



All Welcome
23-31 Riding Lane, Coffs Harbour
Cultural & Civic Space Development

OPERATIONAL WASTE MANAGEMENT PLAN

17/06/2019
Report No. SO202
Revision C

Client

Coffs Harbour City Council

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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** and **demolition** phases of the development are not addressed in this report. It is EFRS's understanding that a construction and demolition WMP will be completed by a separate party appointed by the developer, and submitted separately to this report. Typically, the head contractor of the site will be responsible for removing all construction-related waste offsite in a manner that meets all authority requirements.

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description	Signed
A	20/05/2019	J Parker	A Armstrong	Draft	
B	5/06/2019	J Parker	A Armstrong	Amendment	
C	17/06/2019	J Parker	A Armstrong	Final	

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TABLE OF CONTENTS

GLOSSARY OF TERMS.....	i
LIST OF TABLES.....	ii
INTRODUCTION	3
DEVELOPMENT SUMMARY	3
SITE LOCATION.....	4
COFFS HARBOUR CITY COUNCIL	5
COUNCIL OBJECTIVES.....	5
COUNCIL REQUIREMENTS	5
STAKEHOLDER ROLES AND RESPONSIBILITIES.....	6
EDUCATION.....	7
LIMITATIONS	7
COMMERCIAL/RETAIL WASTE MANAGEMENT	8
BIN SUMMARY.....	8
COMMERCIAL OFFICE WASTE MANAGEMENT	9
OTHER WASTE STREAMS.....	9
E-WASTE	9
PAPER AND CARDBOARD RECYCLING	9
CHEMICAL WASTE.....	9
CAFÉ WASTE MANAGEMENT	10
COMMERCIAL AND RETAIL FACILITIES WASTE MANAGEMENT	10
WASHROOMS.....	10
KITCHEN, OFFICE TEA ROOMS AND FOOD PREPARATION AREAS	10
PRINTING AND PHOTOCOPYING ROOMS	10
FOOD WASTE.....	11
RE-USEABLE COMMERCIAL ITEMS	11
BULKY GOODS.....	11
MOVEMENT AND TRANSPORTATION OF BINS	12
COLLECTION OF WASTE.....	12
COLLECTION AREA	12
INSTALLATION EQUIPMENT AND DESIGN	13
EQUIPMENT SUMMARY	13
WASTE ROOM AREAS	13
GARBAGE ROOMS.....	14
CONSTRUCTION REQUIREMENTS.....	14
SIGNAGE	14
VENTILATION	14
USEFUL CONTACTS	15

OPERATIONAL WASTE MANAGEMENT PLAN

APPENDICES.....	16
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS	16
APPENDIX A.1 SITE PLAN	16
APPENDIX A.2 WASTE ROOM/COLLECTION AREA.....	17
APPENDIX B PRIMARY WASTE MANAGEMENT PROVISIONS	18
APPENDIX B.1 TYPICAL BIN SPECIFICATIONS	18
APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS	19
APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION	20
APPENDIX B.4 TYPICAL MOTORISED BIN TUG.....	21
APPENDIX B.5 TYPICAL SEATED BIN MOVER.....	22
APPENDIX C SECONDARY WASTE MANAGEMENT PROVISIONS.....	23
APPENDIX C.1 TYPICAL BACK OF HOUSE BINS	23
APPENDIX C.2 TYPICAL PUBLIC PLACE WASTE BINS	24

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

LIST OF TABLES

Table 1: Stakeholder Roles and Responsibilities.....	6
Table 2: Change in GFA for New Proposal	8
Table 3: Equipment Summary.....	13
Table 4: Waste Room Areas	13

INTRODUCTION

EFRS has been tasked to prepare the following waste management plan for Coffs Harbour City Council for the operational management of waste generated by the cultural & civic space development located at 23-31 Riding Lane, Coffs Harbour.

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.

DEVELOPMENT SUMMARY

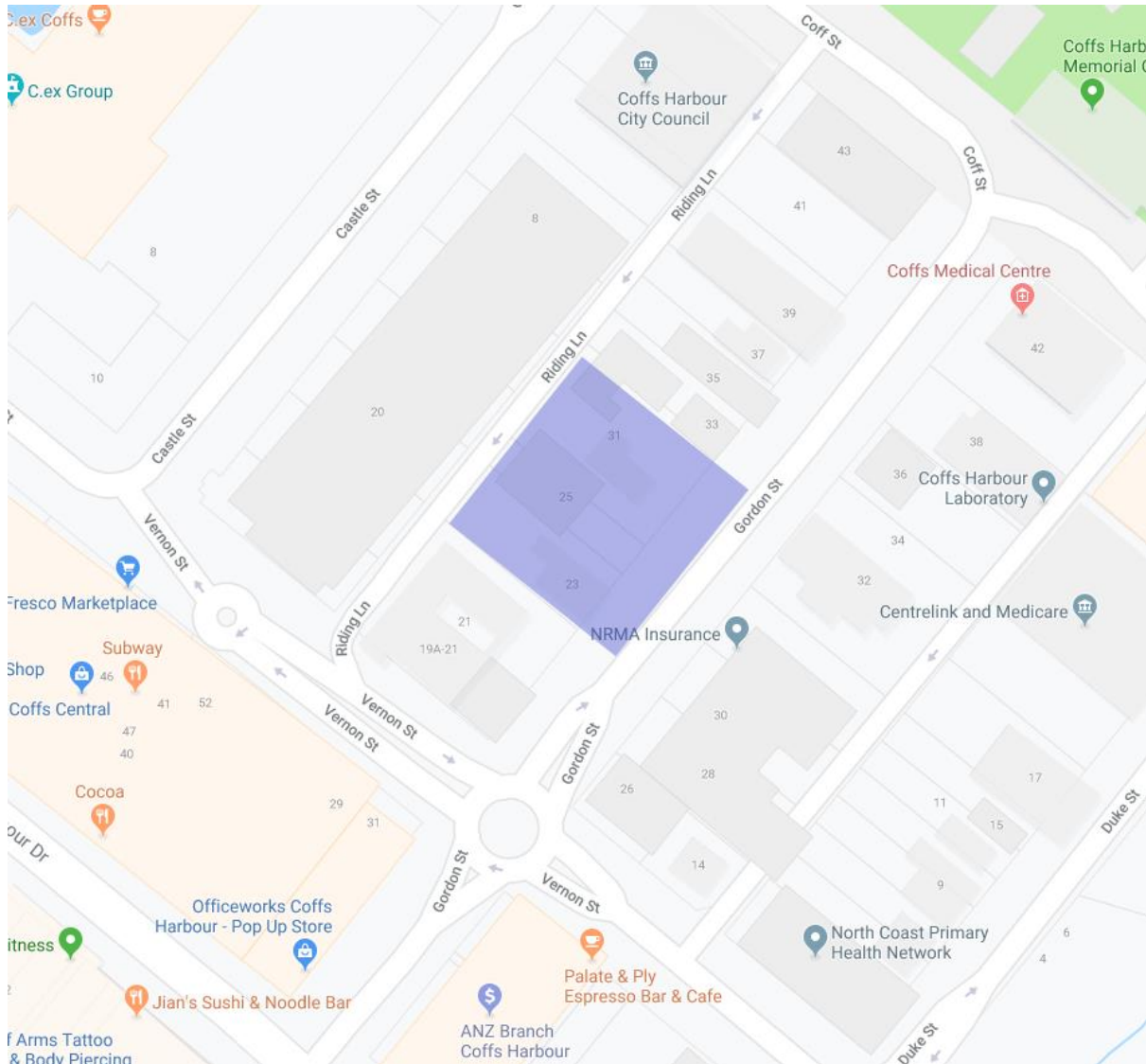
The proposed development falls under the LGA of Coffs Harbour City Council, and consists of:

- 1 building of 7 levels
 - Museum/gallery with a total GFA of 1078.9m²
 - Café with a total GFA of 113.5m²
 - Library and associated areas with a total GFA of 1717.7m²
 - Council offices, chambers and meeting rooms with a total GFA of 4355.9m²

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

SITE LOCATION

The site is located at 23-31 Riding Lane, Coffs Harbour, as shown below. The site has frontages to Riding Lane and Gordon Street, with vehicle access via Gordon Street.



Source: Google Maps

COFFS HARBOUR CITY COUNCIL

COUNCIL OBJECTIVES

- To ensure that waste is appropriately separated to assist with the collection and management of waste.
- To ensure that waste management systems are compatible with collection services.

COUNCIL REQUIREMENTS

1. A three stream waste separation system is to be provided to cater for all waste generated by the development.
2. The following variables are to be considered in the calculation of waste generation rates:
 - the number of occupants;
 - size of premises;
 - nature of business;
 - nature of waste being generated;
 - frequency of collections; and
 - peak season volume changes.
3. The number and type of bins required for waste separation systems are to suit the type of development and may include any of the following options:
 - 240 litre lime green-lidded bin for organics (green and food waste); and 240 litre yellow-lidded bin for recycling; and 240 litre red-lidded bin for residual garbage; or
 - 660 litre red and yellow-lidded bulk bins; or
 - 1,100 litre red and yellow-lidded bulk bins; or
 - 1m³ to 3m³ bulk bins.

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
Strata/Management	<ul style="list-style-type: none"> 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.
Building Manager or Waste Caretaker	<ul style="list-style-type: none"> 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 residents, 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 collection when required; and Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Tenants and Staff	<ul style="list-style-type: none"> 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.
Private Waste Contractor	<ul style="list-style-type: none"> Provide a reliable and appropriate waste collection service; Provide feedback to building managers/residents in regards to contamination of recyclables; and Work with building managers to customise waste systems where possible.
Gardening/Landscaping Contractor	<ul style="list-style-type: none"> Removal of all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	<ul style="list-style-type: none"> Removing all construction related waste offsite in a manner that meets all authority requirements.

EDUCATION

Building management in co-ordination with the office tenancy is responsible for creating and managing the waste management education process.

Educational material encouraging the correct separation of garbage and recycling items must be provided to each staff member and tenancy to ensure the correct disposal of waste, including bulky goods (old furniture, large discarded items, etc.) It is recommended that the building caretaker provides information in multiple languages to support correct practises and minimise the possibility of contamination in the collective waste bins.

It is expected that leasing arrangements with any tenancies contain direction on waste management services and expectations.

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 residents and tenants 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.

COMMERCIAL/RETAIL WASTE MANAGEMENT

Current waste generation figures provided by Coffs Harbour City Council been referenced to calculate the total number of bins required for the development. Future waste generation rates may differ according to the tenants' waste management practice.

BIN SUMMARY

The quantity of garbage and recycling bins in use at the current premises is as follows:

Admin Building (Council office/chambers/meeting rooms)

Garbage: 6 x 240L **Red Lid** MGBs collected **fortnightly**
 Comingled Recycling: 6 x 240L **Yellow Lid** MGBs collected **fortnightly**

Rigby House (Library/Gallery)

Garbage: 18 x 240L **Red Lid** MGBs collected **fortnightly**
 Comingled Recycling: 18 x 240L **Yellow Lid** MGBs collected **fortnightly**
 Green Waste: 3 x 240L **Green Lid** MGBs collected **weekly**

Table 2 below illustrates the change in GFAs between the current premises and proposed scheme. The percentage increase can then be applied to the number of bins in order to estimate the required number of bins for the proposed scheme.

Table 2: Change in GFA for New Proposal

	Current Area (m ²)	Proposed Area (m ²)
Café	100	114
Council Admin Office	2750	2818
Co-Working	180	156
Customer Service Area	190	229
Executive	210	150
Library	2440	2578
LMG Shared	535	592
MG Shared	170	184
Multi-purpose/Chamber	362	283
Regional Gallery	660	659
Regional Museum	300	288
TOTAL	7897	8051
Increase as a Percentage	=	1.95%

A 1.95% increase in GFA will not require additional bins to those used in the current premises. This bin sizes will be increased as fewer bins will require less manoeuvring by the building caretaker. Therefore, the required capacity and quantity of garbage and recycling bins for the proposed scheme is as follows:

Proposed Development (Council offices/chambers/meeting rooms, library and associated areas, museum, gallery and café)

Garbage: 6 x 1100L **Red Lid** MGBs collected **fortnightly**
 Comingled Recycling: 6 x 1100L **Yellow Lid** MGBs collected **fortnightly**
 Green Waste: 3 x 240L **Green Lid** MGBs collected **weekly**

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed.

COMMERCIAL OFFICE WASTE MANAGEMENT

Typically, bins for paper or general waste are positioned next to each workers desk or work station. Bins station for general waste and recyclables are also located centrally in each level and office working space, 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 waste 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 of the waste and recycling to the waste room on the ground level and placing it into the appropriate bin.

OTHER WASTE STREAMS

Tenants are required make arrangements for the disposal and recycling of specialised waste (toner cartridges, batteries, etc.). Disposal of hard, electronic, liquid waste and any chemical waste (paint/chemicals) can be organised with the assistance of the building management or cleaners. Printer cartridges will be recycled as part of their purchase agreement and battery and mobile phone recycling points will be provided in the public foyer, library and general staff areas.

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 of correctly. The best disposal method for e-waste is to engage an e-waste recycling service.

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

The property 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.

Space will be available for storage of e-waste in the bulky goods storage area.

PAPER AND CARDBOARD RECYCLING

Paper and cardboard are a highly recyclable waste streams that is often generated by office environments. During operation, the building manager or tenancy may choose to implement paper and cardboard bins and paper collection service with an appreciate recycler.

Paper and cardboard should not be stored for more that two weeks to prevent the breeding of vermin in the sorted material.

CHEMICAL WASTE

Chemical wastes (e.g. cleaning chemicals, paints, oils solvents) pose detrimental effects to human health and the environment if not disposed of correctly. Chemical wastes should be disposed of at a suitable licensed disposal facility. No liquid wastes or wash down waters should be disposed of via the storm water drainage system.

OPERATIONAL WASTE MANAGEMENT PLAN

Tenant and staff will need to liaise with the building manager when disposing of their chemical wastes. The building manager will be responsible for arranging the correct disposal of chemical waste. Space will be available for storage of chemical waste in the bulky goods storage area.

CAFÉ WASTE MANAGEMENT

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 retail staff or cleaners will transport their garbage and recycling to the waste room on the ground level and place garbage and recycling into the appropriate collection 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. Café or restaurant staff will be responsible for their own BOH waste management.

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 cardboard is bulky, it is generally lightweight however it can be contaminated with food or liquid which makes it unsuitable for recycling.

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;
- Any food and beverage tenant will 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 the waste room recycling MGB

COMMERCIAL AND RETAIL FACILITIES WASTE MANAGEMENT

WASHROOMS

Washroom facilities 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.

KITCHEN, OFFICE TEA ROOMS AND FOOD PREPARATION AREAS

Any food preparation area, including kitchens and office tea rooms will be provided with dedicated source separation bins including a general garbage bins, a recycling bin and a food waste bin. The cleaners will be responsible for monitoring the fullness of these bins and emptying them as required.

PRINTING AND PHOTOCOPYING ROOMS

It is recommended that rooms dedicated to printing and photocopying have a bin for the collection of waste paper and a receptacle for the collection of toner and printer cartridges for recycling.

The cleaners and building managers are responsible for monitoring the fullness of these bins and ensuring that these items are collected and recycled by an appropriate contractor.

FOOD WASTE

During daily operations, each commercial and retail tenancy will be responsible for the collection of their food waste back of house. At the end of the day, nominated staff or cleaners will bring the food waste bins to the central food waste area for collection.

The building management will be responsible for providing either on-site food waste processing system or a food waste bins and a food waste collection through a private contractor.

RE-USEABLE COMMERCIAL ITEMS

Space will be provided back of house for the storage of re-usable commercial items such as crates, pallets, kegs and strip out waste. The building manager will be responsible for ensuring that storage of these items in public places is completely avoided.

BULKY GOODS

A room or caged area will be made available for the storage of discarded bulky items (e.g. whitegoods, desk furniture, etc.) and problem waste for recycling, such as e-waste and chemical waste. This room should have a minimum doorway width of 1.5m to allow for easy movement of large waste items in and out of the room.

It is recommended that this area be at least 10m².

These areas are crucial to prevent the illegal dumping bulky waste on footpaths. Regular illegal dumping can attract other dumped waste, generate litter, detract significantly from the quality and appearance of the development and reduce amenity of the street.

Staff will be required to liaise with the building caretaker regarding the transportation and disposal of bulky goods. Ideally, bulky waste should be collected on a regular schedule so that the storage area does not become overfull and so that staff know when to place items in there for collection.

Donations to charitable organisations should be encouraged. Clean, sound furniture and household goods etc. are highly sought after to provide for the disadvantaged. Donations can be arranged with the assistance of the building manager/waste caretaker.

MOVEMENT AND TRANSPORTATION OF BINS

The building manager/waste caretaker is responsible for the transportation of bins from their designated operational locations to their respective collection room/areas prior to scheduled collection times, and returning them once emptied to resume operational use.

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.

If required the developer should contact a bin-tug, trailer or tractor consultant to provide equipment recommendations. Examples of motorised bin moving equipment can be found in APPENDIX B.4 and APPENDIX B.5.

Bins may have to be fitted with hitches to enable the simultaneous transportation of multiple bins to the collection area. Council must be informed of any hitch attachments required to be installed on bins.

COLLECTION OF WASTE

All waste generated by the development will be collected by private contractor to an agreed schedule (this report assumes collections for both garbage and recycling will be collected three times per week).

On collection days, the contractor's waste vehicle will pull-up on Riding Lane adjacent to the site. Collection staff will then access the waste room and service all bins via a wheel-in/wheel-out strategy.

The building manager/caretaker will be responsible for ensuring bins are neatly arranged within the waste room before and after collections.

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 truck collection will depend on management of waste contract.

INSTALLATION EQUIPMENT AND DESIGN

EQUIPMENT SUMMARY

Table 3: Equipment Summary

Component	Part	Qty	Notes
Equipment	Suitable Bin Moving Equipment	N/A	Optional (See APPENDIX B.4 for Typical Bin Mover)

WASTE ROOM AREAS

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)
G	Bin Holding Room	6 x 1100L Red Lid MGBs (Garbage) 6 x 1100L Yellow Lid MGBs (Comingled Recycling) 3 x 240L Green Lid MGBs (Green Waste)	32

Note: Any requirement for increasing storage capacity may be met by increasing the frequency of collections for all waste.

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 building 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.

COFFS HARBOUR COUNCIL CUSTOMER SERVICE

Phone: 02 6648 4000

Email: coffs.council@chcc.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

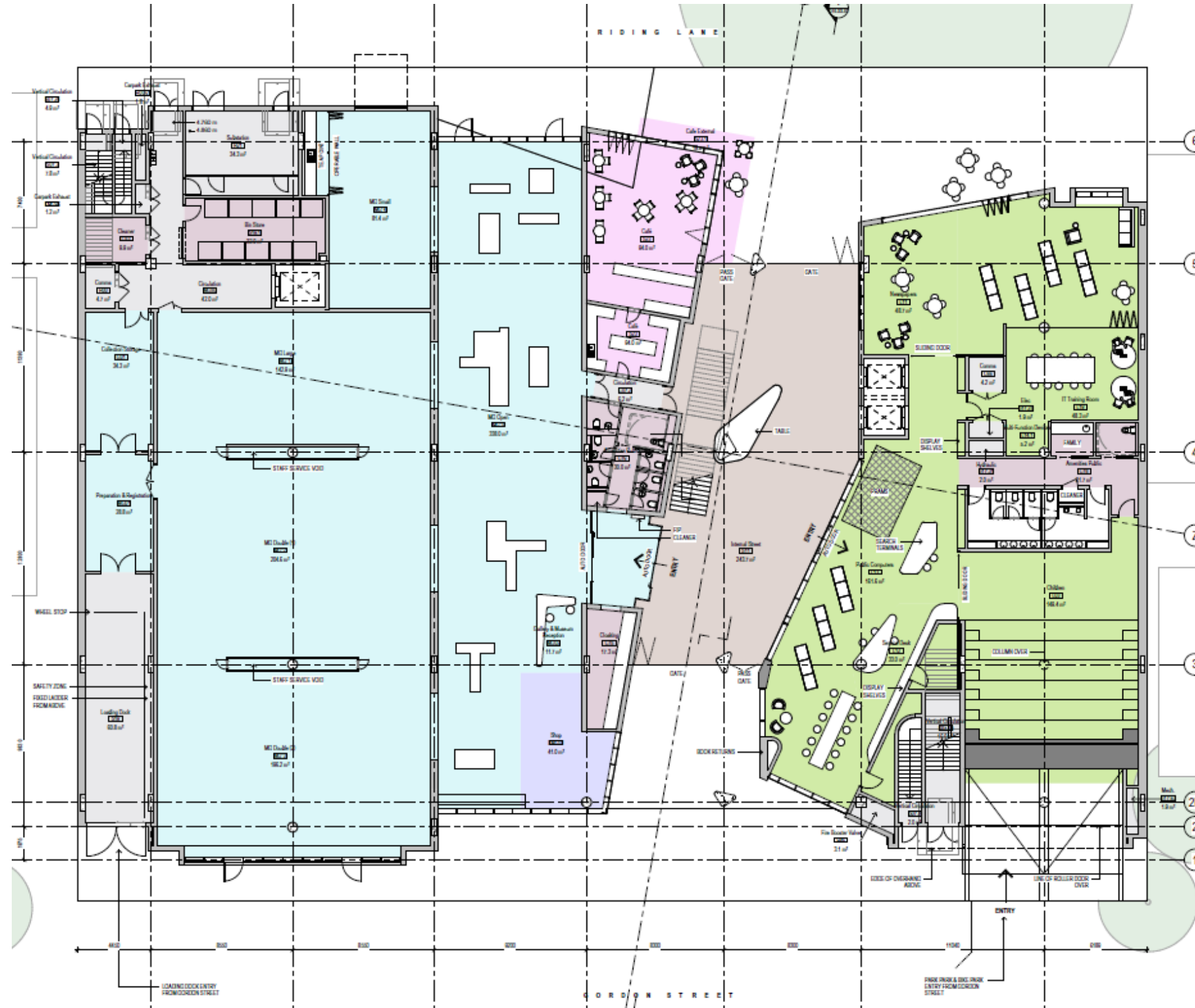
Phone: 1300 434 374

Email: wmp@elephantsfoot.com.au

APPENDICES

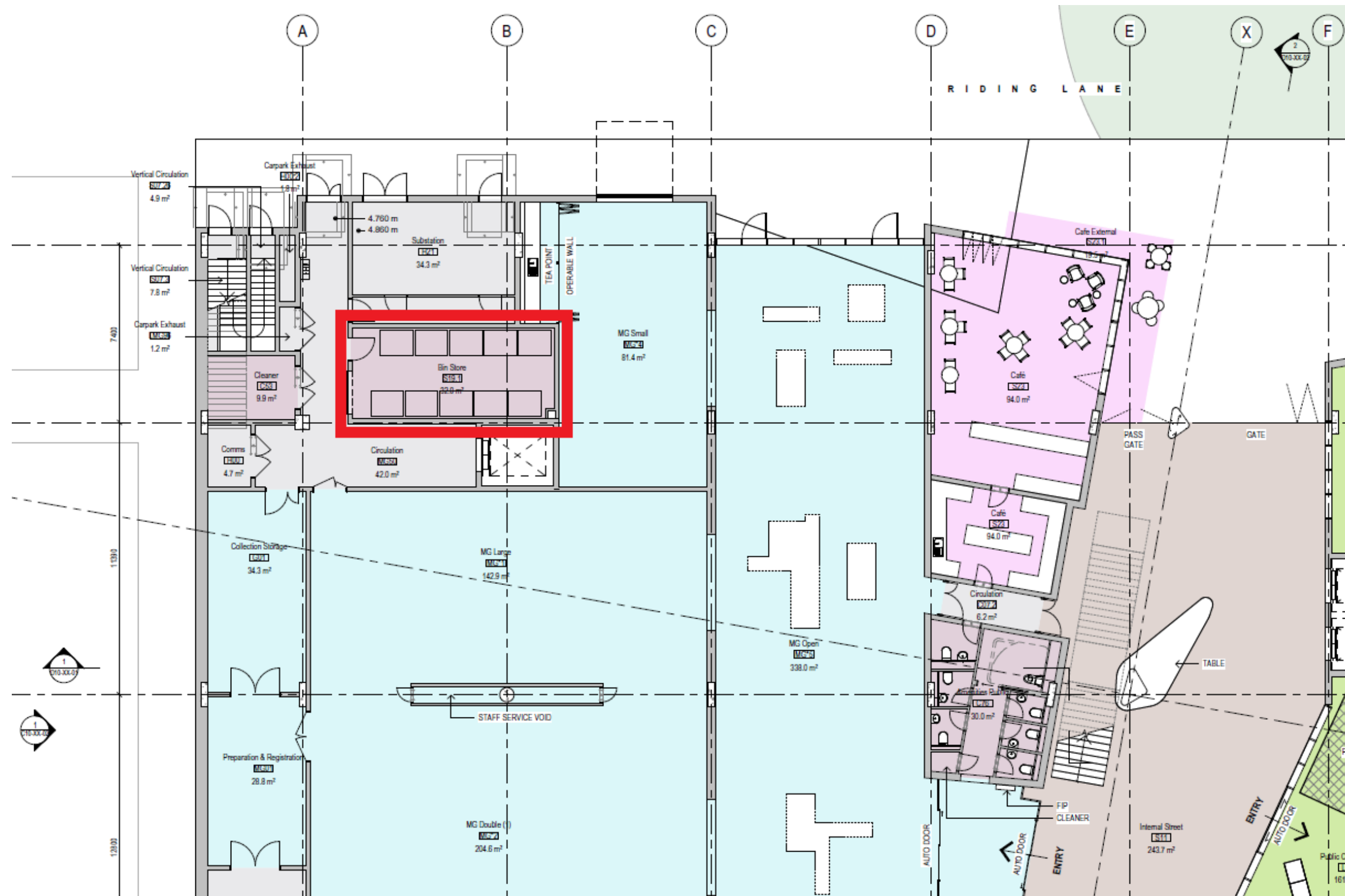
APPENDIX A ARCHITECTURAL DRAWING EXCERPTS

APPENDIX A.1 SITE PLAN



Source: BVN Architects, Drawing No. AR-B10-00-00, Iss.4, 17/05/19 – Ground Level Floor Plan

APPENDIX A.2 WASTE ROOM/COLLECTION AREA



Source: BVN Architects, Drawing No. AR-B10-00-00, Iss.4, 17/05/19 – Ground Level Floor Plan

OPERATIONAL WASTE MANAGEMENT PLAN

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

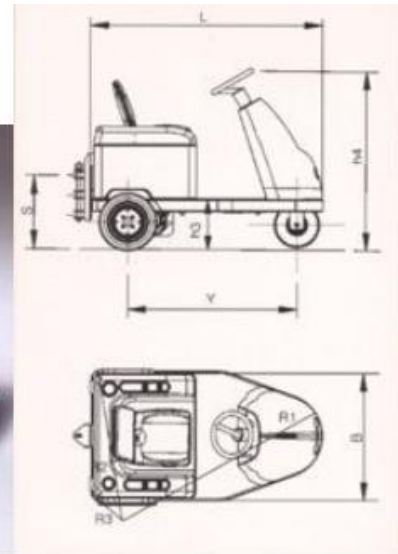
Features:

- 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 B.5 TYPICAL SEATED BIN MOVER



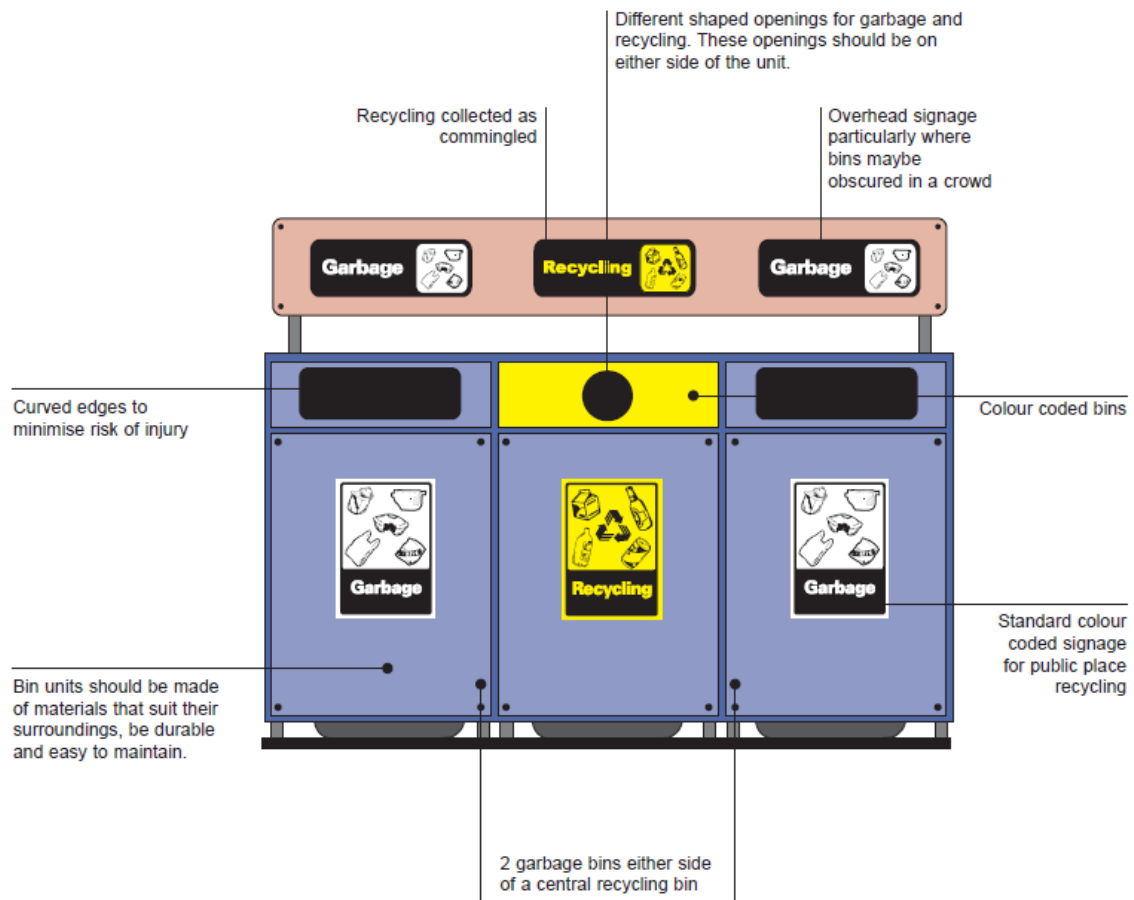
		UNIT M.	BULL 2	BULL 4
Manufacturer	DEC			
Model	BULL			
Platform loading cap.	Nominal capacity	kg	-----	-----
Pull capacity	Pull nominal capacity	kg	2000	4000
Power type	Electric - endothermic		electric	electric
Control type	Standing / seated thiller / steer		seated / steer	seated / steer
Tyres	Pn=pneum. Se=superelastic		Pn	Pn
Wheels	N. front/rear - x drive	n.	1/2X	1/2X
Platform dimensions	L x B (lengh x width)	mm	-----	-----
Platform hight	h6 = unload clearence	mm	-----	-----
Overall dimensions	L = lenght	mm	1500	1600
	B = width	mm	900	930
	h1 = foot leve	mm	1820	1960
	h3 = Seat height	mm	310	340
	h4 = Steer height	mm	1250	1330
Turning radius	R1 = front min. external	mm	1400	1500
	R2 = rear min. external	mm	1000	1000
	R3 = front min. internal	mm	400	400
Aisle width	A = 180° turn	mm	2200	2300
Tow hook height	s = center from ground	mm	220-350-490	240-380-520

APPENDIX C SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX C.1 TYPICAL BACK OF HOUSE BINS



APPENDIX C.2 TYPICAL PUBLIC PLACE WASTE BINS



Source: *Department of Environment and Conservation (NSW) Better Practice Guide for Public Place Recycling 2005*