently generated waste streams.

Table 2.3: Estimated RCV Demands

Commercial Refuse Collections		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Collections per Week
General Waste	Collection Days	✓		✓		✓		✓	4
	Vehicle Type	REL RCV		REL RCV		REL RCV		REL RCV	
Food / Organics	Collection Days	✓		✓		✓		✓	4
	Vehicle Type	REL RCV		REL RCV		REL RCV		REL RCV	
Commingled Recycling	Collection Days		✓		✓		✓		3
	Vehicle Type		REL RCV		REL RCV		REL RCV		
Cardboard	Collection Days		✓		✓		✓		3
	Vehicle Type		REL RCV		REL RCV		REL RCV		

A collection frequency of 7 services per fortnight has been proposed. This provides a maximum of 2 days of storage between services for frequently generated waste streams.

2.1.3. RCV Arrangements

The Refuse Collection Vehicles (RCV) will enter the site from Memorial Avenue and service both the Community Facility and Center of Excellence buildings separately.

RCVs will enter the CoE and perform a single reverse manoeuvre into the service bays located at the north-eastern side of the CoE building. The driver will collect the bins from the loading bay to perform the service and exit the site in a forward's gear once the service is completed.

RCVs will enter the carpark area of the Community Facility to perform turn around manoeuvres to allow parking adjacent to the refuse storage areas, within the building and on the northern side of the carpark.

2.2. Refuse Storage

The Refuse storage room for the CoE Building is located on the upper level of north-eastern side of the Centre of Excellence Building. This room will hold 1100L waste, recycling bins and cardboard bins, 240L food/organics bins. A 'bin wash' area should be provided within this room to allow the regular cleaning of bins and washing down of the room.

The refuse storage areas for the Community Facility is proposed in 2 areas, 1 located adjacent to the CF building and the second location at the North-Eastern side of the carpark.

All refuse will be stored in bins or appropriate equipment in the refuse storage rooms until collected by the designated waste contractors.

2.3. Refuse Transfer

The prescribed below is the recommended disposal arrangements for the generated waste streams from each area. A simplified waste flow diagram is also provided with diagrams and indicative travel paths.

For all areas that are on different levels to the refuse room, refuse should be transported via the use of a refuse trolley and or lifts.

2.4. Refuse Disposal

The tables in this section summarise general recommended disposal arrangements for the generated refuse for each area use within the development.

Table 2.4: Disposal

Location	Disposal Details
Office / Media / All Team Areas	Waste and recycling bins of approximately 40L capacity should be provided in each of the office / media and team areas. Waste bins should be accompanied by a recycling bin in order to facilitate separation of general waste and recycling. Staff / Cleaners will transfer the contents of the bins to the Refuse store at the end of each day (Office) or at the end of the event (Media / Team areas). The bins are then decanted into the respective equipment for that refuse stream. Secure destruct paper bins may also be required in these areas. These bins are generally collected as a bin to truck service to ensure security of contents. Medical Waste bins should be provided in Teams and Medical areas – These bins are generally collected as a bin to truck service to ensure safe disposal of contents. Sanitary Waste bins should be provided in facilities areas – These bins are generally collected as a bin to truck service to ensure safe disposal of contents.
Café / Kitchen / Bar	Kitchens/Bars should have waste and recycling caddy bins of approximately 30-60L in the BOH operations areas (separation of waste streams should occur in the BOH operations to promote and facilitate proper disposal of waste).

Location	Disposal Details
	When full / at designated times or at the end of the day's operation, the kitchen staff / cleaners will transfer the bins directly to the refuse store and decant the bins into the respective equipment for that refuse stream.
Grandstand / Public Place Areas	Patrons will dispose of their waste and recycling in the Public Area Bins on the concourse areas, these Bin Bays should be specifically labelled for general waste and comingled recycling. Stadium staff / cleaners will transfer empty bins from the Waste Store and exchange with full bins in the Bin Bays. The full bins are then transferred to the refuse stores. The bins are then decanted into the respective equipment for that refuse stream. It is recommended that Public Area Bins are installed on the concourse area. Based on Seating numbers and waste potential waste generation the following should be considered for each stand; **Grandstand:** 4 x 240L waste and recycling bins **Public Place:** 2-3 x 240L waste and recycling bins (placed in areas where foot traffic flows) These bins may require rotation / emptying throughout an event to prevent overflowing.
Retail / Food and Beverage Outlets	Food and Beverage Outlets should have waste and recycling caddy bins of approximately 30-60L in the BOH operations areas (separation of waste streams should occur in the BOH operations to promote and facilitate proper disposal of waste). When full / at designated times or at the end of the day's operation, the kitchen staff / cleaners will transfer the bins directly to the refuse store and decant the bins into the respective equipment for that refuse stream.
Public Facilities	Waste Bins should be placed in the facilities for paper towelling disposal, these bins should be taken and decanted at designated times by stadium staff/cleaners. Sanitary Waste bins should be provided in public facilities – These bins are generally collected as a bin to truck service to ensure safe disposal of contents.

2.4.1. Other Waste

Table 2.5: Disposal of Other Waste

Refuse Stream	Disposal Details
Landscaping and Organic / Green Waste (Grass Clippings) etc	Landscaping / Green waste / Grass clippings will be produced from the stadium in a variety of ways ie; Maintenance / mowing of the playing surface, maintenance of the surrounding landscaping areas etc. A roll on – roll off bin of 10 – 15m^3 should be provided to collect this material, and can be collected on an ad-hoc basis
E-Waste/Batteries, Lamps and Fluorescent Globes	E-Waste/Batteries will be managed within the office areas and an ad-hoc collection performed when required. Alternatively, a storage area could be designed near the service bay to store these items until a collection is required. Lamps and Fluorescent Globes are usually removed off site by an electrician when the job is completed, however 240L bins can be provided for the storage until enough are collected to provide an ad-hoc service
Liquid and Hazardous Waste (paints, chemicals and pesticides)	Hazardous waste must be handled with due care, separated and securely stored securely within a locked cabinet in or near the Facilities Management Areas to ensure they are safely maintained and stored prior to collection. A Specialist Contractor should be engaged for the removal of Liquid and Hazardous Wastes.

3 Recommended Operational Requirements

3.1. Operational Equipment Summary

Equipment required or suitable for use as part of the operational phase of the development is outlined in Table 3.1. Lists of equipment, equipment suppliers and refuse management service providers for use during the operational phase of the development can be found in Appendix C.

Table 3.1: Equipment Schedule – Centre of Excellence

Equipment	Equipment size	Quantity
General Waste	1100L	1
Food / Organics Waste	240L	2
Commingled Recycling	1100L	2
Secure Destruction – Office Areas	240L	1 per printer / stationary area
Medical Waste	Various Sizes	TBD by medical requirements

Table 3.2: Equipment Schedule – Community Facility

Equipment	Equipment size	Quantity
General Waste	1100L	1
Food / Organics Waste	240L	2
Commingled Recycling	1100L	2
Cardboard	1100L	2
Secure Destruction – Media Area	240L	1
Medical Waste	Various Sizes	TBD by medical requirements
General Waste – Concourse / Stadium Seating	240L	6 (TBC)
Commingled Recycling – Concourse / Stadium Seating	240L	6 (TBC)
Cooking Oil	400L collection tank (TBC)	(TBC)
Bin lifter		1

3.2. On-going Management

Responsibilities have to be assigned for all on-going refuse management operations. This is generally done by a building manager, staff and / or cleaners. The following lists (Table 3.3 to Table 3.9) are designed to help managing responsibilities and monitor the refuse operations in order to maintain efficient services and a safe environment.

Table 3.3: General Refuse Management Checklist

Objectives	Checked	Remarks
Organising of weekly pick-ups for all refuse streams.		Liaise with private contractors and Council as required.
Managing daily bin transfers between refuse storage / collection areas if required.		
Check bin fill levels and rotate / swap bins as required.		

3.2.1. Safety

Transferring refuse bins and using refuse management equipment are considered hazardous tasks. Therefore, contractors must ensure that a full risk assessment of equipment, surfaces and related gradients is complete. The contractor must provide procedural documentation to appropriate personnel prior to delivery of equipment and occupancy of the development.

Table 3.4: Safety Checklist

Objectives	Checked	Remarks
Abiding by all relevant occupational health and safety legislation, regulations and guidelines to ensure site safety for residents, visitors, staff and contractors.		
Assessment of any manual handling risks and preparation of a manual handling control plan for waste and bin transfers.		
Provision of equipment manuals, training, health and safety procedures, risk assessments and personal protective equipment to staff / contractors in order to control hazards associated with all waste management activities.		

3.2.2. Signage

All receptacles, bins and other refuse management equipment will have adequate signage. Standard signage will be provided in and around waste collection and storage areas (see Appendix D).

Table 3.5: Signage Checklist

Objectives	Checked	Remarks
Ensuring compliance of signage with government local council regulations.		Use signage provided by Council's if available
Ensuring that labelling on bins, refuse room etc. is appropriate and clear and easy to read and updated if required.		

3.2.3. Cleaning and Maintenance

Regular cleaning and maintenance of all refuse management facilities is important to maintain a safe and hygienic environment for residents, visitors, staff and contractors.

Table 3.6: Cleaning and Maintenance Checklist

Objectives	Checked	Remarks
General cleaning of 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		Frequency depends on refuse generation and building operation.
Coordination of specialised cleaning contractors as required.		
Maintenance and servicing of refuse management equipment as per schedule.		Frequency depends on equipment and building operation.
Coordination of specialised equipment contractors as required.		

3.2.4. Refuse Minimisation

Refuse minimisation is an important part of any site operation. At a minimum, the following should be implemented. Additional refuse minimisation options can be found in Appendix C.

Refuse minimisation requires regular reviewing to ensure operational sustainability of refuse volumes, equipment and economic feasibility. It is recommended that refuse weights and movements are noted and reviewed. An external review is usually conducted 12 to 18 months after the implementation of the plan.

Table 3.7: Refuse Minimisation Checklist

Objectives	Checked	Remarks
Regular review of material quantities to avoid over-ordering.		
Consideration of secondary and recycled materials where possible.		
Encouraging refuse minimisation through education and signage (see below).		
Reduce refuse through continuous monitoring and review (see below).		

3.2.5. Education and Communication

On-going education is important to ensure people continue to use the facilities as originally intended. All body corporate and leasing contracts should contain clauses pertaining to waste management arrangements and use of any associated equipment.

Table 3.8: Education and Communication Checklist

Objectives	Checked	Remarks
Communication of refuse management arrangements to residents, staff and contractors as required.		
Consideration of promotional opportunities for any successes e.g. awards programs.		

3.2.6. Monitoring and Review

Regular monitoring and inspections of waste and related equipment and facilities from the development should be conducted by building management or designated staff for maintenance and sustainability.

Table 3.9: Monitoring and Review Checklist

Objectives	Checked	Remarks
Continual monitoring of equipment uses and scheduling to ensure best operational outcomes.		
Regular review of refuse management equipment and facilities such as bin volumes, refuse storage capacities and stormwater management arrangements.		

4 Recommended Design Requirements

This section lists general recommended design requirements for the building and refuse management facilities. They should be considered for optimal refuse management within the development, and to comply with relevant regulations and Council requirements.

4.1. Bin Storage and Bin Servicing Point

The RCV's will access the servicing point as described in Section 2. The bin service point will have the following features:

- Has sufficient access and clearance for the waste and recycling collection vehicles to service the bins, including no overhead obstructions.
- Allows bins to be serviced safely while minimising the impediment to traffic flow during servicing.
- Is clearly separated from car parking bays, footpaths and pedestrian access.
- Is of sufficient size to accommodate the bins.
- 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 clear of speed control devices.
- If serviced from a public roadway:
  - Positioned on a level pad within the site, entire pad not more than 5m from the property boundary and 15m from the crossover, level with the kerbside and adjacent to a driveway or other approved crossover on the public roadway.
  - Connected to the crossover by a paved path so that the bin can be manoeuvred for servicing without lifting the bin over raised surfaces (pram ramp).
  - Not situated within 20m of an intersection or roundabout.
- 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 screened sufficiently 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.

4.2. Refuse Rooms

The refuse room will have the following features in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- Be insect and vermin proof.
- Be fire rated and ventilated in accordance with the National Construction Code – Building Code of Australia.
- Doors must be wide enough to allow for the easy removal of the largest container to be stored.
- The walls, ceilings, floors and equipment are to be designed and constructed of impervious material with a smooth finish to allow for easy cleaning.
- The floors must be graded to fall to a drainage point.
- A hose cock must be provided for cleaning bins and the rooms (see Section 4.3 below).
- Drainage points must be connected to sewer in accordance with trade waste requirements.
- Adequate artificial lighting.
- Not located adjacent to or within any habitable portion of a building or place used in connection with food preparation (including food storage).
- Permit unobstructed access for removal of the containers to the servicing point and for positioning the containers correctly in relation to the refuse chutes (if fitted).
- Will be attractively designed to minimise their visual impact on the surrounding areas.
- Does not have any steps or lips.
- Is enclosed on all sides except for the gated entrance to ensure bins are not visible from a public place, neighbouring properties, passing vehicles or pedestrian traffic external to the site.
- Is of sufficient size to accommodate the bins with sufficient clearance around the combined bin area.
- Is positioned away from entrances to shops or residential premises.
- The height of the bin storage area allows for waste bins to be opened and closed.

4.3. Bin Wash

A bin wash-down facility will need to be provided within the bin storage room or other appropriate area. It will have the following features:

- Constructed hardstand with a solid concrete base.
- Roofed and designed to prevent entry to rainwater.
- Graded to fall to a drainage point that is connected to sewer in accordance with trade waste requirements.
- Provided with a hosecock for cleaning.
- Is in a purpose-built storage area which is air locked, fly and vermin proofed, and used solely for the storage of waste.
- Is in a well-ventilated portion of the basement and not within 10m of an opening to a food premises or food handling area.

4.4. Storm Water Prevention and Litter Reduction

Designated staff / cleaners are responsible for on-site storm water pollution and litter reduction. To limit the impact on the environment and site, the following measures should be taken into account:

- Provide adequate signage to promote litter control.
- Provide sufficient refuse bins in appropriate areas.
- Prevent unauthorised entry to waste areas.
- Monitor waste and prevent waste overflow.
- Promote best practices for waste minimisation.
- Install litter traps in car parks for any unwanted discharge.

4.5. Ventilation

Natural or mechanical ventilation must be provided to waste storage areas unless refrigerated below 4˚C. Natural ventilation means unobstructed, permanent openings direct to external air no less than one-twentieth (1/20) of floor area. Mechanical ventilation requires a minimum rate of 100L/sec and 5L/m^2 exhaust rate.

4.6. Bin Carting

The bin carting route will the following features:

- Is via the hard stand pathways.
- Allows bins to be easily manoeuvred.
- Is clear of speed control devices or similar provisions.
- Does not impede traffic flow.
- Does not extend through any habitable parts of a building or food premises.
- Does not have any lips, stairs or steps for bins to be manoeuvred easily.

If bin moving equipment such as bin tug or bin trailers are required for transferring bins form the bin storage room(s) or chute discharge room(s) to the temporary bin storage or collection room from where bin will be serviced, space has to be provided for storing the bin moving equipment when not in use.

Appendix A Detailed Refuse Calculations

A.1 Refuse Generation Rates

There are no published refuse generation rates for each area of a sporting stadium, therefore TTM have chosen to break down the stadium into its area of uses and used the Local Government area of City of Sydney's *'Guidelines for Waste Management in New Developments'* to provide generation rates based on these areas.

TTM have used an estimate for seating/patron waste generation based on discussion with waste industry contractors and information gathered on similar projects.

Table A.1: Generation Rates

Type	Measure	General Waste	Food / Organic Waste	Commingled Recycling	Source
Player / Social Areas	L / 100m² / Day	15	5	25	City of Sydney - Office
Office / Admin / Media	L / 100m² / Day	15	5	25	City of Sydney - Office
Multi-Purpose Room	L / 100m² / Day	50	20	225	City of Sydney - Restaurant
Café / Kiosk / Bar / Kitchens	L / 100m² / Day	100	100	500	City of Sydney - Restaurant
Retail	L / 100m² / Day	25	5	200	City of Sydney - Retail
Grandstand Seating / Public Area	L / Per Seat	0.5	-	0.5	Estimate

A.2 Refuse Calculations

Table A.2: Refuse Calculations – Centre of Excellence Facility

Level	Description	Quantity	Measure	General Waste (L/Week)	Food Waste (L/Week)	Comingled Recycling (L/Week)
Centre of Excellence - Lower Level	Football Dept	GFA (m^2)	544	571	190	952
	Aquatic Dept	GFA (m^2)	545	572	191	954
	Medical Dept	GFA (m^2)	135	142	47	236
	Gym	GFA (m^2)	915	961	320	1601
Centre of Excellence – Upper Level	Admin Total	GFA (m^2)	529	555	185	926
	Social Total	GFA (m^2)	312	328	109	546
	FOH Total	GFA (m^2)	291	306	102	509
Uncompacted Volumes (L / Event)				**3435**	**1145**	**5724**
Collection and Equipment Details	Collections Per Week			**4**	**4**	**4**
	Equipment Size			1100L	240L	1100L
	Equipment Quantity Required (min)			**1**	**2**	**2**

Table A.3: Refuse Calculations – Community Facility

Level	Description	Quantity	Measure	General Waste (L/Week)	Food Waste (L/Week)	Comingled Recycling (L/Week)	Cardboard (L/Week)
Community Sports Centre – Lower Level	Change Facilities	GFA (m^2)	598	628	209	1047	0
Community Sports Centre – Upper Level	Café	GFA (m^2)	30	210	210	420	630
	Kiosk	GFA (m^2)	18	126	126	441	189
	Kitchen	GFA (m^2)	47	329	329	1152	494
	Bar	GFA (m^2)	30	210	210	735	315
	Function Room	GFA (m^2)	200	700	280	2205	945
	Office / Media Total	GFA (m^2)	83	87	29	145	0
	Retail Tenancy	GFA (m^2)	150	263	53	630	1470
	Seating	Number	1504	752	0	752	0
Uncompacted Volumes (L / Event)				**3305**	**1446**	**7526**	**4043**
Collection and Equipment Details	Collections Per Week			**4**	**4**	**4**	**4**
	Equipment Size			1100L	240L	1100L	1100L
	Equipment Quantity Required (min)			**1**	**2**	**2**	**1**

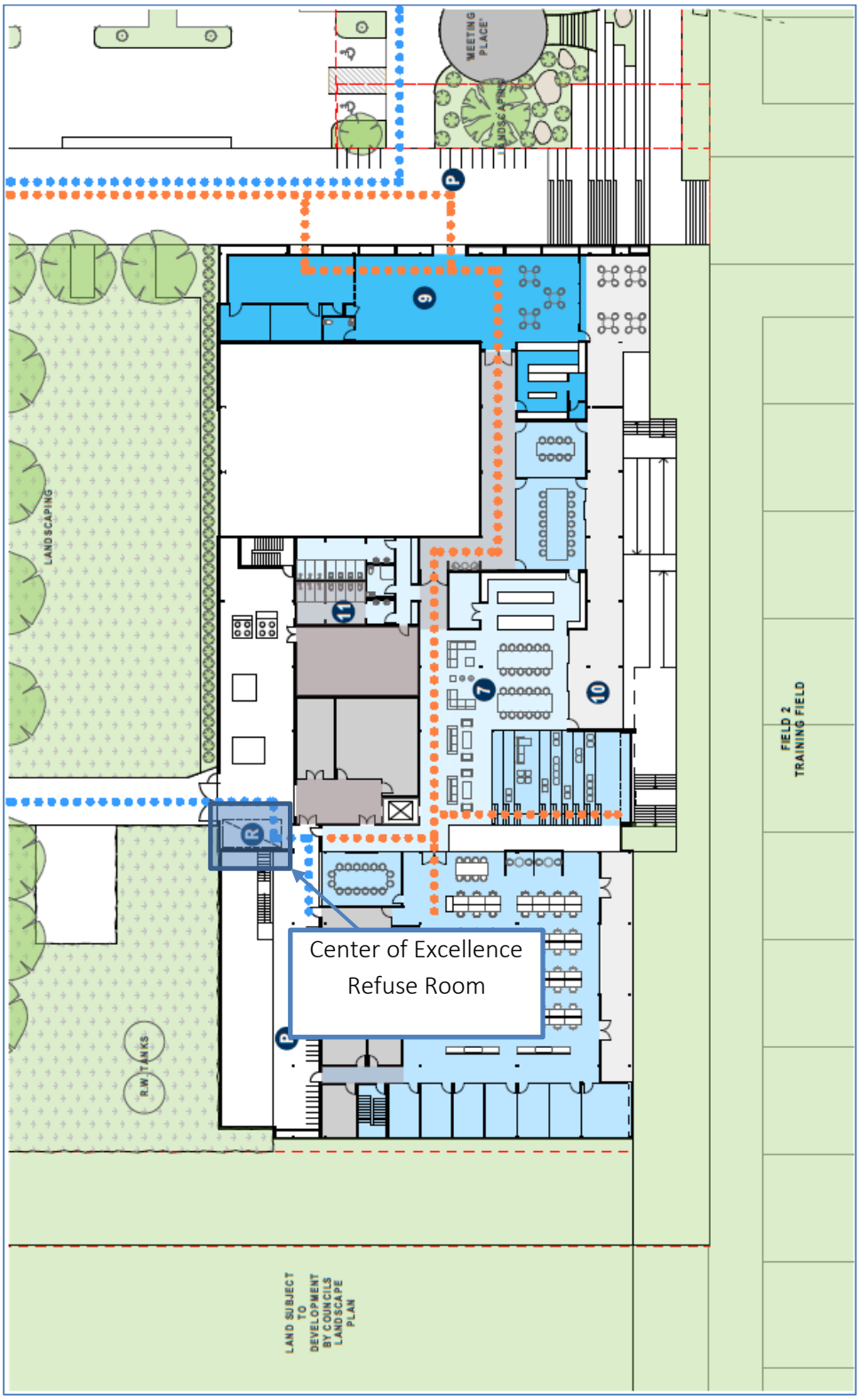
A.3 Refuse Volume to Weight Conversion

Description	Measure	General Waste	Food Waste	Recycling Combined (L/Week)
Total Volumes	L / Week	6739	2591	17293
	m^3 / Week	6.7	2.6	17.3
Conversion Factor *	kg / m^3	150	425	63
Tonnes	T / Week	1.0	1.1	1.2
Tonnes per Year	T / Year	52.7	57.4	64.6
Diversion Potential	-	30%	33%	37%
Waste Levy **	**$ / Year**	$7,748.28	$1,687.91	$3,199.30

* Applies to uncompacted volumes.

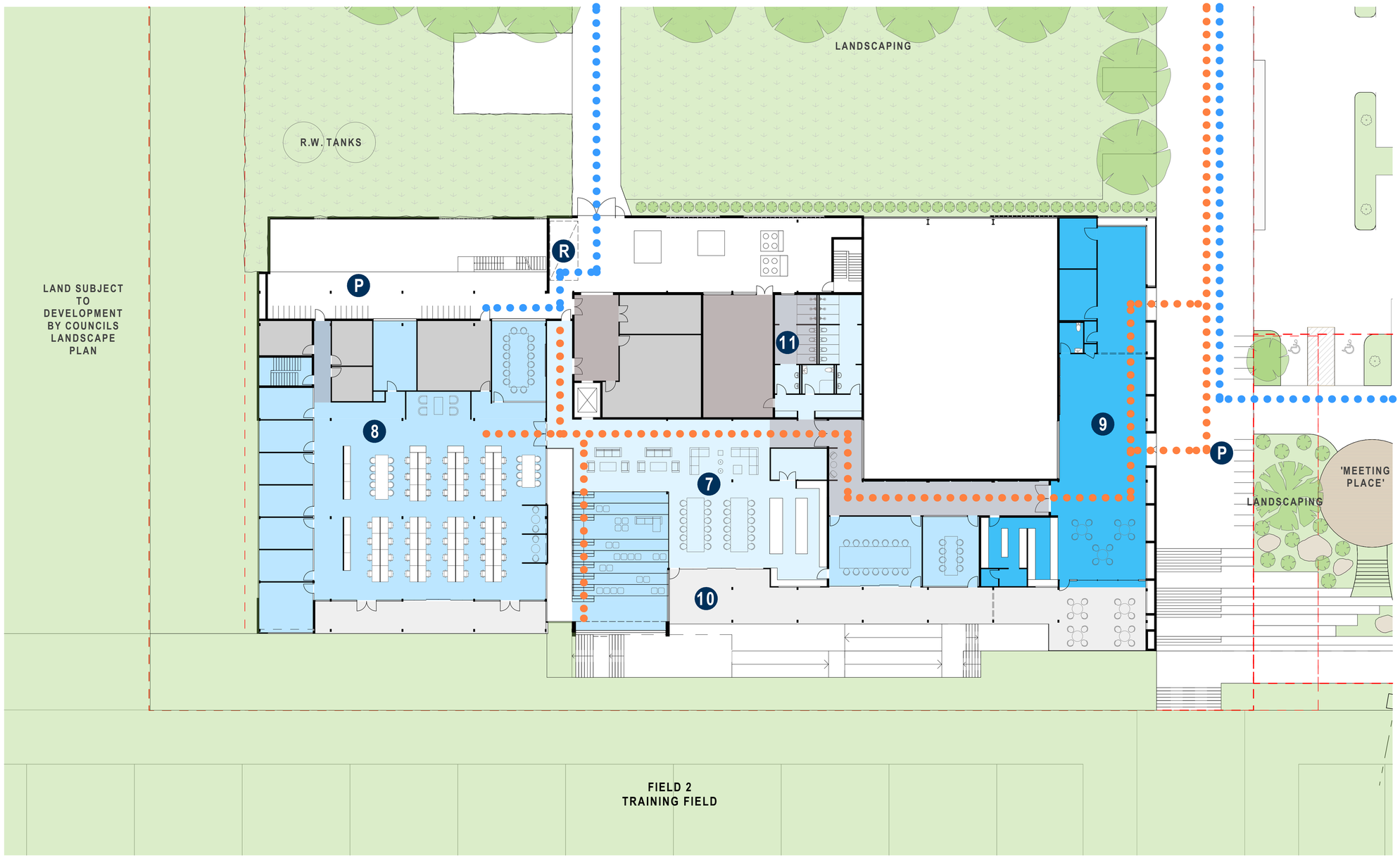
Appendix B Site Plans and Drawings

B.1 Refuse Rooms



source: HB Architecture & Planning, Drawing: A021 Issue: SSDA – C, Date: 22/03/2022, Plan: GA COE UPPER

source: HB Architecture & Planning, Drawing: A025 Issue: SSDA – C, Date: 22/03/2022, Plan: GA COMMUNITY FACILITY UPPER



GA SSDA PLAN UPPER A1

HB ARCH ARCHITECTURE & PLANNING

LEGEND

- PLAYER AMENITIES
- FOOTBALL DEPARTMENT
- CIRCULATION
- PLANT /STORE
- PEDESTRIAN CIRCULATION
- BICYCLE CIRCULATION

7 PNRL EELS SOCIAL CLUB/ KITCHEN
8 ADMINISTRATION OFFICES AND MEETING ROOMS
9 FOH MAIN ENTRY / RECEPTION / RETAIL / CAFE
10 PNRL EELS & MEMBERS BALCONY
11 EOT (END OF TRIP FACILITIES)
P PROPOSED BICYCLE PARKING (TOTAL 53)
R PROPOSED REFUSE AREA

N

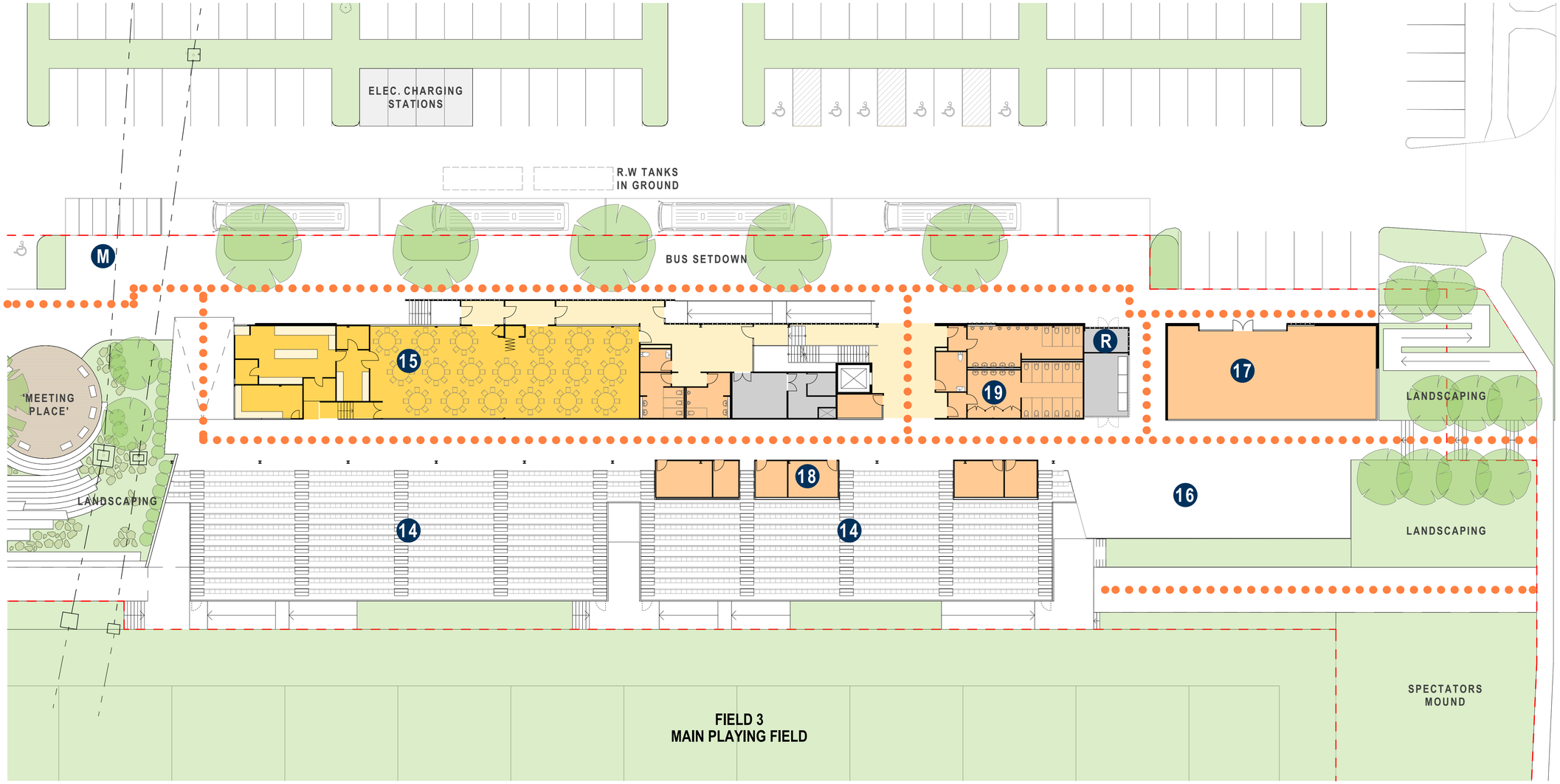
KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

GA COE UPPER PLAN

Client PARRAMATTA EELS
Scale 1:200 @ A1
22/03/2022 SSDA - 'C'

email@hbarch.com.au

A11



HB ARCH ARCHITECTURE & PLANNING

LEGEND

- STORAGE/ PLANT
- AMENITIES
- COMMUNITY/ MULTIPURPOSE SPACE
- CIRCULATION
- PEDESTRIAN CIRCULATION

- 14 GRANDSTAND SEATING - 1500 SEATS
- 15 COMMUNITY/ MULTIPURPOSE SPACE
- 16 CONCOURSE MATCHDAY TERRACE
- 17 TENANCY
- 18 COACHES / MEDIA
- 19 SPECTATOR AMENITIES
- R PROPOSED REFUSE AREA
- M PROPOSED MOTORCYCLE PARKING (7 SPACES)

N

KELLYVILLE PARK PNRL EELS - CENTRE OF EXCELLENCE & COMMUNITY FACILITY

GA COMMUNITY FACILITY UPPER PLAN

Client PARRAMATTA EELS
Scale 1:200 @ A1
22/03/2022 SSDA - 'C'

email@hbarch.com.au

A14

Appendix C Systems and Specifications

C.1 Typical Refuse Bins

Bin Types	Waste Streams	Examples	Information
Residential unit bins	General waste and recycling		Various options and sizes. Built and standalone bin available. Examples: https://www.bunnings.com.au
Back-of-house bins	General waste, recycling, food waste, paper / cardboard		Various options and sizes available. Tenant to supply depending on preference and space available. Example: 60L metro bins Dimensions approx. 559 x 279 x 635mm (L x W x H) Examples: https://www.spacepac.com.au
Caddy Bins	Food Waste		Example: https://pulpmaster.com.au/pulpmaster-caddy-system
60-80L bins	Glass		Dimensions approx. 500 x 460 x 640mm (L x W x H) (60L) 500 x 450 x 840mm (L x W x H) (80L) Example: http://wheeliebinsonline.com.au/product/80-litre-wheelie-bin/
120-140L bins	Food waste, Uncrushed Glass		Dimensions approx. 550 x 480 x 930mm (L x W x H) (dimensions may depend on contractor) Examples: http://wheeliebinsonline.com.au, https://ksenvironmental.com.au
240L bins	General waste, paper, recycling, green waste, food 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
660L bins	General waste, recycling, paper / cardboard		Dimensions approx. 780 x 1260 x 1330mm (L x W x H) (dimensions depend on contractor) Examples: http://www.justwheeliebins.com.au, https://www.australianwastemanagement.com.au

Bin Types	Waste Streams	Examples	Information
			
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.australianwaste management.com.au
Cigarette butt bins / ashtrays	Cigarette butts		Various options and sizes available. Free-standing, wall / bin-mounted or integrated. Examples: https://www.spacepac.com.au, http://www.nobutts.com.au

C.2 Typical Refuse Management Equipment

Systems	Waste Streams	Examples	Information
Organics Household Composting, Worm Farm, Digesters	Food waste / organics	   	Organics / food waste separation, composting and digesting; household-type and commercial grade equipment available Examples Urban Composter https://www.urbancomposter.com.au Closed Loop https://closedloop.com.au/upcycling-products ORCA https://www.feedtheorca.com
Food Waste Processing, Storage and Disposal	Food waste / organics	  	Volume reduction and organics / food waste recycling through food waste separation and macerating Examples: Pulpmaster Food Processing and Storage https://pulpmaster.com.au Under-sink food waste macerators and disposers
Cooking oil storage and recycling	Used cooking oil	 	Cooking oil recycling Example: https://www.cookers.com.au Cooking oil delivery, used oil collection and provision of required equipment

Systems	Waste Streams	Examples	Information
			
Bunded pallets	Liquid Waste		Spill containment, e.g. for waste cooking oil containers Example: https://www.tradeenviro.com.au/bunded-pallets https://www.materialshandling.com.au/products/bunded-pallet
Balers	Paper / cardboard, plastics		Volume reduction of paper, cardboard, plastics by compaction (baling) Examples: https://www.miltek.com.au/balers-and-compactors https://www.wastech.com.au/products/balers https://wasteinitiatives.com.au/product/vertical-balers/wastepac-60
Compactors / bin presses	General waste		Volume reduction through refuse compaction Examples: Under-chute compactor https://www.wastech.com.au/products/chutes/ecopac-compactor Bin press https://wasteinitiatives.com.au/products/waste-compactors

Systems	Waste Streams	Examples	Information
Glass bottle crushing	Glass (bottles)	 	Volume reduction of glass bottles by crushing Example: http://www.bottlecycler.com
Trolleys	General waste, recycling, food waste, paper / cardboard		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
Bin tugs / trailers	-	 	Assisted transfer of refuse Examples: http://ev.spacepac.com.au/categories/tugger, https://www.spacepac.com.au/product/wheelie-bin-aluminum-steel-trailers

C.3 Refuse Transfer and Disposal Methods

Method	Examples	Description
Manual transfer / disposal	   	**Manual transfer** is simply the process of physically carrying waste bags, food waste receptacles or recycling boxes and crates without assistance. From a safety perspective, this is acceptable for small quantities and initial disposal into refuse chutes, refuse compartments or, in the case of ground level activities, directly into the refuse storage room. • **Waste** material should be bagged prior to any transfer from apartments, suites, offices, back-of-house areas etc. to waste storage compartments or rooms. • **Food waste** should be placed in receptacles such as a caddy style bin or bucket which will not allow leakage during transfer. • **Recycling** material should be placed in boxes or crates prior to transfer. • **Cardboard and paper** items can be placed within another cardboard box for transfer. Examples: https://www.alamy.com
Assisted manual transfer	  	**Assisted manual transfer** includes the use of any wheeled container, wheelie bin or trolley with a capacity to carry refuse items with a combined weight of 20kg and above. The equipment bares the weight of the material, but it still requires physical force and or balance to move the bin or trolley. From a safety perspective, this type of equipment should be a minimum requirement for transfer of material greater than 20kg and when transferring between individual levels to the refuse storage room or loading areas. Use of enclosed or caged equipment will also eliminate 'litter or leakage trails' which can occur when using open or unsealed equipment. Examples: http://www.justwheeliebins.com.au, https://rubbermaidcommercial.com.au, https://www.materialshandling.com.au
Assisted transfer	  	**Assisted transfer** includes the use of any container with capacity to carry 20kg or more, pushed or towed by mechanical or electrical self-propelling equipment. Examples: http://ev.spacepac.com.au/categories/tugger, https://www.spacepac.com.au/product/wheelie-bin-aluminum-steel-trailers

Method	Examples	Description
Sealed transfer		**Sealed transfer** typically relates to the use of automated front end (pump) or back end (vacuum) equipment moving material through service pipes to a central tank or bulk storage or compaction equipment. Use of systems directly related to food waste processing and transfer are a cost-effective alternative and provide significantly less invasive requirements to build into final design and intrastate. Examples: https://pulpmaster.com.au

C.4 Refuse Minimisation Options

Systems	Description
Container deposit schemes	Container deposit / refund schemes are currently in place in several states in Australia. Various models exist including bottle return facilities and (automated) reverse vending machines. Residents, tenants, staff and cleaners should be encouraged to separate containers that qualify for the schemes from the waste or recycling streams, and return them to one of the return points. Storage space or dedicated bins within tenancies, apartments or communal areas should be provided. For larger developments or precincts where large amounts of empty containers are expected, consideration may be given to an on-site return point. The return points should be located near recycling bins so that cardboard boxes or plastic bags that have been used to transfer the empty containers to the return point can be disposed appropriately. This can prevent cluttering of the area around the return point. The images below show a typical return point and containers that commonly qualify for a deposit refund.    Sources: https://returnandearn.org.au, https://envirobank.com.au/bottle-and-can-recycling-queensland, https://www.containersforchange.com.au/how-it-works
Glass crushing	Bottle crushers can reduce back-of-house and refuse room storage volumes by up to 80%. The machines are quiet and efficient. The inclusion of a glass crusher may either be designed into bar or kitchen areas, placed in back-of-house areas, or a machine may take the place of an existing recycling bin within a refuse storage room. Scanners are also being developed for these machines for scanning of bottles prior to crushing to align with government bottle return schemes. The images below show a typical setting of a glass crusher in a bar. 

Systems	Description
	  Sources: http://www.insideenterprises.com.au/bottlecycler/index.html, http://www.bottlecycler.com
Baling	Balers should be a consideration for use in reducing refuse volumes and creating safe environments by removing cardboard and plastic film which tends to overflow bins and clog up refuse room floors and doorways. The images below show a typical small baler that will produce a 60kg bale, easily removable by a trolley, as well as an option for multi chamber baler for baling multiple products.  Source: https://www.miltek.com.au/balers-and-compactors

C.5 Refuse Management Equipment Suppliers

Waste Management Equipment	Balers	Compactors	Shredders	Glass Crushers	Bin Tugs / Trailers	Trolleys / Manual Handling Equipment	Bin Lifters / Tippers	Bin Rotation	Weighing Systems	Spill Containment, Spill Response, Absorbents, Drain Protection	Food Waste Management / Vacuum Systems, Pulping, Digestors	Composting	Waste Cooking Oil Systems	Smoking Management	Bins (General), Bin Stands	Bin Cleaning Equipment
Elephants Foot Recycling Solutions http://www.elephantsfoot.com.au	✓	✓		✓			✓	✓	✓							
Waste Initiatives https://wasteinitiatives.com.au	✓	✓	✓	✓												
Wastech http://wastech.com.au	✓	✓	✓					✓								
Pakmor http://pakmor.com.au	✓	✓	✓				✓		✓							
Miltek http://www.miltek.com.au	✓	✓														
BottleCycler http://www.bottlecycler.com				✓												
Materials Handling https://www.materialshandling.com.au					✓	✓	✓			✓					✓	✓
Spacepac http://ev.spacepac.com.au					✓	✓										
Spacepac Solutions http://www.spacepac.com.au					✓	✓								✓	✓	
Draffin https://draffin.com.au							✓							✓	✓	
Electrodrive / Lift Master http://www.electrodrive.com.au					✓		✓									
Absorbenviro http://www.absorbenviro.com.au										✓						
Trade Environmental http://www.tradeenviro.com.au										✓						

Waste Management Equipment	Balers	Compactors	Shredders	Glass Crushers	Bin Tugs / Trailers	Trolleys / Manual Handling Equipment	Bin Lifters / Tippers	Bin Rotation	Weighing Systems	Spill Containment, Spill Response, Absorbents, Drain Protection	Food Waste Management / Vacuum Systems, Pulping, Digestors	Composting	Waste Cooking Oil Systems	Smoking Management	Bins (General), Bin Stands	Bin Cleaning Equipment
Spillstationaustralia www.spillstation.com.au										✓						
Pulpmaster http://pulpmaster.com.au											✓					
Australian Vacuum Systems http://www.australianvacuumsystems.com.au											✓					
Meiko https://www.meiko.com.au											✓					
Closed Loop Organics https://closedloop.com.au/upcycling-products,												✓				
Compost Revolution https://compostrevolution.com.au												✓				
Urban Composter https://www.urbancomposter.com.au												✓				
ORCA Digester https://www.feedtheorca.com												✓				
Cookers https://www.cookers.com.au													✓			
Rubbermaid https://rubbermaidcommercial.com.au/products/waste-management						✓				✓				✓	✓	
Sulo http://www.sulo.com.au						✓						✓			✓	
Australian Waste Management https://www.australianwastemanagement.com.au/products							✓								✓	

C.6 Refuse Management Service Providers

Specialist Waste Services	Food Waste	Waste Cooking Oil	Hazardous Waste	Liquid Waste	Electronic Waste	Industrial Waste	Construction & Demolition Waste	Waste Water	Secure Document Destruction
Cleanaway * https://www.cleanaway.com.au		✓	✓				✓	✓	
JJ Richards * https://www.jjrichards.com.au		✓	✓	✓		✓	✓	✓	
Veolia * https://www.veolia.com/anz			✓	✓	✓		✓	✓	✓
Suez * https://www.suez.com.au				✓	✓		✓	✓	
SecondBite https://www.secondbite.org	✓								
OZ Harvest https://www.ozharvest.org	✓								
Cookers https://www.cookers.com.au		✓							
ToxFree https://www.toxfree.com.au			✓		✓	✓			
AceWaste https://www.acewaste.com.au			✓			✓			

Appendix D Refuse Signage

D.1 Refuse Signage

Waste signage guideline are provided by the Queensland government: https://www.qld.gov.au/environment/pollution/management/waste/recovery/recycling/signage.

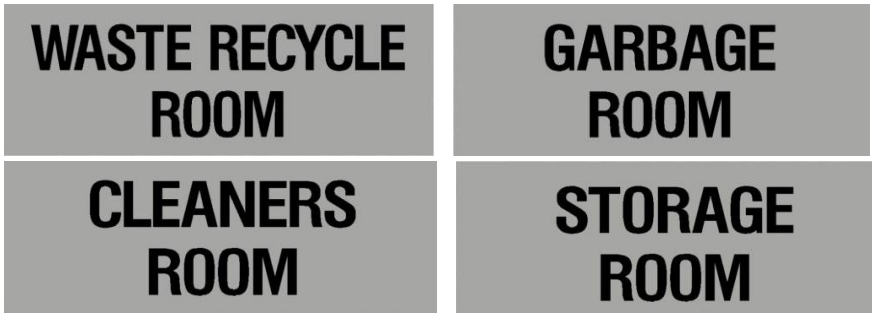
General Refuse Signage

Other Refuse Signage

D.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 E Terms and Abbreviations

In this OWMP, 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 1.00m³ to 4.50m³ 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 Collection Vehicle	RCV	A vehicle specifically designed for collecting and emptying refuse bins and refuse compactors.
Refuse Storage Room		An area identified for storing on-site MGBs or Bulk Bins within the property.
Refuse Tolley		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.

TERM	ABBREVIATION	DEFINITION
Transfer (Manual Transfer)		Manual transfer means physical transfer of refuse material and associated bulk bins or trolleys without assistance.
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.
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.