



UNSW Health Translation Hub
Corner of Botany & High Streets, Kensington

OPERATIONAL WASTE MANAGEMENT PLAN

2/03/2021
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Revision E

Client

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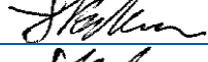
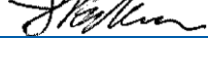
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SCOPE

This waste management plan (WMP) only applies to the **operational** phase of the proposed development; therefore the requirements outlined in this WMP must be implemented during the operational phase of the site and may be subject to review upon further expansion for, and/or changes to the development.

The waste management of the **construction** phase of the development are not addressed in this report. A Construction WMP has been provided separately by Elephants Foot Recycling Solutions (EFRS).

REVISION REFERENCE

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B	9/12/2020	J Parker	A Armstrong	Amendment	
C	2/02/2021	J Parker	A Armstrong	Amendment	
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GLOSSARY OF TERMS

TERM	DESCRIPTION
<i>Baler</i>	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by strapping
<i>Collection Area/Point</i>	The identified position or area where garbage or recyclables are actually loaded onto the collection vehicle
<i>Compactor</i>	A machine for compressing waste into disposable or reusable containers
<i>Composter</i>	A container/machine used for composting specific food scraps
<i>Crate</i>	A plastic box used for the collection of recyclable materials
<i>Garbage</i>	All domestic waste (Except recyclables and green waste)
<i>Green Waste</i>	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers
<i>Hopper</i>	A fitting into which waste is placed and from which it passes into a chute or directly into a waste container. It consists of a fixed frame and hood unit (the frame) and a hinged or pivoted combined door and receiving unit
<i>L</i>	Litre(s)
<i>Liquid Waste</i>	Non-hazardous liquid waste generated by commercial premises that is supposed to be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste)
<i>LRV</i>	Large rigid vehicle described by AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities as heavy rigid vehicle (HRV)
<i>Mobile Garbage Bin(s) (MGB)</i>	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 360, 660, 1000 or 1100
<i>MRV</i>	Medium rigid vehicle
<i>Putrescible Waste</i>	Component of the waste stream liable to become putrid. Usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
<i>Recycling</i>	Glass bottles and jars – PET, HDPE and PVC plastics; aluminium aerosol and steel cans; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines
<i>Refuse</i>	Material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items
<i>SRV</i>	Small rigid vehicle as in AS 2890.2-2002 Parking facilities – Off-street commercial vehicle facilities, generally incorporating a body width of 2.33

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INTRODUCTION

EFRS has been tasked to prepare the following waste management plan for UNSW for the operational management of waste generated by the UNSW Health Translation Hub development located on the corner of Botany and High Streets, Randwick.

Waste management strategies and auditing are a requirement for new developments to provide support for the building design, and promote strong sustainability outcomes for the building. It is EFRS's belief that a successful waste management strategy contains three key objectives:

- i. **Promote responsible source separation** to reduce the amount of waste that goes to landfill, by implementing convenient and efficient waste management systems
- ii. **Ensure adequate waste provisions and robust procedures** that will cater for potential changes during the operational phase of the development
- iii. **Compliance** with all relevant council codes, policies, and guidelines.

To achieve these objectives, this WMP identifies the different waste streams likely to be generated during the operational phase of the development. Associated information includes: how the waste will be handled and disposed of, details of bin sizes/quantities and waste rooms, descriptions of the proposed waste management equipment used and information on waste collection points and frequencies.

It is essential that this waste management plan is integral to the overall management of the building and clearly communicated to all relevant stakeholders.

DESCRIPTION OF PROPOSED DEVELOPMENT

This report supports a State Significant Development Application (SSDA) for the proposed UNSW Health Translation Hub (UNSW HTH) at the Randwick Hospitals Campus (RHC), which is submitted to the Department of Planning, Industry and Environment (DPIE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act). Health Infrastructure on behalf of Health Administration Corporation (HAC) is the applicant for the UNSW HTH, which will be delivered with the University of New South Wales (UNSW).

The UNSW HTH forms an extension of the existing and proposed hospital facilities at the RHC, providing a specialist health-related research and education facility on the Campus.

BACKGROUND

A partnership agreement has been established between HAC and the UNSW to develop the UNSW HTH. This partnership will also allow UNSW to operate the building as well as manage its design and delivery.

The partnership will bring together educational and medical researchers, clinicians, educators and public health officials to drive excellence, and support the rapid translation of research, innovation and education into improved patient care. It will strengthen the symbiotic relationship between UNSW and the RHC and its research institutes and broader health partners which form part of the Randwick Health and Innovation Precinct (RHIP).

The UNSW HTH will build on the existing affiliation between UNSW and the Sydney Children's Hospital Network (SCHN); Health Infrastructure; and the South Eastern Sydney Local Health District, including Prince of Wales Hospital, The Royal Hospital for Women and Eastern Suburbs Mental Health Services.

DEVELOPMENT OVERVIEW

The proposal involves the expansion of the existing and proposed hospital facilities at the RHC to provide ancillary health research and education uses. This will be in the form of a single building which will be physically connected (at podium level) to the neighbouring Sydney Children's Hospital Stage 1 and Children's Comprehensive Cancer Centre (SCH Stage 1 and the CCCC) redevelopment.

Specifically, the SSDA seeks approval for:

- Relevant site preparation, excavation and enabling works.
- Construction and use of a new, 15-storey building accommodating research and health education uses, comprising:
 - One basement level; and
 - A total GFA of approximately 35,600sqm, including health-related research, education and administrative floor space.
- Pedestrian link bridges connecting the UNSW Kensington Campus to the RHC, via the Wallace Wurth Building to the UNSW HTH and through to the SCH Stage 1 and the CCCC.
- Landscaping and public domain works, including the creation of over 2,500 sqm of new publicly accessible open space within the eastern portion of the site, sitting between the UNSW HTH and the SCH Stage 1 and the CCCC redevelopment.
- Building signage.
- Stratum subdivision.
- Services and utilities augmentation as required.

OPERATION AND FUNCTION OF THE UNSW HTH

The UNSW HTH will be an expansion of the RHC to accommodate new health related education, research, and administrative facilities. It will include:

- Purpose-built spaces for health educators and researchers to work alongside clinicians.
- Floor plates for health translation research focused work with physical connections to the SCH Stage1 and the CCCC and wider Randwick Hospitals Campus.
- Dedicated facilities for the CCCC directly linking the UNSW HTH with the SCH Stage 1 and the CCCC.
- An education hub, including education and training rooms allowing hospital staff to educate and train UNSW medical students.
- Facilities for education, training, research, seminars and industry events.
- Clinical schools for the Women's and Children's Health, Psychiatry and Prince of Wales Hospital.
- Ambulatory care clinics including in neurosciences, public and population health.
- Supporting facilities including retail premises.

SITE LOCATION

The site is located approximately 6 kilometres (km) from the Sydney Central Business District (CBD), within the Randwick Local Government Area (LGA). It is located approximately 4km from Sydney Airport. **Figure 1** provides a regional context map of the site showing its location in relation to the Sydney CBD and surrounding centres.

This block sits in between the existing Randwick Hospitals Campus and the UNSW Kensington Campus, and directly adjacent to the CBD and South East Light Rail service which runs along High Street (**Figure 2**). The site of the proposed UNSW HTH has an area of 8,897square metres (sqm).

The site has been subject to some site preparation and early works associated with the broader development of the block. Adjacent to the site, along the High Street and Botany Road frontages, runs a 6-metre (m) wide stormwater and sewage easement.

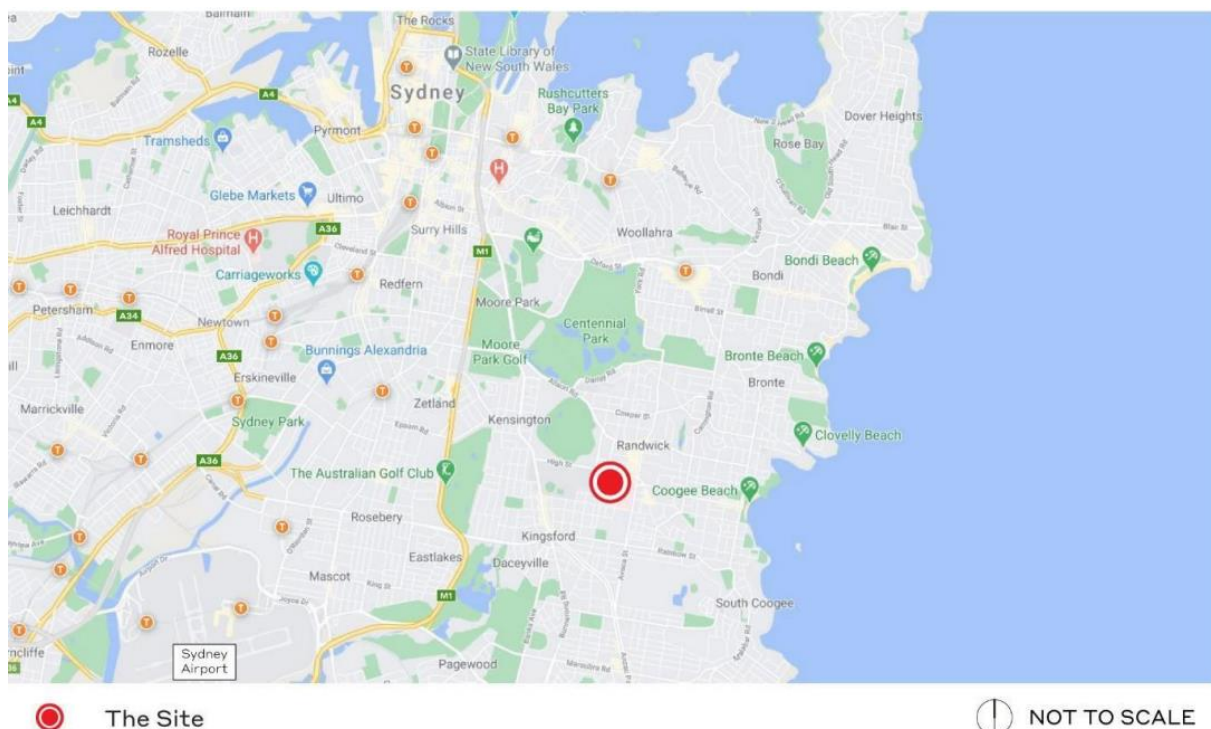


Figure 1 – Site context

Source: Google maps and Ethos Urban

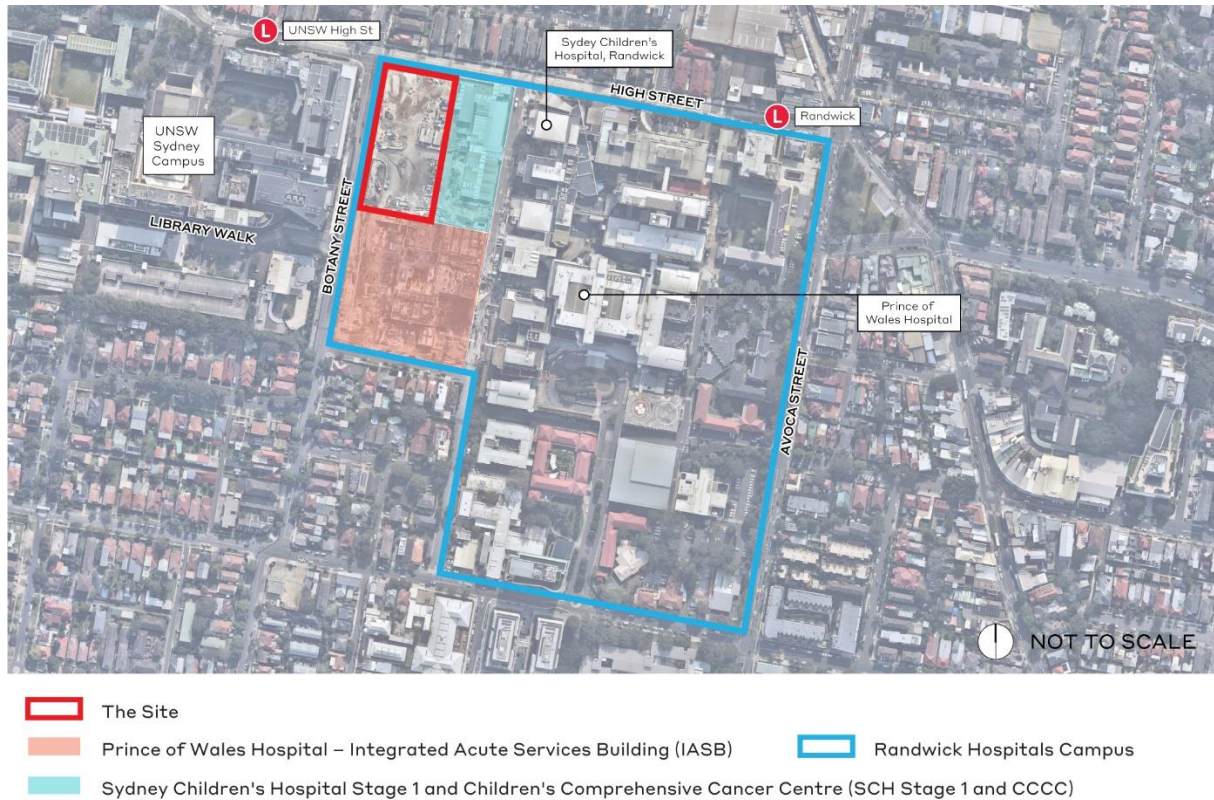


Figure 2 – Site aerial

Source: Nearmaps and Ethos Urban

STAKEHOLDER ROLES AND RESPONSIBILITIES

The following table demonstrates the primary roles and responsibilities of the respective stakeholders:

Table 1: Stakeholder Roles and Responsibilities

Roles	Responsibilities
The University of New South Wales	- Ensuring that all waste service providers submit monthly reports on all equipment movements and waste quantities/weights; - Organising internal waste audits/visual assessments on a regular basis; and - Manage any non-compliances/complaints reported through waste audits. - Conduct reviews of waste management procedures and waste management related sustainability goals.
Facility Manager or Waste Caretaker	- Ensuring effective signage, communication and education is provided to occupants, tenants and cleaners; - Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; - Ensuring site safety for students, children, visitors, staff and contractors; - Abiding by all relevant OH&S legislation, regulations, and guidelines; - Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers; - Preventing storm water pollution by taking necessary precautions (securing bin rooms, preventing overfilling of bins) - Cleaning and transporting of bins as required; - Organising, maintaining and cleaning the general and recycled waste holding area; - Organising both garbage and recycled waste pick-ups as required; - Organising replacement or maintenance requirements for bins; - Organising bulky goods or other speciality collections when required; and - Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Students, Staff and Visitors	- Dispose of all garbage and recycling in the allocated MGBs provided; - Ensure adequate separation of garbage and recycling; and - Compliance with the provisions of Council and the WMP.
Cleaners and Waste Maintenance Staff	- Transporting of bins from their operational location to the collection bins as required; - Cleaning around bin storage areas; - Ensuring adequate separation of garbage and recycling; and - Acting in compliance with the Western Sydney University's Environmental Management Procedures regarding waste.
Waste Contractor	- Provide a reliable and appropriate waste collection service; - Provide feedback to building managers in regards to contamination of recyclables; and - Work with building managers to customise waste systems where possible.
Gardening/Landscaping Contractor	Removal of all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	Removing all construction related waste offsite in a manner that meets all authority requirements.

EDUCATION

UNSW's Facilities Management is responsible for creating, implementing and managing waste management education. Waste education within the building should be consistent with the waste education process implemented across the campus.

Information regarding waste and recycling policies should be provided to all staff, students and tenancies.

Educational material encouraging correct separation of garbage and paper recycling items should be provided on each bin. It is recommended that information is provided in multiple languages to support correct practises and minimise the possibility of contamination in the collective waste bins.

Waste management information should be available on the Sustainability UNSW web page for staff and students. Waste management responsibilities for contractors should be covered in the university induction course.

LIMITATIONS

The purpose of this report is to document a Waste Management Plan (WMP) as part of a development application and is supplied by Elephants Foot Recycling Solutions (EFRS) with the following limitations:

- Drawings, estimates and information contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by the client, and third parties including Council and government information. The assumptions based on the information contained in the WMP is outside the control of EFRS;
- the figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building managements approach to educating staff and students regarding waste management operations and responsibilities;
- the building manager will make adjustments as required based on actual waste volumes (if waste is greater than estimated) and increase the number of bins and collections accordingly;
- the report will not be used to determine or forecast operational costs or prepare any feasibility study or to document any safety or operational procedures;
- the report has been prepared with all due care however no assurance or representation is made that the WMP reflects the actual outcome and EFRS will not be liable to you for plans or outcomes that are not suitable for your purpose, whether as a result of incorrect or unsuitable information or otherwise;
- EFRS offer no warranty or representation of accuracy or reliability of the WMP unless specifically stated;
- any manual handling equipment recommended should be provided at the recommendation of the appropriate equipment provider who will assess the correct equipment for supply;
- Design of waste management equipment and systems must be approved by the supplier.

UNIVERSITY BUILDING WASTE MANAGEMENT

The New South Wales Environmental Protection Authority *Better Practice Guide for Resource Recovery* (2019) and operational waste data from the laboratory facilities at Sydney Science Park have been referenced to calculate the predicted volume of waste generated by the development.

Calculations are based on generic figures; waste generation rates may differ according to the site's waste management practice.

ESTIMATED GARBAGE & RECYCLING VOLUMES AND PROVISIONS

The following table shows the estimated volume (L) of garbage and recycling generated by the development. Hazardous and controlled waste generated by the laboratory areas are not included in the calculations below. A seven-day operating week has been assumed for clinical areas, with a six-day operating week assumed for retail, education and workplace areas.

Table 2: Calculated Waste Generation – Laboratories

Level	Type	GFA (m ²)	Garbage Generation Rate (L/100m ² /day)	Generated Garbage (L/week)	Recycling Generation Rate (L/100m ² /day)	Generated Recycling (L/week)
Ground	Workplace	410	10	246	15	369
	Education	550	10	330	25	825
	Retail	260	100	1560	120	1872
Mezzanine	Clinical	700	10	490	10	490
	Workplace	700	10	420	15	630
Floor 1	Optom	410	19	461	31	769
	Clinical	600	10	420	10	420
	Education	860	10	516	25	1290
	Clinical	1065	10	746	10	746
Floor 2	Clinical	1605	10	1124	10	1124
	Clinical	650	10	455	10	455
	Workplace	790	10	474	15	711
Floor 3	Workplace	3340	10	2004	15	3006
Floor 4	Workplace	1810	10	1086	15	1629
	Workplace	1470	10	882	15	1323
Floor 5	Workplace	880	10	528	15	792
	Workplace	645	10	387	15	581
	Workplace	710	10	426	15	639
Floor 6	Workplace	310	10	186	15	279
	Workplace	1055	10	633	15	950
Floor 7	Workplace	1500	10	900	15	1350
	Education	330	10	198	25	495
Floor 8	Workplace	1815	10	1089	15	1634
Floor 9	Workplace	1850	10	1110	15	1665
Floor 10	Workplace	1850	10	1110	15	1665
Floor 11	Workplace	1850	10	1110	15	1665
Floor 12	Workplace	1850	10	1110	15	1665
Floor 13	Workplace	390	10	234	15	351
	TOTAL	30255		20234		29387
Collections & Equipment		Bin Size (L)		660	Bin Size (L)	660
		Garbage Bins per Week		31	Recycling Bins per Week	45
		Collections per Week		7	Collections per Week	7
		Total Garbage Bins Required		5	Total Recycling Bins Required	7

LABORATORY AREAS

The laboratory managers will be responsible for overseeing the management of all laboratory waste including hazardous and controlled waste.

Laboratory waste such as laboratory glass, sharps, contaminated solids, hazardous chemicals, cytotoxic waste, radioactive waste and biological wastes must be stored and disposed of according to specific industry-based regulations. Correct segregation and containment of all wastes is required under the Waste Act. It is anticipated that waste of this nature will be nil/minimal here due to the laboratory areas being dry laboratories.

General Waste and recycling bins will be placed in various locations throughout each of the laboratories and will be collected by the cleaners at the end of the day.

Depending on the laboratory operations, containers for the storage of laboratory glass, sharps, contaminated solids, hazardous chemicals, cytotoxic waste, radioactive waste and/or biological wastes will be located in each laboratory space and will be managed by the laboratory managers.

The number of bins and waste containers for hazardous and controlled waste produce by laboratory operations will need to be determined by laboratory management prior to, and throughout operation.

It is recommended that each laboratory space has a designated area for the storage of hazardous and controlled laboratory waste.

Any area for the storage hazardous or controlled waste within the laboratories are to be free from odour and must discourage the harbourage of vermin.

The laboratory waste storage areas should be located away from food and clean storage areas, it must not be accessible to the public, have a lockable door and rigid impervious flooring. Clean up facilities, spills kits, appropriate drainage and bunding should be provided. Where wastes are stored in bins the bin must be locked and a specific area, with adequate drainage, for washing equipment should be designated.

Any liquid waste drained to sewer must be done so in accordance with the relevant water board (Sydney Water). Where a dilution pit is required, an application must be submitted to Sydney Water via the Sydney Water Tap in™ service.

All staff and students who work within the laboratories will be required to comply with all relevant waste procedures.

Information provided in this waste management plan regarding operations of the laboratories is indicative. Laboratory disposal guidelines will be developed separate to this operational waste management plan and should be referred to for the correct waste disposal procedures.

The management strategies and waste containers for each laboratory waste stream are discussed in the following table:

Table 3: Storage and Collection Requirements for Laboratory Waste

Waste Type	Waste Collection	Waste Container Example
Domestic Waste	Domestic waste will be disposed of in a normal garbage bin (the bin is lined with a plastic bag). This waste is removed by the cleaning staff. Under no circumstances should chemical waste, sharps or broken glass be placed into a normal garbage bin.	
Recycling	Combustible materials should be minimised within a laboratory. Cardboard boxes and paper-based packaging should be folded flat and then placed in the paper recycling.	
Laboratory Glass	Laboratory glass should be decontaminated as much as possible. For example, Pasteur pipettes can be rinsed before being placed in the laboratory glass bin. Broken glass should be placed in the labelled glass bin located in each laboratory. All glass bins must have lids. When the laboratory glass bin is $\frac{3}{4}$ full, the lid should be placed on the bin and the contents transferred to the larger solid waste bins. Either the laboratory manager or the building manager should be contacted for assistance with disposing of laboratory glass when the bin is approximately $\frac{3}{4}$ full.	
Contaminated Glass	Under NO circumstances may contaminated glass be placed into recycling bins. Any glassware that has been contaminated with biohazardous material must either be autoclaved in a metal bin before placing in the laboratory glass disposal bin or placed directly into a contaminated sharps bin, depending on laboratory guidelines. For example, Pasteur pipettes contaminated with blood can be placed directly into a sharps waste container. Glass that is contaminated with hazardous chemicals must be disposed of as contaminated waste. Under NO circumstances can contaminated glass containers or laboratory glass such as beakers, volumetric flasks or other Pyrex items be placed into recycling bins. Where	

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	possible sample vials should be rinsed and reused or disposed as contaminated laboratory glass. The laboratory manager is responsible for disposing of the contaminated glass in accordance with Laboratory Guidelines	
Sharps	Any sharps (syringes with needles, razor-blades, scalpel blades and small pieces of broken glass) should be disposed of in approved yellow sharps container. Sharps container should be located adjacent to the work area where sharps are used. All sharps containers should be assessed for compliance with the current NSW Health Infection Control Policy and the relevant Australian Standard. When the sharps residue container is filled to the black line, the container should be sealed and labelled. The laboratory manager is responsible for disposing of the sharps container in accordance with Laboratory Guidelines.	
Contaminated Solids	Contaminated solids such as gloves, tissues, sample vials and paper that are contaminated with hazardous material must be placed into a contaminated solids bin, these are to be disposed of as hazardous waste. The laboratory manager is responsible for disposing of the contaminated solids in accordance with Laboratory Guidelines.	
Hazardous Chemicals	Chemical waste may take the form of solvents, aqueous solutions and dry powders and unwanted old chemicals. The MSDS for each chemical must be checked to ensure that the materials being disposed of are compatible with one-another. Mixing of chemicals should be avoided as unexpected reactions may occur. Waste containers displaying signs of such a reaction (bulging) must be dealt with immediately. The waste container should be compatible with the residue material placed within. If the waste is a liquid, residue containers are approved strong, plastic sealable containers, no larger than 5 litres. Chemical substances must never be disposed of via drains, all enquiries regarding waste discharged through the sewer system must be directed to laboratory management. Chemical waste should be segregated according to its properties, such as; acidic/alkaline, aqueous/dry, halogenated/non-halogenated, etc. Hazardous chemical waste should be labelled accordingly.	 5L HDPE residue container (approved)  5L App Dangerous Goods container

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	The laboratory manager is responsible for disposing of the hazardous chemicals in accordance with Laboratory Guidelines.	
Cytotoxic Waste	Cytotoxic waste generated within a lab must be placed within an approved purple cytotoxic bag or container. When this container is full, it is to be placed in a locked purple cytotoxic waste wheelie bin. Once the larger wheelie bin is full, its collection should be organized through laboratory management.	
Biological Waste	Solid biological waste is to be placed into plastic biohazard containers lined with plastic bags, both of which are to be marked with the international biohazard symbol and the word "biohazard". Full biohazard containers are to be sealed and stored in designated storage areas until they are shipped for proper final disposal via a third-party vendor. Liquid biological waste is to be collected by the laboratory in labeled waste flasks or beakers, then decontaminated and disposed of inside the laboratory. Any contaminated biological waste is to be treated as hazardous waste. The laboratory manager is responsible for disposing of the biological waste in accordance with Laboratory Guidelines.	 

WORKPLACE AREAS

Typically, bins for general waste and recycling are positioned next to each worker's desk or workstation. Bins for garbage and recyclables are also located centrally in each office, generally in the kitchen area and printer room.

The cleaners circulate around the workplace after normal office hours and perform cleaning tasks. At this time, the cleaners will empty the garbage and recycling bins into bags which they transport around the offices in a cart which is also used to store cleaning products, spare bags, PPE and consumables.

The cleaners will be responsible for transporting the garbage and recycling to the waste room on basement level 1 and placing it into the appropriate bin.

COLLABORATION, MEETING ROOMS AND COMMON AREAS

The collaboration areas, meeting rooms and circulation areas will be supplied with suitably branded garbage and recycling bins, where considered appropriate. Building management or cleaners will monitor use and ensure bins are exchanged and cleaned. Garbage and recycling receptacles should be placed in convenient locations.

EXHIBITION AREAS

Suitably branded bins for garbage and recycling will be allocated to the exhibition, function and event spaces to be utilised when these areas are in use. The frequency of these bins will depend upon the type of event and frequency of use. Each of these bins will be emptied by the contract cleaners during their cleaning routine after these areas have been used.

As with office waste, cleaners empty the bins into bags which they transport around the building in a cart. Garbage and recycling are then deposited directly into the corresponding bins in the main waste room.

WASHROOM AREAS

Washroom facilities throughout the building should be supplied with collection bins for paper towels (if used). Sanitary bins for female restroom facilities must also be arranged with an appropriate contractor.

Please note that all collection receptacles and bins should be branded with the appropriate stickers and the use of the Mobius loop or similar identifying recycling equipment.

FOOD & BEVERAGE TENANCY

Tenants will be responsible for their own storage of garbage and recycling back of house (BOH) during daily operations. On completion of each trading day or as required, nominated staff or cleaners will transport sorted garbage and recyclable items to the main waste room on basement level 1 and deposit it into the relevant bins.

Food handling for food cooked or prepared, served and consumed on site will produce a typical waste composition of food scraps from plates, packaging waste and some plastics. It is intended that the tenants will promote the use of reusable containers and utensils wherever possible to reduce the amount of plastic being deposited into the general bins.

Cardboard is a major component of the waste generated by retail tenancies. All cardboard should be flattened (to save bin space), placed in and collected from bulk bins. Whilst

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cardboard is bulky, it is generally lightweight however it can be contaminated with food or liquid which makes it unsuitable for recycling. A dedicated cardboard collection service may be organised through building management if deemed appropriate. This would likely replace one or more of the commingled recycling bins with bins only for cardboard.

To ensure the proper management and disposal of waste, tenants must be made aware of the following practices:

- All garbage should be bagged and garbage bins should be plastic lined;
- Bagging of recyclables is not permitted;
- All interim waste storage is located BOH during operations;
- Individual recycling programs are recommended for retailers to ensure commingled recycling is correctly separated;
- Tenants are to make arrangements for storing used and unused cooking oil in a bunded storage area;
- The operator will organise grease interceptor trap servicing;
- A suitable storage area needs to be provided and effectively bunded for chemicals, pesticides and cleaning products;
- Dry basket arrestors need to be provided to the floor wastes in the food preparation and waste storage areas; and
- All flattened cardboard will be collected and removed to recycling collection bins in the waste room.

LAB SUPPORT ROOMS

Bins for disposable lab coats will be placed in the Lab Support Rooms. It will be the building or laboratory manager's responsibility for ensuring that the disposable lab coats are disposed of correctly in accordance with Laboratory Guidelines.

SOURCE SEPERATION

Waste avoidance, recovery and reuse of discarded materials and responsible management of hazardous waste are all crucial elements of sustainable development. Effective waste management practices significantly improve environmental, social, and economic outcomes on both a local and regional scale and should be integrated into the waste management processes.

GARBAGE (GENERAL WASTE)

Garbage bins will be placed around the building where considered appropriate. These bins are emptied by contract cleaners. The cleaners circulate around the building after office hours and empty the bins while performing other cleaning duties. The cleaners then transport the garbage to the main waste room on basement level 1 and deposit it into the appropriate bin.

RECYCLING (CO-MINGLED)

Recycling bins will be placed around the building where considered appropriate. These bins will be emptied by contract cleaners as they circulate round the workplace after standard business hours. The cleaners will transport the recycling to the main waste room on basement level 1 and deposit it into the appropriate bin.

Recycling must not be bagged. Plastic bags are a contaminate to co-mingled recycling and may cause the whole co-mingled recycling load to be rejected by the waste processing facility.

HAZARDOUS/CONTROLLED WASTE & CLINICAL WASTE

Building management will be responsible for organising collection arrangements for any specialist laboratory waste and clinical waste with appropriate contractors. Collections will be carried out to an agreed schedule.

Should clinical waste bins be required, they must be stored securely and separate from general waste and recycling to prevent cross-contamination between waste streams.

BULKY WASTE

Bulky waste refers to large waste items such as furniture and white goods. The bulky goods will be managed by building management. The bulky goods waste stream is generated infrequently when an item becomes broken or no longer needed. Management will be responsible for organising removal and disposal of the bulky waste items in an appropriate manor as required.

Bulky goods items in good condition should be donated to charitable organisations or sold to office furniture retailers for refurbishing.

Broken bulky goods that are beyond repair may be deconstructed and separated into material streams for recycling such as plastics, metal, fabric and timber.

E-WASTE

E-waste (electronic waste) refers to any equipment containing printed circuit boards. E-waste must not be placed in standard garbage or recycling; e-waste can potentially contaminate soil and surrounding water bodies if not disposed correctly. The best disposal method for e-waste is to engage an e-waste recycling service.

OPERATIONAL WASTE MANAGEMENT PLAN

E-waste is a waste stream that is generated infrequently. A bin or cupboard should be allocated within the building for the storage of e-waste. Once a sufficient amount of e-waste is acquired, the building manager will be responsible for engaging an e-waste recycling service.

The building manager may also choose to contact Council to find out about new or existing strategies for the disposal or collection of electronic waste available through the Council.

GREEN WASTE

Green waste is not typically generated from buildings such as this, other than from the surrounding landscaped areas. The green waste will be removed by the designated maintenance contractor.

OTHER

Other highly recyclable waste streams generated include toner cartridges and batteries and, light bulbs.

These waste streams contain chemicals and heavy metals that can cause harm to the environment and human health when disposed of through landfill. Recycling these waste streams is the best disposal method.

These waste streams are generated infrequently, the staff should accumulate empty toner cartridges, batteries and light bulbs in appropriate containers located in a central location. Once a sufficient amount of a waste stream is accumulated the building manager will be responsible for engaging an appropriate recycling service.

MOVEMENT AND TRANSPORTATION OF BINS

It is anticipated that the requirement for moving bins at this site will be minimal. The cleaners will be responsible for any movement of bins that does occur.

Transfer of waste and all bin movements require minimal manual handling; the operator must assess manual handling risks and provide any relevant documentation to building management.

COLLECTION OF WASTE

GARBAGE AND RECYCLING

A private contractor will be engaged to collect the garbage and recycling waste streams to an agreed schedule (this report assumes that collections will occur three times per week for both waste streams).

The collection vehicle will enter the site from Botany Street, where it will park in the designated loading bay on basement level 1.

The garbage and recycling bins will be collected directly from the main waste room by collection staff. The vehicle will then leave the site via the same route and in a forward-facing direction.

OTHER HAZARDOUS AND CONTROLLED WASTES

Laboratory hazardous and controlled bins will be collected by the appointed hazardous waste disposal contractor who will remove and replace these bins. Compatible keys for the laboratory waste storage areas may need to be provided to the waste service provider. The laboratory manager will be responsible for arranging laboratory waste collection services when required.

Waste generated in the laboratory areas will be collected and disposed of in accordance with the hazards of the waste stream.

Any hazardous chemical waste, cytotoxic waste and radioactive waste will be collected in situ from their storage location within the laboratory areas.

The collection vehicle will enter the site from Botany Street, where it will park in the designated loading bay on basement level 1.

COLLECTION AREA

It is Elephant Foot's understanding that the collection areas have been reviewed by a traffic consultant to confirm the swept paths, load requirements and clearances for waste collections. It must be ensured that the collection vehicle (and other trucks if required) can enter and exit the building in a forward direction. The final number of collections required will depend upon the management of the waste contract.

INSTALLATION EQUIPMENT AND DESIGN

WASTE ROOM AREAS

The main waste room is for garbage and recycling bins only. Treated clinical waste bin must be kept in the clinical waste room. Any other hazardous or controlled waste bins will be collected directly from their operational location.

The bins in each of the waste rooms must be arranged so that all bins are accessible at all times as cleaners or other personnel will be depositing the waste directly into the bins in these rooms.

It is the responsibility of the building management or laboratory management to monitor the number of bins required for the development.

The volume of each waste stream may change according to the how the building is managed and operates. Bin numbers, sizes and configurations can be altered during building operation to suit the development's needs. Any requirement for increasing storage capacity may be met by increasing the frequency of waste collections.

The areas allocated for waste storage and collections are detailed in Table 4 below. The areas provided are estimates only. Final areas will depend upon room and bin layouts.

Table 4: Waste Room Areas

Level	Waste Room Type	Equipment	Allocated Area (m ²)
B1	Main Waste Room	5 x 660L MGBs (Garbage) 7 x 660L MGBs (Comingled Recycling)	35

GARBAGE ROOMS

CONSTRUCTION REQUIREMENTS

The garbage room will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- waste room floor to be sealed with a two pack epoxy;
- waste room walls and floor surface is flat and even;
- all corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- a cold water facility with hose cock must be provided for washing the bins;
- any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board. (Sydney Water);
- tap height of 1.6m;
- storm water access preventatives (grate);
- all walls painted with light colour and washable paint;
- equipment electric outlets to be installed 1700mm above floor levels;
- the room must be mechanically ventilated;
- light switch installed at height of 1.6m;
- waste rooms must be well lit (sensor lighting recommended);
- optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- if 660L or 1100L bins are utilised, 2 x 820mm (minimum) door leafs must be used;
- all personnel doors are hinged, lockable and self-closing;
- waste collection area must hold all bins – bin movements should be with ease of access;
- conform to the Building Code of Australia, Australian Standards and local laws; and
- childproofing and public/operator safety shall be assessed and ensured

SIGNAGE

The facility manager/caretaker is responsible for waste room signage including safety signage (see *APPENDIX B.2*). Appropriate signage must be prominently displayed on walls and above all bins, clearly stating what type of waste or recyclables is to be placed in the bin underneath.

VENTILATION

Waste and recycling rooms must have their own exhaust ventilation system either;

- Mechanically - exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum; or
- Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area

Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise or odour problem.

USEFUL CONTACTS

Elephants Foot Recycling Solutions does not warrant or make representation for goods or services provided by suppliers.

RANDWICK CITY COUNCIL CUSTOMER SERVICE

Phone: (02) 9093 6000

Email: council@randwick.nsw.gov.au

SULO MGB (MGB, Public Place Bins, Tugs and Bin Hitches)

Phone: 1300 364 388

CLOSED LOOP (Organic Dehydrator)

Phone: 02 9339 9801

ELECTRODRIVE (Bin Mover)

Phone: 1800 333 002

Email: sales@electrodrive.com.au

RUD (Public Place Bins, Recycling Bins)

Phone: 07 3712 8000

Email: Info@rud.com.au

CAPITAL CITY WASTE SERVICES (Private Waste Services Provider)

Phone: 02 9359 9999

REMONDIS (Private Waste Services Provider)

Phone: 13 73 73

SITA ENVIRONMENTAL (Private Waste Services Provider)

Phone: 13 13 35

NATIONAL ASSOCIATION OF CHARITABLE RECYCLING ORGANISATIONS INC. (NACRO)

Phone: 03 9429 9884

Email: information@nacro.org.au

PURIFYING SOLUTIONS (Odour Control)

Phone: 1300 636 877

Email: sales@purifyingsolutions.com.au

MOVEXX (Bin Movers)

Phone: 1300 763 444

AUSCOL (Recycling Oils & Animal Fats)

Phone: 1800 629 476

KOMPACT EQUIPMENT (Equipment & Servicing Provider)

Phone: 1300 566 722

Email: info@kompactequipment.com.au

ELEPHANTS FOOT RECYCLING SOLUTIONS (Chutes, Compactors & eDiverter Systems)

44 – 46 Gibson Avenue

Padstow NSW 2211

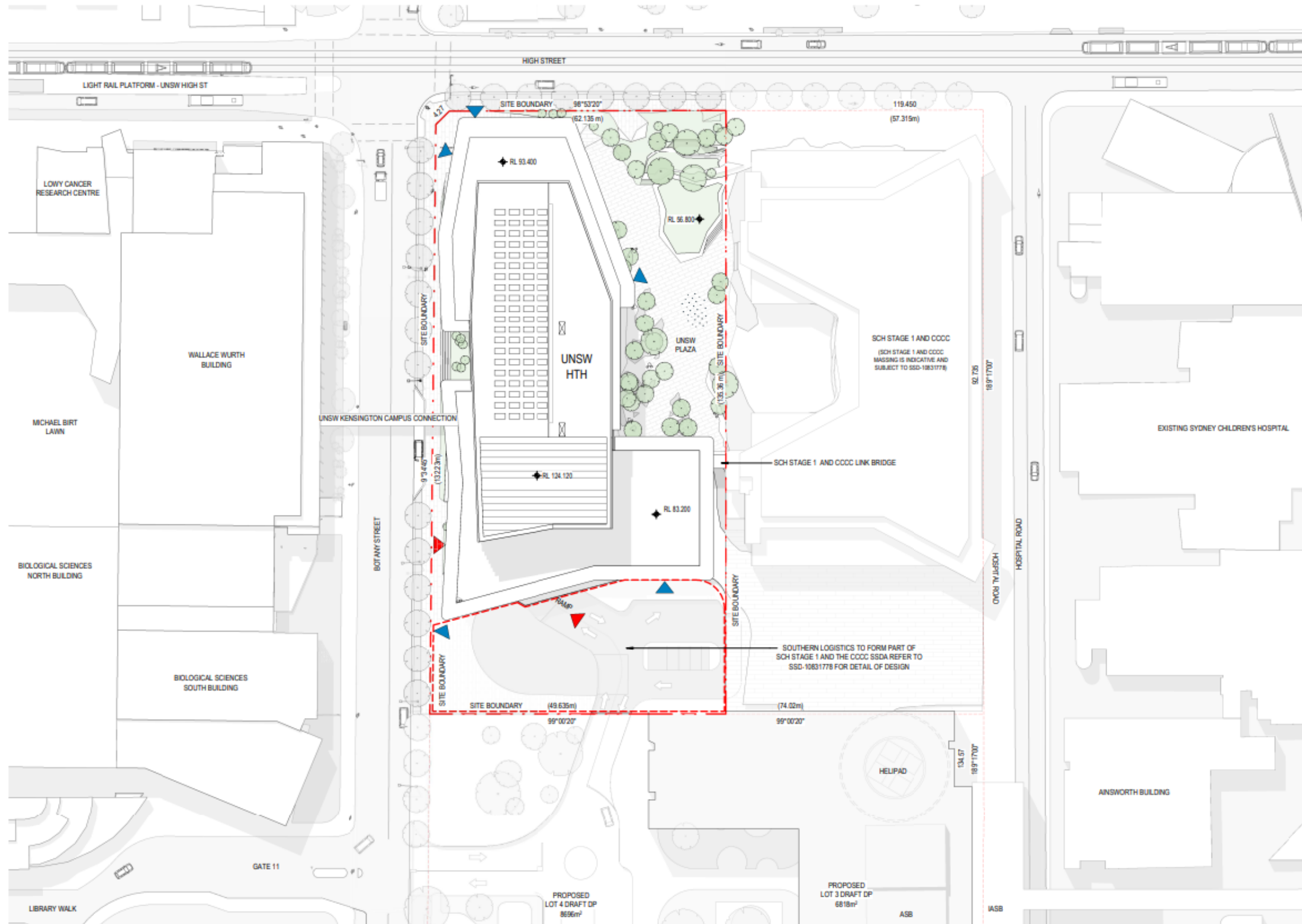
Phone: 1300 434 374

Email: wmp@elephantsfoot.com.au

APPENDICES

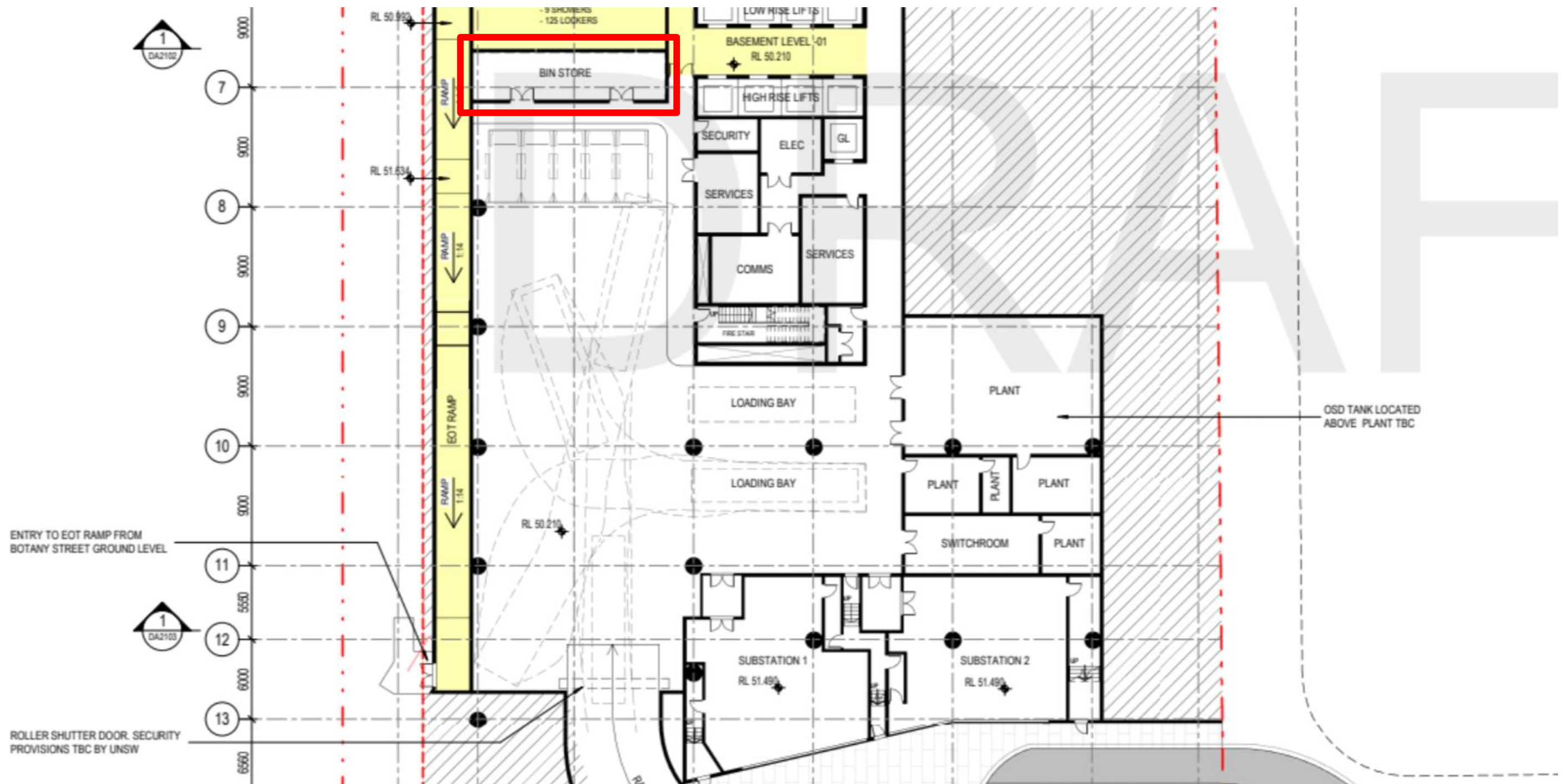
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

APPENDIX A.1 SITE PLAN



Source: Architectus, Drawing No. DA0020, Iss.A, 18/02/21 – Site Plan

APPENDIX A.2 WASTE ROOM/COLLECTION AREA



Source: Architectus, Drawing No. DA1000, Iss.G, 04/12/20 – Basement Level -01

APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX B.1 TYPICAL BIN SPECIFICATIONS

The most common bin sizes are provided below, although not all sizes are shown. These dimensions are a guide only and differ slightly between manufacturers.

Average dimension ranges for two-wheel mobile bins



Wheelie bin

Bin capacity	80L	120L	140L	240L	360L
Height (mm)	870	940	1065	1080	1100
Depth (mm)	530	530	540	735	820
Width (mm)	450	485	500	580	600
Approximate footprint (m ²)	0.24	0.26–0.33	0.27–0.33	0.41–0.43	0.49
Approximate weight (kg)	8.5	9.5	10.4	15.5	23
Approximate maximum load (kg)	32	48	56	96	Not known

Sources include Sulo, Single Waste, Cleanaway, SUEZ, just wheelie bins and Perth Waste for two-wheel mobile bins

Average dimension ranges for four-wheel bulk bins



Dome or flat lid container

Bin capacity	660L	770L	1100L	1300L	1700L
Height (mm)	1250	1425	1470	1480	1470
Depth (mm)	850	1100	1245	1250	1250
Width (mm)	1370	1370	1370	1770	1770
Approx footprint (m ²)	0.86–1.16	1.51	1.33–1.74	2.21	2.21
Approx weight (kg)	45	Not known	65	Not known	Not known
Approx maximum load (kg)	310	Not known	440	Not known	Not known

Sources include Sulo, Signal Waste, Cleanaway, SUEZ, Just Wheelie Bins and Perth Waste

Average dimension ranges for bulk bins over 1700L in capacity



Bulk bins greater than 1700L

Bin capacity)	1m ³	1.5m ³	2m ³	3m ³	4.5m ³	6m ³
Height (mm)	1000	910–1250	865–1000	1020–1580	1440–2014	1650
Depth (mm)	1000	905–1000	1300–1400	1470–1700	1605–1900	1900
Width (mm)	1400	1805–2010	1830–2000	1400–2010	1800–2010	2000
Approximate footprint (m ²)	1.4	1.63–2.01	2.4–2.8	2.1–3.4	2.9–3.8	3.8

Sources include TORO Waste Equipment, SUEZ, Signal Waste, Perth Waste and ACT Industrial

Source: New South Wales Environmental Protection Authority *Better Practice Guide for Resource Recovery* (2019)

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

Waste Signs

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the EPA (Environmental Protection Authority).

Examples of waste wall posters (EPA supplied)



Examples of bin lid stickers (EPA supplied)



Problem Waste Signs

The EPA has also produced a range of images and signs that can be used for problem wastes, such as fluoro globes and tubes, household and car batteries, e-waste and smoke detectors. To access these resources, contact the NSW EPA. Some examples are shown below.



Safety Signs

The use of safety signs for waste resource recovery rooms must comply with *AS1319 Safety signs for occupational environments*. Safety signs must be used to regulate and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Suitable signs should be decided for each development as required.

Example safety signs



Source: New South Wales Environmental Protection Authority *Better Practice Guide for Resource Recovery* (2019)

APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

Australian Standards for turning circles for medium and heavy rigid class vehicles

Vehicle class	Overall length (m)	Design width (m)	Design turning radius (m)	Swept circle (m)	Clearance (travel) height (m)
Medium rigid vehicle	8.80	2.5	10.0	21.6	4.5
Heavy rigid vehicle	12.5	2.5	12.5	27.8	4.5

Source: New South Wales Environmental Protection Authority *Better Practice Guide for Resource Recovery* (2019)

APPENDIX B.4 TYPICAL MOTORISED BIN TUG



Typical applications:

- Move trolleys, waste bin trailers and 660/1100L bins up and down a ramp incline.
- Quiet, smooth operation with zero emissions and simple to use, no driver's licence required
- Suitable for:
 - High rise building & apartment basements
 - Large factories & warehouse with sloped ground
 - Caravan parks & other large outdoor areas

Features:

- 1 tonne tow capacity of inclines up to 8 degrees
- 500kg tow capacity if inclines up to 14 degrees
- CE Compliant
- 4.5 km/h max speed
- 2 x 80amp batteries – includes charger
- Powerful transaxle
- Hitch to suit 660L bins

Safety Features:

- Intuitive paddle lever control
- Stops and repels the unit if activated when reversing.
- Site assessment recommended to assess ramp incline steepness (*See Useful Contacts*)

APPENDIX C SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX C.1 COOKING OIL CONTAINERS



[Home](#)
[About](#)
[Services](#)
[Our Parent Company](#)
[Contact](#)

The RIGHT WAY for Cooking Oil Collection Systems



Drums 205L



Pour in Bulk Tank

[View Brochure](#)



Oil Kaddy System

[View Brochure](#)

- Collection Service
- Collection Systems
- Recycling & Environment
- Safety
- Fresh Oil (W4 Only)




Eco Systems 700L Road Eco Systems 270L module

Eco Systems



Direct-Connect to Fryer