

# UNITING CHARLESTOWN DEVELOPMENT PROJECT

## Operational Waste Management Plan

Prepared for:

Uniting  
c/o TSA Management  
Level 4, 25 Watt Street  
Newcastle NSW 2300

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SLR 

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## BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Uniting (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

## DOCUMENT CONTROL

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# 1 Introduction

## 1.1 Overview

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by TSA Management on behalf of Uniting (the Client) to prepare a waste management plan (WMP) in support of a state significant development application (SSDA) 35370706 for Buildings A to D of the Uniting Charlestown Development project (the Project).

This WMP applies to the waste generated from the operational stages of the Project and has been prepared using architectural drawings supplied by the Client.

## 1.2 Objectives

The principal objective of this WMP is to identify all potential wastes likely to be generated at the Project site during the operational phases, including a description of how waste would be handled, processed and disposed of, or re-used or recycled, in accordance with Lake Macquarie City Council's (Council) requirements.

The specific objectives of this WMP are:

- To encourage the minimisation of waste production and maximisation of resource recovery.
- To assist in ensuring that any environmental impacts during the operational life of the Project comply with Council's development consent conditions and other relevant regulatory authorities.

## 1.3 SEARs

The Secretary's Environmental Assessment Requirements (SEARs) have been issued for SSD-35370706. The conditions specified for waste management are shown in

**Table 1 SSD-35370706 Conditions for waste management**

Condition	Location in this waste management plan
18. Waste Management	
Identify, quantify and classify the likely waste streams to be generated during construction and operation.	Please refer to Table 5 for construction waste types and classification Please refer to Table 9 for estimates of construction waste quantities. Please refer to Table 11 for operational waste types and classification Please refer to Table 17 for estimates of operational waste quantities
Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	For implementation and management of construction waste please refer to Sections 5.6, 5.7, 5.8, 5.9, 5.10 and 5.11 and Table 10 For implementation and management of operational waste please refer to Sections 4.7, 4.8, 4.9, 4.10 and 6.6 and Table 4 For reuse and recycling of construction waste please refer to Section 5.7 For reuse and recycling of operational waste please refer to Section 4.6
Identify appropriate servicing arrangements for the site.	For construction waste please refer to Section 5.8 For operational waste please refer to Section 6.7
If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	Please refer to the separate hazardous materials report

## 1.4 Green Star

The Uniting Design Guide specifies that the design should strive for a 5 Star Green Star rating. The operational waste management system of the Uniting Charlestown Development would comply with the Green Star sections 8A *Performance Pathway Specialist Plan*, and 8B of the *Prescriptive Pathways: Facilities* by complying with the following criteria:

- 8B.1 Separation of Waste Streams
  - Bins or containers have been provided for building occupant use that allow for separation of the applicable waste streams
- 8B.2 Dedicated Waste Storage Area
  - A dedicated, sufficiently sized storage area for the separation and collection of various waste streams is provided
- 8B.3 Access to Waste Storage Area
  - Access to waste storage follows best practice guidelines for collection as stipulated in the credit.

## 2 Project Description

### 2.1 Overview of Proposed Development

The Project is located at 27 Tiral Street, Charlestown, the site of the former Hunter Institute, and is bounded by Tiral Street, James Street and Dudley Road. The site also includes the portion of crown land which intersections 27 Tiral Street. The Project consists of four buildings, A, B, C and D. The site layout is shown in Figure 1 below.

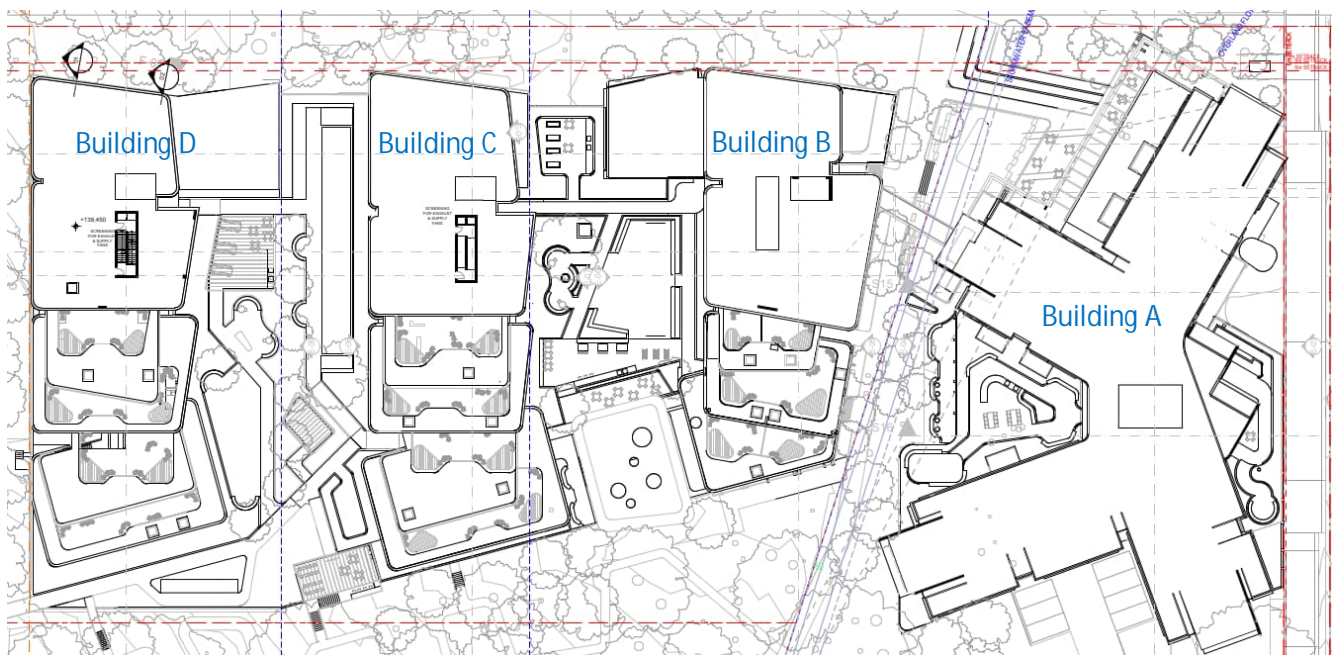


Figure 1 - Site plan

Building A includes:

- 120 Residential Aged Care (RAC) dwellings
- 14 Assisted Living Apartments (ALAs)
- a café
- hair salon
- chapel
- pastor
- multi-purpose hall
- administration, meeting, and office areas.

The RAC dwellings are over three levels and consist of six households each with 20 beds. Waste management requirements for aged care facilities are addressed in the commercial, retail, recreational and tourism facilities section of Council's waste management guidelines.

Buildings B and C consist of Independent Living Units (ILUs), of which there are 82 in Building B and 107 in Building C. Building D is a residential flat building (RFB) of 133 apartments. Buildings B, C and D are classified as residential developments by Council.

## 3 Better Practice Waste Management and Recycling

### 3.1 Waste Management Hierarchy

This WMP has been prepared in line with the waste management hierarchy shown in Figure 2, which summarises the objectives of the *Waste Avoidance and Resource Recovery Act 2001*.

The waste management hierarchy comprises the following principles, from most to least preferable:

- Waste avoidance, prevention or reduction of waste generation. Achievable through better design and purchasing choices.
- Waste reuse, reuse without substantially changing the form of the waste.
- Waste recycling, treatment of waste that is no longer usable in its current form to produce new products.
- Energy recovery, processing of residual waste materials to recover energy.
- Waste treatment, reduce potential environmental, health and safety risks.
- Waste disposal, in a manner that causes the least harm to the natural environment.

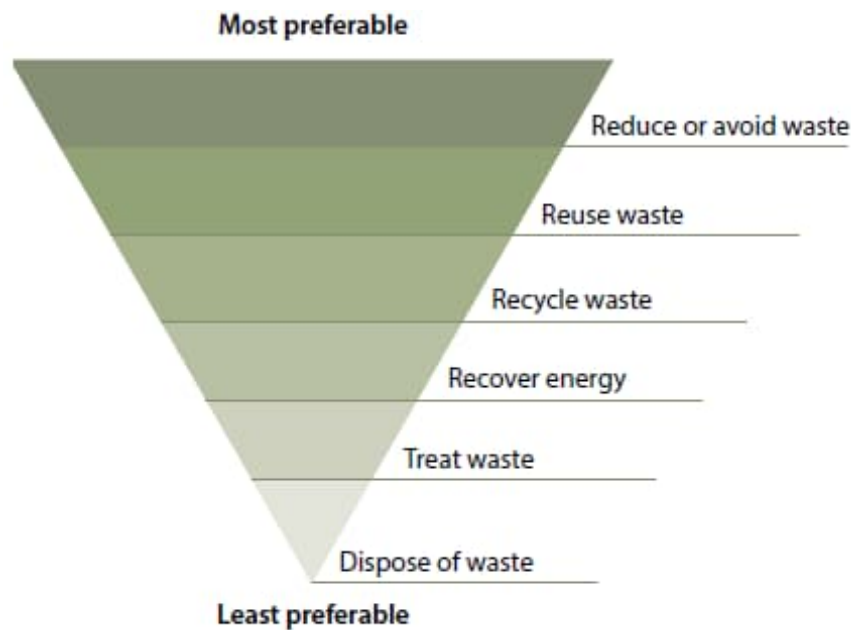


Image from NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.

Figure 2 - Waste management hierarchy

## 3.2 Benefits of Adopting Better Practice

Adopting better practice principles in waste minimisation offers significant benefits for organisations, stakeholders and the wider community. Benefits from better practice waste minimisation include:

- Improved reputation of an organisation due to social and environmental responsibility.
- Lowered consumption of non-renewable resources.
- Reduced environmental impact, for example, pollution, from materials manufacturing and waste treatment.
- Reduced expenses from lower waste disposal.
- Providing opportunities for additional revenue streams through beneficial reuse.

## 4 Waste Legislation and Guidance

### 4.1 Guidelines reviewed by SLR

SLR examined a number of references in order to prepare the waste management requirements for the development. These included:

- The Lake Macquarie Development Control Plan (DCP) 2020 – Revision 25
- The Lake Macquarie Development Control Guidelines – Waste Management (Waste Management Guidelines)
- The Uniting Design Guide 2019 Version 1

- The City of Sydney, Guidelines for Waste Management in New Developments, which are used to assist in estimating quantities of bulky waste and food waste, and
- AS/NZS 3816:1998 Management of clinical and related wastes.

Council's Guidelines and the Uniting Design Guide provide comprehensive guidance on waste management storage and collection design requirements for residential and commercial developments. SLR has applied different parts of these guidelines based on the different waste streams and parts of the development addressed. Where neither document assisted, SLR has made assumptions and used other references based on our experience.

## 4.2 Council Requirements

### 4.2.1 Requirements for senior living and aged care

The proposed ILU buildings meet the definition of seniors living development in Council's Waste Management Guidelines. Requirements for seniors living developments are outlined in Chapter 3 of the Waste Management Guidelines. The Waste Management Guidelines set out separate requirements for aged care facilities in Chapter 4.

As specified in the Waste Management Guidelines, seniors living and aged care developments must have separate waste storage areas and systems.

Council's Waste Management Guidelines provide waste bin requirements for Senior Living Developments, but do not specify waste generation rates and bin requirements for Aged Care Facilities. For the estimation of general waste, recycling, and food waste quantities, SLR has applied the rates and bin requirements provided by Council for Senior Living Developments.

### 4.2.2 Kitchen waste storage

Council's Waste Management Guidelines require waste storage cupboard space be provided in or near every kitchen area. This must be sized to hold two day's waste in at least three separated containers sized between two and 20 litres. Containers should be for:

- Comingled recyclables
- Food waste, and
- Residual waste.

Additional space can also be provided in the waste storage cupboard for storage of soft plastics, deposit containers and problem waste such as batteries.

### 4.2.3 Shared 'Swap' Space

Council's Waste Management Guidelines encourage the use of a shared 'swap' space for bulky waste in multi-unit residential developments. In the swap space, residents can place items that they want to give away for other occupants to take away. Leftover items can also be donated to charity.

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#### 4.2.4 Waste Chute or Intermediate Waste Storage Room

Council's Waste Management Guidelines state that residential developments, in this case seniors housing and residential flat buildings, that are greater than three storeys must have one of the following:

- A waste chute system
- An intermediate waste storage room on each level, or
- An innovative solution.

The Uniting Charlestown Development includes waste chutes.

Waste chutes are to be designed in accordance with the following Council requirements:

- Waste chutes must manage recyclables, food and garden waste and general waste
- Waste chutes must not be used in conjunction with a compactor for recyclables
- Where a waste chute system is used, a solution is planned and will be implemented to manage problem wastes such as batteries, cooking oils, liquid wastes, and chemicals.
- Where a waste chute system is used, a solution is planned for managing bulk waste items, such as furniture, whitegoods, large cardboard, that would not fit in the chute.
- Waste chutes must be designed in accordance with the Better Practice Guide for Waste Management in Multi-Unit Dwellings, DECC, 2008.

In this development chutes are provided as follows:

- Building A – One chute for garbage.
- Buildings B, C and D – One chute for garbage and one for food. A 240 L bin will be provided for comingled recyclables next to the chutes on each floor.

There is enough space to store problem wastes which will be managed by the cleaning contractors. Space for bulky waste has been allowed as specified in Council's Guidelines and will be managed by the cleaning contractors.

#### 4.2.5 Intermediate Waste Storage Room

Intermediate waste storage rooms for recycling bins will be designed in accordance with the following Council requirements:

- Intermediate waste storage rooms are located on each level of the multi-storey development and include solutions to manage recyclables only in this case.
- Intermediate waste storage rooms must be managed by a caretaker to transfer waste from the bins to the waste storage room, preferably in a separate service lift.

#### 4.2.6 Waste bins in communal areas

Council's Waste Management Guidelines specify that the design of residents' rooms in aged care facilities must allow for one day's worth of separate recycling, food and general waste unless waste can be disposed in waste bins elsewhere more frequently.

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#### 4.2.7 Architectural Drawings

The architectural drawings for the development should show to scale the follow:

- All bins, facilities, and areas to be used for on-site waste storage and collection
- Features of waste carting routes including door and gate widths, no steps, gradients and distances between waste storage and collection points, and
- Where waste collection will take place on site, showing access roads and driveways, vehicle turning circles, pavement strength, collection points free from obstructions beside or above where bins will be emptied.

#### 4.2.8 Waste Storage Areas

Waste storage area should be designed to have the following features:

- Waste storage areas should be screened from the main living spaces of dwellings, the public road, and views from neighbours.
- Waste storage areas should be located away from doors, windows and air intakes of all dwellings and businesses.
- Waste storage areas must be readily accessible to occupants, while being secure from non-occupants.
- Where there is a door or gate for bin removal from the waste storage area, the door or gate at least 1,600 mm wide where bins up to 1,100 L in size are used.
- Where a door or gate opens inwards, no bins are to be stored within the arc of the swinging door. Where a door or gate opens outwards, the gate must not block the pathway for moving bins out to the collection point.
- Bin enclosures must be designed in character with the land use zone characteristics and blend with buildings and landscaping on the property in terms of appearance, materials, bulk and scale, location, and orientation.
- Bin enclosures must contain measures to prevent entry by vermin.
- Shared bin enclosures must have lighting, water supply and bin washing facilities that drain to the sewer.
- Bulky waste storage must be weather-protected.
- Waste storage areas must have a separate ventilation system to comply with AS 1668 – The use of mechanical ventilation and air-conditioning in buildings
- Waste storage areas must have bin washing facilities, including a hose cock and floor graded to a 100 mm diameter floor drain outlet. The tap must be protected from the waste containers and be located where it can easily be accessed even when the area is filled with waste containers, and
- Waste storage rooms must have a bump rail 50 mm clear of walls.

Clinical and related waste must, as far as practicable, be stored separately from other waste.

#### 4.2.9 Bin Carting Routes

Bin carting routes should be designed to have the following features:

- There must be unobstructed, safe access to move waste between source points, such as dwellings, businesses, buildings, and public area bins, and the waste storage areas.
- Safe, lit access from the dwelling, and home business or industry exit, if applicable, to the waste storage area must be less than:
  - 100 m in length for commercial developments
  - 75 m in length for residences, or
  - 50 m in length for adaptable housing and seniors' developments is wheelchair accessible.
- Where bins 660 L and greater are used, carting gradients must not exceed 1:30.
- Where waste storage is in a lower level basement, a goods lift may be used to move bins between floors. Doorways to any goods lifts and lift space dimensions must fit the size of bins and space for a person to comfortably fit. The distance from store to lift and from lift to collection point is no more than 3 m for 1,100 L bins unless a bin cart is used and can also fit in the lift.

#### 4.2.10 Waste Collection and Removal

Waste collection points should be designed to have the following features:

- 1,100 L bins must be collected from onsite by waste collection vehicles entering the site, unless the site can meet the following criteria for the bins to be collected on the kerbside of a Council road by a rear-lift waste collection vehicle, which requires:
  - A 1:30 gradient or flatter hard surface slab is to be provided within the property boundary and flush with the driveway to temporarily store the waste bins
  - The slab should have enough space to move bins around each other and replace empty bins while removing full bins, and should have stoppers to prevent bins running off the slab, while not preventing moving the bins to the kerb for emptying
  - The distance to move the bins along the driveway should be less than 5 m and the gradient along and across the driveway to the kerb should be 1:30 or less
  - The road gradient should be less than 1:30 across and down the parking lane at the driveway, and
  - The 10 m space immediately after the driveway should be retained as a stopping location for the waste collection vehicle (not car parking) on waste collection days. It may be No Parking, Loading Zone or Truck Zone.
  - There must be adequate driveway widths and height at entrance ways minimum driveway width of 3.5 m, maximum grade of 1:8, and minimum vertical clearance 4.3 m
  - Provide access circulation space to the bin doors in accordance with AS1428.1 Design for Access and Mobility.

To receive an on-site Council waste collection service from within the property boundary, a Deed of Agreement between the owner's corporation, or strata on behalf of owners and the Council is required to indemnify Council for any damage to property. The owner is also responsible for Council's legal costs regarding the Deed of Agreement if variations to Council's standard deed are required. The on-site collection and Deed of Agreement cannot be offered unless a site inspection of the as-built property indicates that there are no issues that would otherwise prevent safe access and collection.

For residential flat buildings:

- The noise from collection must be evaluated in accordance with NSW Environment Protection Authority's Industrial Noise Policy.
- The larger bins must be accessible by service vehicles without the need for manual manoeuvring of the bins.
- The need for vehicle reversing must be minimised.
- It is understood that Council waste services vehicles, staff and Council's contractors will not enter private property unless it is under a negotiated agreement.
- Where waste storage is in a lower-level basement and collections have to take place from inside the basement, the building must be designed to accommodate private waste collection vehicles entering and exiting the site.
- Clearance height for under building access by collection vehicle must not be any less than 3.6 m at any point.
- At sites where waste collection vehicles must enter and exit in a forward direction, the use of vehicle turntables must be designed.
- Confirmation in writing from a waste collection service provider must be included in the Development Application stating that they would be able to service this site with this basement and turntable design.

#### 4.2.11 Waste Collection Vehicle Routes

For any bins to be collected onsite, access for waste collection vehicles should:

- Require a maximum of only one reversing manoeuvre to enter or leave the site and turn on site
- Be able to stand wholly within the site and not block on-site car parking, or access and egress from the property
- Meet specifications for pavement quality for gross weight bearing, turn, width and height clearances and lift arc requirements for locally available waste collection vehicles specifications as identified in the Lake Macquarie City Council Waste Management Guidelines
- For rear-lift waste vehicle onsite access, demonstrate vehicle turn arcs are sufficient for rear-lift waste collection vehicles of 8 m length or be in accordance with the Lake Macquarie City Council Vehicle Access Guidelines Medium Rigid Vehicle standard or have turns and cul-de-sacs as per Standard Drawing EGSD-701 for 12.5 m length vehicles
- Turning circles or three-point turn arrangements must be so that vehicles enter and leave the site moving in a forward direction. The minimum turning circle is 21.7 m.
- All clearances and turn circles must meet minimum requirements, including no obstruction from trees, light poles, bollards, road kerbing, inadequate roundabouts, signs, and overhead awnings.
- The longitudinal road gradient must be less than 1:7 (15 per cent) and the turning heads must be maximum gradient of 1:10 (10 per cent).

### 4.3 Uniting Design Guide

The Uniting Design Guide provides advice for waste storage bin requirements for general waste, recycling, and green waste for the RACs. For general waste, recycling and food and garden waste bins, RAC and ALA units in Building A, SLR has used the Uniting Design Guide.

### 4.3.1 Communal Areas

Bins required in communal areas are shown in Table 2 below.

Table 2 Uniting Design Guide Bin Requirements

Area	Bin Capacity (L)									Location
	General waste	Comingled recyclables	Green waste	Sharps	Paper recycling	Food waste	Medical waste	Contaminated waste <sup>1</sup>	Cytotoxic waste	
Kitchens	60	60				60				Under a bench on wheels in open joinery
Central kitchens	87	87				87				
Community rooms	35	35	20							Under a bench on wheels
Wellness rooms or gyms	35	35								Under a bench on wheels
				1 small						Wall mounted
Wellness centres or gym assessment rooms	10-15									
Staff admin offices	60				60					Photocopy area. Additional bins under desks as required
Manager's offices	10-15				15					
Staff rooms	60	60								Under a bench on wheels
Training rooms	20									
Building maintenance rooms	240									
Cafes or shops						60				Open joinery under a bench on wheels or trolley
Multipurpose rooms	120									Under a kitchenette sink
Pastoral care office	10-15				15					
Consult rooms	10-15			2.18			2.18			
Hair salon or day spa	60									Under a bench
Dirty utility rooms	120			2.58				240	50	

### 4.3.2 Waste Storage Areas

Waste storage areas should:

- have a handwash basin located within 10 m, but it is preferred for the handwash basin to be in the back of house corridor, if possible, to help minimise numbers of handwash stations
- be located as close as possible to delivery docks.
- ensure clearance for front lifting and rear lifting trucks.

<sup>1</sup> For example, continence aids

- generally, be within a maximum of 50 m walking distance from any unit.

### 4.3.3 Clinical and related waste

All clinical waste bins are to be lockable.

## 4.4 AS/NZS 3816:1998 Management of clinical and related wastes.

Storage and management of clinical waste must comply with the AS/NZS 3816:1998 standard (the Standard).

The Standard allows bags to be used for clinical waste as well as 'Reusable rigid-walled containers, such as mobile garbage bins'. Bags may be used within the facility; however, mobile bins are proposed to be used to contain and store clinical waste in the waste storage area.

Sections of the Standard that are of particular relevance are:

- Section 6 Segregation of Wastes - Wastes shall be effectively segregated according to their category at the time and source of generation, and bagged, packaged, or containerised, as appropriate.
- 11 Storage Requirements
  - 11.1 General - Clinical and related wastes should be safely stored in a vermin-proof, clean and tidy area.
  - 11.2 Requirements for waste generators
    - Containers storing clinical and related waste shall be closed.
    - There shall be dedicated clinical and related waste storage so that there is no mixing of wastes with any other stored materials.
    - Access to storage shall be limited to authorised persons.
    - Stored waste shall be labelled so that it is readily apparent what type of material is stored within
    - No liquid wastes, washdown waters or stormwater waste contaminated with clinical and related wastes shall be disposed of via the stormwater drainage system.
  - 11.3 Requirements for storage areas. The storage area shall be designed and constructed in the following manner:
    - The storage area shall have an impervious surface and shall contain any spillage.
    - Containment can be achieved by bunding, by a sump, inward sloping floor or tray.
    - Where practicable, all loading and unloading shall take place within the containment area.
    - Where vehicular access to a bunded area is required, the bund shall be rounded to prevent its damage by vehicles.
    - All wastes shall be stored and supervised in accordance with any relevant regulations and licensing arrangements.

## 4.5 Other legislation and guidance

The legislation and guidance outlined in Table 3 below should be referred to during the operational phases of the Project.

Table 3 Legislation and guidance

Legislation and Guidance	Objectives
State and National legislation and guidelines	
NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012	These better practice guidelines present information on waste minimisation and resource recovery as well as information on commonly used waste management provisions. The guidelines also provide benchmarks for assessing waste production rates in Australia.
NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027	Replacing the <i>NSW Waste Avoidance and Resource Recovery Strategy (2014-21)</i> (see below), the NSW Waste and Sustainable Materials Strategy 2041 focuses on the transition of NSW to a circular economy. The strategy focuses on minimising what is thrown away, and to use and reuse resources more efficiently, making them as productive as possible. The strategy identifies the need to identify infrastructure needs, the mandating of separation of some organic waste streams, and incentivising biogas generation from waste materials.
NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21	The <i>NSW Waste Avoidance and Resource Recovery Strategy 2014-21</i> is aimed at ultimately 'improving environment and community well-being by reducing the environmental impact of waste and using resources more efficiently' by presenting a framework intended to avoid and reduce waste generation, increase recycling, divert more waste from landfill, manage problem wastes better, reduce litter and reduce illegal dumping.
NSW EPA Resource Recovery Orders and Resource Recovery Exemptions	<p>The NSW EPA has issued a number of resource recovery orders and resource recovery exemptions under the POEO (Waste) Regulation 2014 for a range of wastes that may be recovered for beneficial re-use. These wastes typically include those from demolition and construction works, as well as operational wastes such as food waste.</p> <ul style="list-style-type: none"> <li>• Resource recovery orders present conditions which generators and processors of waste must meet to supply the waste material for beneficial re-use.</li> <li>• Resource recovery exemptions contain the conditions which consumers must meet to use waste for beneficial re-use.</li> </ul>
NSW EPA's Waste Classification Guidelines 2014	The NSW EPA <i>Waste Classification Guidelines</i> assists waste generators to effectively manage, treat and dispose of waste to ensure the environmental and human health risks associated with waste are managed appropriately and in accordance with the <i>POEO Act 1997</i> and is associated regulations.
<i>Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011</i>	The <i>POEO Act 1997</i> and <i>POEO Amendment Act 2011</i> are administered by the NSW Environment Protection Authority (NSW EPA) to enable the NSW Government to establish instruments for setting environmental standards, goals, protocols and guidelines. They outline the regulatory requirements for lawful disposal of wastes generated during the demolition, construction and operational phases of a development, as well as the system for licencing waste transport and disposal.
The Work Health and Safety Regulation 2017	The Work Health and Safety Regulation 2017 provide detailed actions and guidance associated with the topics discussed in <i>The Work Health and Safety Act 2011</i> . The primary aim of the regulation is to protect the health and safety of workers and ensure that risks are minimised in work environments. Workplaces are to ensure that they are compliant with the requirements specified in the regulations. The regulations discuss items such as actions that are prohibited or obligated in work environments, the requirements for obtaining licences and registrations, and the roles and responsibilities of staff in workplaces.

Legislation and Guidance	Objectives
<p><i>Waste Avoidance and Resource Recovery Act 2001</i></p>	<p>The <i>Waste Avoidance and Resource Recovery Act 2001</i> aims to promote waste avoidance and resource recovery and repeals the <i>Waste Minimisation and Management Act 1995</i>. Specific objectives of the <i>Waste Avoidance and Resource Recovery Act 2001</i> include:</p> <ul style="list-style-type: none"> <li>• Encouraging efficient use of resources</li> <li>• Minimising the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste</li> <li>• Ensuring industry and the community share responsibility in reducing/dealing with waste, and</li> <li>• Efficiently funding of waste/resource management planning, programs and service delivery.</li> </ul> <p>As of 2016, the addition to the Act of Part 5 defines the legislative framework for the 'Return and Earn Container Deposit Scheme' whereby selected beverage containers can be returned to State Government authorities for a monetary refund.</p>

## 4.6 Waste Avoidance, Reuse and Recycling Measures

### 4.6.1 Waste Avoidance

Waste avoidance measures include:

- Participating in take-back services to suppliers to reduce waste further along the supply chain
- Avoiding printing where possible
- Review of packaging design to reduce waste but maintain 'fit for purpose'
- Providing ceramic cups, mugs, crockery and cutlery rather than disposable items
- Purchasing consumables in bulk to avoid unnecessary packaging
- Presenting all waste reduction initiatives to staff as part of their induction program, and
- Investigating leased office equipment and machinery rather than purchase and disposal.

### 4.6.2 Re-use

Possible re-use opportunities include establishing systems with in-house and supply chain stakeholders to transport products in re-useable packaging where possible.

### 4.6.3 Recycling

Recycling opportunities include:

- Collecting and recycling e-wastes
- Flatten or bale cardboard to reduce number of bins required
- Paper recycling trays provided in office areas for scrap paper collection and recycling
- Collecting printer toners and ink cartridges in allocated bins for appropriate contractor recycling, and
- Development of 'buy recycled' purchasing policy.

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## 4.7 Communication Strategies

Waste management initiatives and management measures should be clearly communicated to building managers, owners, employees, customers and cleaners. Benefits of providing this communication include:

- improved satisfaction with services
- increased ability and willingness to participate in recycling
- improved amenity and safety
- improved knowledge and awareness through standardisation of services
- increased awareness or achievement of environmental goals and targets
- reduced contamination of recyclables stream
- increased recovery of recyclables and organics material, if implemented, and
- greater contribution to targets for waste reduction and resource recovery, the environment and heritage conservation.

To realise the above benefits, the following communication strategies should be considered:

- Use consistent signage and colour coding throughout the Project
- Ensure all staff are trained in correct waste separation and management procedures
- Provide directional signage to show location of and routes to waste storage area
- General waste and co-mingled recycling bins should be clearly labelled and colour-coded to ensure no cross contamination, where applicable
- Employees and cleaners should adhere to the WMP for compliance, in consultation with management, and
- Repair signs and labels promptly to avoid breakdown of communications.

## 4.8 Signage

As outlined in the DCP, the waste storage and collection areas should be provided with appropriate signage. These signs should clearly identify waste management procedures and provisions to contractors, tenants and visitors should be distributed around the Project.

Signs which clearly identify waste management procedures and provisions to staff and visitors should be distributed around the Project. Key signage considerations are:

- Clear and correct labelling on all waste and recycling bins, indicating the correct type or types of waste that can be placed into a given bin, as shown in Figure 3
- Signposts and directions to location of waste storage areas
- Clear signage in all waste storage areas to instruct users how to correctly separate waste and recycling
- Maintaining a consistent style colour scheme and system for signs throughout the Project, and
- Emergency contact information for reporting issues associated with waste or recycling management.

Colour-coded and labelled bin lids are necessary for identifying bins. All signage should conform to the relevant Australian Standard and use labels approved by the NSW EPA<sup>2</sup>. The design and use of safety signs for waste rooms and enclosures should comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment and clearly describes the types of materials designated for each bin.



Figure 3 - Example of bin labels for operational waste

## 4.9 Monitoring and Reporting

Monitoring is recommended to ensure waste and recycling management arrangements and provisions for the Project are functional, practical and are maintained to the standard outlined in this plan, at a minimum.

Visual assessments of bins and bin storage areas should be conducted by the building manager, at minimum:

- Weekly, in the first two months of operation to ensure the waste management system is sufficient for the operation, and
- Every six months, to ensure waste is being managed to the standards outlined in this document.

In addition, audits are to be conducted on a half-yearly basis to ensure WMP provisions are maintained.

Quantities of waste and recycling associated with disposal of waste and recycling, including dockets, receipts and other physical records should be recorded by the Building Manager. This is to allow reviews of the waste management arrangements and provisions at the site over time. Records of waste disposal should also be available to regulatory authorities such as the NSW Environmental Protection Authority and SafeWork NSW, upon request.

Any deficiencies identified in the waste management system, including, but not limited to, unexpected waste quantities, is to be rectified by the Building Manager as soon as it is practical. Where audits show that recycling is not carried out effectively, management should carry out additional staff training, signage re-examination and reviews of the waste management system where the audit or other reviewing body has deemed necessary. If this waste management plan no longer sufficiently meets the needs of the Project, review and updates to maintain suitability must be undertaken.

<sup>2</sup> NSW EPA waste signage and label designs <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>

## 4.10 Roles and Responsibilities

It is the responsibility of the Building Manager, or equivalent role, to implement this WMP and a responsibility of all tenants and staff to follow the waste management procedures set out by the WMP. SLR recommends that all subcontractors enlisted by the Client are to have roles and responsibilities identified and the Project's waste management system clearly explained. A summary of recommended roles and responsibilities are provided in Table 4.

Table 4 Operational waste management responsibility allocation

Responsible Person	General Tasks
Management	Ensure the WMP is implemented throughout the life of the operation.
	Update the WMP regularly, for example yearly, to ensure the Plan remains applicable.
	Undertake liaison and management of contracted waste collections.
	Organise internal waste audits on a regular basis.
	Manage any complaints and non-compliances reported through waste audits etc.
	Perform inspections of all waste storage areas and waste management equipment on a regular basis.
	Organise cleaning and maintenance requirements for waste management equipment.
	Monitor bins to ensure no overfilling occurs.
	Ensure effective signage, communication and education is provided to alert visitors, employees and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
	Ensure waste and recycling storage rooms are kept tidy.
	Ensure that regular cleaning and daily transfer of bins is being undertaken by the cleaners
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.
Cleaners and Staff	Removal of general waste, recyclables, cardboard waste and hazardous waste from floor areas for transfer to centralised waste and recycling collection rooms daily or as required.
	Cleaning of all bins and waste and recycling rooms on a weekly basis or as required.
	Compliance with the provisions of this WMP.
Gardening Contractor, as applicable	Removal of all garden organics waste generated during gardening maintenance activities for recycling at an off-site location or reuse as organic mulch on landscaped areas.

## 5 Construction Waste and Recycling Management

### 5.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state-specific targets. The NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) sets a target of 80% average recovery rate from all waste streams by 2030. Analysis by DPIE (2021) indicates that construction and demolition waste recovery rates in 2018-2019 were 77%.

It is anticipated that the waste minimisation measures in the following sections will assist the Development to meet these targets. Waste reporting and audits can be used to determine the actual percentage of wastes that are being, or have been, recycled during the site preparation, demolition and construction stages of The Development.

Waste generated during demolition and construction will be reused on site wherever possible, especially in the case of soil and fill. Waste and recyclables taken off site will be recycled, or disposed of, at facilities lawfully able to accept them.

## 5.2 Waste Streams and Classifications

The site preparation and construction activities are anticipated to generate the following broad waste streams:

- Site preparation waste as outlined in Section 5.4
- Construction waste as outlined in Section 5.5
- Packaging waste, and
- Work compound waste from on-site employees.

A summary of likely waste types generated from site preparation and construction activities, along with their waste classifications and proposed management methods are provided in Table 5. For further information on how to determine a waste's classification refer to the NSW EPA (2014) *Waste Classification Guidelines*.<sup>3</sup> Further information on managing site preparation and construction wastes is also available on the NSW EPA website.<sup>4</sup>

**Table 5 Potential waste types, classifications and management methods for demolition and construction**

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Site Preparation and Construction		
Sediment fencing, geotextile materials	General solid waste (non-putrescible)	Reuse at other sites where possible or disposal to landfill
Concrete	General solid waste (non-putrescible)	Off-site recycling for filling, levelling or road base
Bricks and pavers	General solid waste (non-putrescible)	Cleaned for reuse as footings, broken bricks for internal walls, crushed for landscaping or driveway use, off-site recycling
Gyprock or plasterboard	General solid waste (non-putrescible)	Off-site recycling or returned to supplier
Sand or soil	General solid waste (non-putrescible)	Off-site recycling
Metals such as fittings, appliances and bulk electrical cabling, including copper and aluminium	General solid waste (non-putrescible)	Off-site recycling at metal recycling compounds and remainder to landfill
Conduits and pipes	General solid waste (non-putrescible)	Off-site recycling

<sup>3</sup> Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

<sup>4</sup> Available online from <http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Timber	General solid waste (non-putrescible)	Off-site recycling; Chip for landscaping; Sell for firewood <i>Treated:</i> reused for formwork, bridging, blocking, propping or second-hand supplier <i>Untreated:</i> reused for floorboards, fencing, furniture, mulched secondhand supplier, and remainder to landscape supplies.
Doors, windows, fittings	General solid waste (non-putrescible)	Off-site recycling at secondhand supplier
Insulation material	General solid waste (non-putrescible)	Off-site disposal
Glass	General solid waste (non-putrescible)	Off-site recycling, glazing or aggregate for concrete production
Asbestos	Hazardous waste	Off-site disposal to a licensed landfill facility.
Fluorescent light fittings and bulbs	Hazardous waste	Off-site recycling or disposal, contact <i>FluoroCycle</i> for more information <sup>5</sup>
Paint	Hazardous waste	Off-site recycling, Paintback collection <sup>6</sup> or disposal
Synthetic rubber or carpet underlay	General solid waste (non-putrescible)	Off-site recycling, reprocessed for other uses
Ceramics including tiles	General solid waste (non-putrescible)	Off-site recycling
Carpet	General solid waste (non-putrescible)	Off-site recycling, disposal or reuse
Packaging		
Packaging materials, including wood, plastic, including stretch wrap or LDPE, cardboard and metals	General solid waste (non-putrescible)	Off-site recycling
Wooden or plastic crates and pallets	General solid waste (non-putrescible)	Reused for similar projects, returned to suppliers, or off-site recycling. Contact <i>Business Recycling</i> for more information <sup>7</sup>
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage
Recyclable beverage containers, such as glass and plastic bottles, aluminium cans and steel cans	General solid waste (non-putrescible)	Recycling at off-site licensed facility or at NSW container deposit scheme 'Return and Earn' facility <sup>8</sup>
Clean paper and cardboard	General solid waste (non-putrescible)	Paper and cardboard recycling at off-site licensed facility

<sup>5</sup> Available online from <http://www.fluorocycle.org.au/> or <http://www.environment.gov.au/settlements/waste/lamp-mercury.html>

<sup>6</sup> Available online from <https://www.paintback.com.au/>

<sup>7</sup> Available online from <https://businessrecycling.com.au/>

<sup>8</sup> Available online from <http://returnandearn.org.au/>

Waste Types	NSW EPA Waste Classification	Proposed Management Method
General domestic waste generated by workers such as soiled paper and cardboard, food and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

## 5.3 Council Requirements

### 5.3.1 Demolition

Section 8 of Council's Waste Management Guidelines – Revision 5 – May 2019 is the Lake Macquarie Development Control Guidelines Demolition (Deconstruction).

The Demolition Guidelines state that *Where the development involves demolition works, a Demolition Waste Management Plan (WMP) must be completed and submitted with a Development Application...* A demolition waste management plan has been completed as far as it is possible to do so and is attached in Appendix A.

The Demolition Guidelines also state:

2. *The Demolition WMP must describe how the proposal avoids creating waste and how it maximises the reuse and recycling of demolition materials.*
3. *The following must be shown on scaled plans to be submitted with the development application for demolition and construction stages:*
  - a. *waste storage area(s) with bins and equipment shown to scale;*
  - b. *waste collection area(s) with bins shown to scale (if different from storage areas);*
  - c. *waste carting route(s) from buildings to waste storage area(s);*
  - d. *bin carting route(s) from waste storage to collection point(s) (if different from storage areas); and*
  - e. *the waste collection vehicle route, swept path and clearances (only for developments proposing on-site collection).*

### 5.3.2 Construction

Section 9 of Council's Waste Management Guidelines – Revision 5 – May 2019 is the Lake Macquarie Development Control Guidelines Construction Waste Management.

The Construction Guidelines state that *Where the development involves demolition (sic) works, a Construction Waste Management Plan (WMP) must be completed and submitted with a Development Application...* A construction waste management plan has been completed as far as it is possible to do so and is attached in Appendix A.

The Construction Guidelines also state:

2. *Construction Waste Management Plans must describe how the proposal avoids creating waste and how it maximises the reuse and recycling of demolition and construction materials.*

3. The following must be shown on scaled plans to be submitted with the development application for demolition and construction stages:

- a. waste storage area(s) with bins and equipment shown to scale;
- b. waste collection area(s) with bins shown to scale (if different from storage areas);
- c. waste carting route(s) from buildings to waste storage area(s);
- d. bin carting route(s) from waste storage to collection point(s) (if different from storage areas); and
- e. the waste collection vehicle route, swept path and clearances (only for developments proposing on-site collection).

## 5.4 Site Preparation

### 5.4.1 Buildings for Demolition

The site is vacant and features no structures or buildings. Images from Six Maps and Google Earth show some areas of remnant concrete and asphalt. The current site with boundary and estimates of the extend of concrete and asphalt is shown in Figure 4 below.



Figure 4 - Current site layout

### 5.4.2 Demolition Waste Generation Rates

The Demolition Guidelines do not provide any assistance for demolition waste quantities in this case.

As an alternative, SLR has referred to *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* published by the Australian Asphalt Pavement Association in calculating waste demolition quantities.

The demolition waste generation rates used are shown in Table 6 below.

**Table 6 Demolition waste generation rates**

Area	Area (m <sup>2</sup> )	Waste types and quantities (m <sup>3</sup> )		
		Concrete	Asphalt	Granular Base
Concrete	1,000	22.5 <sup>9</sup>	30 <sup>10</sup>	125 <sup>11</sup>
Asphalt	1,000	30.0 <sup>12</sup>	0	0

The image from SixMaps (Figure 4) has been used to calculate the areas of remnant concrete and asphalt. These areas are shown in Table 9 along with estimates of the quantities of demolition waste that may be generated.

**Table 7 Estimated types and quantities of demolition waste**

Area	Area (m <sup>2</sup> )	Waste types and quantities (m <sup>3</sup> )		
		Concrete	Asphalt	Granular Base
Concrete	1,092	33	0	0
Asphalt	2,576	77	77	322
Total	3,668	110	77	322

## 5.5 Construction Waste Types and Quantities

The Construction Guidelines do not provide any assistance for construction waste quantities. As an alternative, SLR has adopted the 'Office' waste generation rates from Appendix A of *The Hills' Development Control Plan* in estimating the type and quantities of waste generated from construction of the proposed buildings. The construction waste generation rates used are shown in Table 8 below.

**Table 8 Construction waste generation rates**

Rate Type	Area (m <sup>2</sup> )	Waste types and quantities (m <sup>3</sup> )						
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other
Office	1,000	5.1	18.8	8.5	8.6	8.8	2.75	5
Carpark	1,000		3.1			1.4		0.8

The areas shown in Table 9 are based on the GBA schedule shown in *20456 220805 CURRENT ILU Development Schedule.pdf*. Estimates of the quantities of construction waste generated from the Development are shown in Table 9 below.

<sup>9</sup> Estimate of kerbside profile

<sup>10</sup> 30 mm depth for passenger car parking areas of this size. *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* Australian Asphalt Pavement Association. Table 10 Passenger Car Parking Areas, 50-500 Bays

<sup>11</sup> 125 mm depth for passenger car parking areas of this size. *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* Australian Asphalt Pavement Association. Table 10 Passenger Car Parking Areas, 50-500 Bays

<sup>12</sup> Assuming 300 mm concrete thickness

Table 9 Estimated types and quantities of construction waste

Development Component	Area (m <sup>2</sup> )	Waste types and quantities (m <sup>3</sup> )						
		Timber	Concrete	Bricks	Gyprock	Sand or Soil	Metal	Other
Residential, office and administration areas	51,022	260	959	434	439	449	140	255
Car parking	15,066	0	461	0	0	215	68	122
Total	66,088	260	1,420	434	439	664	208	377

## 5.6 Waste Avoidance Strategies

The Building Contractor, Building Designer and/or those in equivalent roles should follow better practice waste management and the principles of Ecologically Sustainable Development.

Council's Construction Guidelines provide the following advice.

### *Avoiding construction waste*

*The following measures may save money and resources while minimising waste at the construction stage of development and should be considered:*

- *ordering the right quantities of materials (Purchasing Policy);*
- *prefabrication of materials;*
- *reusing formwork;*
- *modular construction and basic designs to reduce the need for offcuts;*
- *minimising site disturbance and limiting unnecessary excavation;*
- *source-separation of offcuts to facilitate reuse, resale or efficient recycling;*
- *purchase materials in bulk where possible. Avoid individual packaging for volume purchases.*
- *use returnable containers and packing materials;*
- *limit preparation of materials to quantities that can be installed within their expiration times (i.e. materials that are heated, mixed, exposed to environmental conditions, or otherwise subject to spoilage). Working in smaller batches will reduce the necessity to throw out expired or spoiled materials. Ensure volatile materials and materials that degrade when exposed to heat, cold, or moisture are protected from spoilage and are not wasted;*
- *planning ahead for the deconstruction of a building and infrastructure when its useable life has expired (e.g. can components be easily dismantled and separated for reuse or recycling);*
- *choice of landscaping to reduce ongoing maintenance and generation of garden waste; and*
- *co-ordination and sequencing of various trades to avoid having to demolish and redo work.*

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Other recommendations for the Building Designer include:

- Using prefabricated components
- Using low formaldehyde wood products, post-consumer reused timber and/or Forest Stewardship Council certified timber
- Using fittings and furnishings that have been recycled, are made from or incorporate recycled materials and have been certified as sustainable or environmentally friendly by a recognised third-party certification scheme
- Preferentially using building materials, fittings and furnishings, including structural framing, roofing and façade cladding, that have longer life and better re-use and recycling potential
- Reducing the use of polyvinyl chloride products
- Preferentially using paints, floor coverings and adhesives with low VOC (volatile organic compound) content
- Avoiding unsustainable timber imports including western red cedar, oregon, meranti, luan or merbau
- Selecting materials based on low embodied energy properties that suit the Project, such as recycled materials including recycled steel and glass-wool insulation, or concrete with slag and fly ash content
- Centralising wet areas together to minimise piping, and
- Designing for deconstruction rather than demolition.

Recommendations for the Building Contractor include:

- Applying practical building designs and construction techniques
- Minimising excavation works
- Investigating leased equipment and machinery rather than purchase and disposal
- Sorting and segregating site preparation and construction wastes to ensure efficient recycling of wastes
- Preferentially selecting building materials, fittings and furnishings, including structural framing, roofing and façade cladding, that have longer life and better re-use and recycling potential
- Store wastes on-site appropriately to prevent cross-contamination and/or mixing of different waste types
- Reducing packaging waste by:
  - Returning packaging to suppliers where practicable to reduce waste further along the supply chain
  - Purchasing in bulk
  - Requesting cardboard or metal drums rather than plastics
  - Requesting metal straps rather than shrink wrap, and
  - Using returnable packaging such as pallets and reels.
- Arranging deliveries 'as needed' to mitigate degradation, weathering or moisture damage, and
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures.

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## 5.7 Re-use, Recycling and Disposal

Effective management of materials and construction and demolition waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only waste that cannot be cost effectively reused or recycled will be sent to landfill or appropriate disposal facilities.

Council's Construction Guidelines provide the following advice.

### *Reuse and recycling*

*Instead of purchasing expensive new materials, consider:*

*1. Reusing on site the resources that are already on site. This will save money from purchasing and transporting new goods and from saved waste disposal costs of the demolition wastes.*

*2. Buying second-hand materials, or materials with recycled content. This will save money while supporting a closed loop local market for resources that are generated from demolition and construction sites for reuse and recycling.*

*The NSW Office of Environment and Heritage advised that the following construction wastes should be close to 100 per cent recyclable if properly source-separated and kept uncontaminated:*

- steel;*
- non-ferrous metals;*
- glass;*
- paper;*
- concrete;*
- brick; and*
- cardboard packaging material.*

*Ideas for reuse on site:*

- excess concrete can be reused on site, by pouring into moulds to create pavers, or garden decorations;*
- full tiles, bricks and pavers can be set aside as spares;*
- residual paint may be able to be left for later occupants to conduct repairs with colour-matched paint;*
- broken bricks and tiles can be used as drainage aggregate;*
- timber frame and timber board offcuts can be used for small work and in forming up;*
- some packaging can be reused as storage containers;*
- reuse non-returnable containers on the jobsite to the maximum extent possible. Develop one-hundred-and-one-uses for plastic barrels, buckets and tubs;*
- give away non-returnable materials and containers for reuse if appropriate. Check if donations of resources can be tax deductible;*
- use scrap in lieu of cutting full new materials. Direct subcontractors and trades to collect and keep scrap at cutting and fabricating locations;*

- *collect paints and liquids from almost-empty containers; avoid disposing of useable materials simply because there is not enough in one container to finish a job;*
- *recycle damaged components, products and materials, or disassemble them into their constituent materials for recycling;*
- *establish a return or buy-back arrangement with suppliers. Alternatively, unused, or used but serviceable materials and products can be sold to architectural salvage or used materials retail outlets; and*
- *product suppliers, or pallet manufacturers, may take back the pallets.*

*Suppliers may also take back offcuts and any residual construction products such as plasterboard for use elsewhere or in pre-consumer recycling processes. Formal Industry Product Stewardship programs are listed on the Commonwealth Government environment website [www.environment.gov.au/topics/environment-protection/nwp/reporting/product-stewardship](http://www.environment.gov.au/topics/environment-protection/nwp/reporting/product-stewardship), including the Australian Packaging Covenant <http://www.packagingcovenant.org.au/> and there are also individual businesses that take back residual products. When purchasing products for the construction, include this product stewardship take back as a selection criterion.*

*If offcuts and residual product resources are sent offsite for recycling or reuse at another site or through a recycler to be on sold for reuse, then the qualities of any waste resource is to be used in the ground, on the ground surface or as retaining wall the waste resource must meet the requirements spelt out in the Resource Recovery Exemptions and Orders published on NSW Environment Protection Authority's (EPA) website at <http://www.epa.nsw.gov.au/wasteregulation/recovery-exemptions.htm>.*

*EPA currently lists the following Resource Recovery Exemptions and Orders that are relevant to demolition:*

- *cement fibre board; and*
- *plasterboard.*

*Application can also be made to EPA for a Resource Recovery Exemption and Order for other materials. The EPA has published guidelines to applying for a Resource Recovery Exemption – see <http://www.epa.nsw.gov.au/wasteregulation/apply-exemption.htm>*

*If the resource is reused on a structure, such as reusing windows or doors, or in temporary hoardings or formwork, then this is not application to land and does not need to meet such requirements. Reused components, as with new components, need to meet building quality and safety requirements. Clean timber waste, pallets, sawdust and wood shavings can be recycled into broiler chicken bedding. Information on the specifications for this are available on NSW Environment Protection Authority website – Specification for the Supply of Recycled Urban Wood for Broiler Chicken Bedding 2012 and Quality Control Guidelines for Production of Broiler Bedding from Urban Wood Residue, prepared in partnership with the Timber Development Association (NSW) Ltd. "Urban wood" includes materials such as sawn timber offcuts, saw dust, wood shavings, packaging crates and pallets but does not include preservative treated or coated wood or engineered wood products.*

*In preparing the Waste Management Plan (WMP), if the various construction contractors have not yet been selected, then job specifications to be given to the bidding contractors will need to require the contractors to maximise waste avoidance, diversion of waste to reuse and recycling and use of recycled content or second-hand materials. These specifications will need to be provided in the development application WMP, with the remaining WMP details to be provided prior to issuing of a construction certificate once the contractors are engaged.*

*In accordance with good practice waste management, the following specific procedures will be implemented:*

- On-site source separation to ensure efficient recycling
- Concrete, tiles and bricks reused or recycled off-site
- Steel recycled off-site, and all other metals recycled where economically viable
- Framing timber recycled off-site
- Windows, doors and joinery off-site, where possible
- All glass that can be economically recycled will be recycled
- All solid waste timber, brick, concrete, rock that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner
- Re-use of materials on-site where possible
- Separate waste bins for recyclable and non-recyclable general wastes
- Assess excavation spoil for contamination status and beneficial re-use
- Retain used crates for storage purposes unless damaged
- Recycle cardboard, glass and metal wastes
- Provide sufficient space for storage of garden waste and other waste materials on-site
- Dispose of all asbestos, hazardous and/or intractable wastes in accordance with SafeWork NSW and NSW EPA requirements
- All used crates will be stored for reuse unless damaged
- Deliver batteries to drop off-site recycling facility, and
- Where source separation is utilised, materials are to be kept uncontaminated to guarantee the highest possible re-use value.

## 5.8 Waste Separation, Storage and Servicing

### 5.8.1 Waste Separation and Storage

Waste materials produced from demolition and construction activities will be separated at the source and stored separately on-site.

It is anticipated that there will be enough space on-site for separate storage in, for example, separate skip bins or appropriately managed stockpiles, of the following waste types:

- Bricks, concrete and scrap metal
- Metal and steel, in a condition suitable for recycling at metal recycling facilities
- Timber
- Glass
- Hardstand rubble
- Uncontaminated excavation spoil, if present
- Contaminated excavation spoil, if present

- Hazardous waste, if present
- Paper and cardboard
- General co-mingled recycling waste, and
- Non-recyclable general waste.

If there is insufficient space on-site for full separation of waste types, the site manager, or equivalent role, should consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled before removal from the site.

### 5.8.2 Waste Storage Areas

Waste storage areas will be accessible and allow sufficient space for storage and servicing requirements. The storage areas will also be flexible in order to cater for change of use throughout the project. Where space is restricted, dedicated stockpile areas will be delineated on the site, with regular transfers to dedicated skip bins for sorting.

All waste placed in skips or bins for disposal or recycling will be adequately contained to ensure that waste does not fall, blow, wash or otherwise escape from the site. Waste containers and storage areas will be kept clean and in a good state of repair.

Applicable weather protection measures should be considered for storage spaces.

In accordance with good practice waste management, areas designated for waste storage will:

- Allow unimpeded access by site personnel and waste disposal contractors
- Take into account environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation
- Allow sufficient space for the storage of garden waste and other waste materials on-site
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation
- Consider visual amenity, safety and accessibility in their selection, and
- Not present hazards to human health or the environment.

### 5.8.3 Waste Servicing and Record Keeping

The Site Manager or equivalent role will:

- Arrange for suitable waste collection contractors to remove any construction waste from site
- Ensure waste bins are not filled beyond recommended filling levels
- Ensure that all bins and loads of waste materials leaving site are covered
- Maintain waste disposal documentation detailing, at a minimum:
  - Descriptions and estimated amounts of all waste materials removed from site
  - Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables

- Records of waste and recycling collection vehicle movements, for example, date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility, and
- Waste classification documentation for materials disposed to off-site recycling or landfill facilities.
- Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as Council, SafeWork NSW or NSW EPA, and
- Remove waste during approved hours.

If skips and bins are reaching capacity, removal and replacement will be organised as soon as possible. All site-generated building waste collected in the skips and bins will leave the site and taken to a site lawfully able to accept them.

#### 5.8.4 Waste Servicing and Transport

The frequency of the waste removal will, in most cases, be dictated by the quantities of material being deposited into each of the dedicated skip bins. All skips leaving the site will be covered with a suitable tarpaulin to ensure that the spillage of waste from the skips while in transit is eliminated.

### 5.9 Signage

Standard signage will be posted in all waste storage and collection areas. All waste containers will be labelled correctly and clearly to identify stored materials.

Signs approved by the NSW EPA for labelling of waste materials are available online<sup>13</sup> and should be used where applicable. A selection of the EPA's signs is shown in Figure 5.



Figure 5 - Examples of NSW EPA labels for waste and skip bins

### 5.10 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of the Development will undergo induction training regarding waste management.

Induction training will cover, as a minimum, an outline of the WMP including:

<sup>13</sup> NSW EPA approved waste materials signage <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs>

- Legal obligations and targets
- Emergency response procedures on-site
- Waste priorities and opportunities for reduction, reuse and recycling
- Waste storage locations and separation of waste
- Procedures for suspected contaminated and hazardous wastes
- Waste related signage
- The implications of poor waste management practices, and
- Responsibilities and reporting, including identification of personnel responsible for waste management and individual responsibilities.

## 5.11 Monitoring and Reporting

During the demolition and construction phases, the following monitoring practices will be undertaken to improve demolition and construction waste management and to obtain accurate waste generation figures:

- Conduct waste audits of current projects where feasible.
- Note waste generated and disposal methods.
- Look at past waste disposal receipts.
- Record this information to track waste avoidance, reuse and recycling performance and to help in waste estimations for future waste management plans.

Records will be maintained for all waste quantities that are recycled, reused or removed by a contractor. All demolition and construction waste dockets will be kept which show which facility received the material for recycling or disposal.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists and logs recorded for reporting to the site manager or equivalent role on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits should be carried out by the building contractor or equivalent role to gauge the effectiveness and efficiency of waste segregation procedures and recycling and reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training will be undertaken and signage will be re-examined.

## 5.12 Roles and Responsibilities

All personnel have a responsibility for their own environmental performance and compliance with all legislation. It will be the responsibility of the site manager, or equivalent role, to implement the WMP, and the responsibility of employees and subcontractors to ensure that they comply with the WMP at all times.

Suggested roles and responsibilities for waste management at the site are provided in Table 10. Where possible, a construction environmental manager, or equivalent role, should be appointed for the site preparation and construction work. An equivalent construction environmental manager role is defined to be a person dedicated to overseeing the environmental compliance and performance of a development. Where a construction environmental manager is not appointed, responsibilities in Table 10 for the construction environmental manager will become those of the site manager.

**Table 10 Suggested roles and responsibilities for site preparation, demolition and construction waste management**

Role	Responsibilities
Site Manager	<ul style="list-style-type: none"> <li>• Ensuring plant and equipment are well maintained</li> <li>• Ordering only the required amount of materials</li> <li>• Keeping materials segregated to maximise reuse and recycling</li> <li>• Ensuring that waste sorting and storage areas are maintained in a tidy and functional state and do not present hazards to human health or the environment</li> <li>• Ensure hazardous or contaminated materials are appropriately managed and disposed of</li> <li>• Ensure site records and documentation is kept and is complete</li> <li>• Ensure this WMP is implemented, and</li> <li>• Liaise with Council and regulatory authorities as required.</li> </ul>
Construction Environmental Manager or equivalent	<ul style="list-style-type: none"> <li>• Ensuring staff and contractors are aware of site requirements for waste management</li> <li>• Establishing separate skips and stockpiles and recycling bins for effective waste segregation and recycling purposes</li> <li>• Developing or identifying, and using, local commercial opportunities for re-use of materials where re-use on-site is impractical</li> <li>• Facilitate correct waste collection</li> <li>• Engage suitable waste collection and disposal contractors</li> <li>• Approval of off-site waste disposal locations and checking licensing requirements</li> <li>• Arranging for the assessment of potentially hazardous or contaminated materials</li> <li>• Arranging appropriate contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements</li> <li>• Monitor and maintain site environmental controls and</li> <li>• Monitoring, inspection and reporting requirements.</li> </ul>

## 6 Operational Waste Management

### 6.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state specific targets. The NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) sets a target of 80% average recovery rate from all waste streams by 2030. Analysis by DPIE (2021) indicates that commercial and industrial waste recovery rates in 2019 were 53%.

It is anticipated that the waste minimisation measures in the following sections will assist the Project to meet the state’s targets. Waste reporting and audits can be used to determine the actual percentage of waste that are being, or have been, recycled during operation.

## 6.2 Waste Streams and Classifications

The Uniting Charlestown Development incorporates a residential aged care facility, seniors housing and a residential flat building, and based on Council’s and Uniting’s guidelines, will include the separation of the following waste streams:

- General waste
- Paper and Cardboard Recycling
- Comingled Recycling
- Food and garden waste
- Bulky waste
- Problem waste
- Clinical and related waste.

Waste types, their associated waste classifications, and management methods are shown in Table 11.

Table 11 Potential waste types, classifications and management methods for operational waste

Waste Types	NSW EPA Classification	Proposed Management Method
General Operations		
Clean office paper	General solid (non-putrescible) waste	Paper recycling at off-site licensed facility
Cardboard including bulky cardboard boxes	General solid (non-putrescible) waste	Cardboard recycling at off-site licensed facility
Recyclable beverage containers, glass and plastic bottles, aluminium cans, steel cans	General solid (non-putrescible) waste	NSW container deposit scheme 'Return and Earn', container recycling at off-site licensed facility
Food waste	General solid (putrescible) waste	Compost on or off-site or dispose to landfill with general garbage
Batteries	Hazardous waste	Off-site recycling, alternatively contact the Australian Battery Recycling Initiative for more information
Mobile Phones	Hazardous waste	Off-site recycling; can be taken to the Mobile Muster program. Contact Mobile Muster for more information
Bulky polystyrene	General solid (non-putrescible) waste	Off-site recycling or disposal at landfill
Furniture	General solid (non-putrescible) waste	Off-site reuse or disposal to landfill
E-waste	Hazardous waste	Off-site recycling
Printer toners and ink cartridges	Hazardous waste	Off-site recycling, free disposal box or bags and pickup service exists for printer toners and ink cartridges
General garbage, including non-recyclable plastics	General solid (putrescible and non-putrescible) waste	Disposal at landfill
Maintenance		

Waste Types	NSW EPA Classification	Proposed Management Method
Spent smoke detectors <sup>14</sup>	General solid (non-putrescible) waste, or Hazardous waste (some commercial varieties)	Disposal to landfill, or off-site disposal at licensed facility
Glass, other than containers	General solid (non-putrescible) waste	Off-site recycling
Light bulbs and fluorescent tubes	Hazardous waste	Off-site recycling or disposal, contact FluoroCycle <sup>15</sup> or Lamp Recyclers <sup>16</sup> for more information
Cleaning chemicals, solvents, area wash downs, empty oil or paint drums, chemical containers	Hazardous waste if containers used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid (non-putrescible) waste if containers cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility.
Garden organics - lawn mowing, tree branches, hedge cuttings, leaves	General solid (non-putrescible) waste	Reuse on-site or contractor removal for recycling at licenced facility

For further information on how to determine a waste's classification can be found in the NSW EPA (2014) Waste Classification Guidelines.<sup>17</sup> Suggestions for recycling drop off locations and contacts can be found at Business Recycling.<sup>18</sup>

## 6.3 Waste Generation Rates

### 6.3.1 Sources

For each different type of development and waste stream, SLR applied different waste generation rates and estimation methods. Table 12 below shows the sources for waste generation rates for each part of the development.

Table 12 References Used for Waste Generation Rates and Estimation Methods

Building	Development	Waste Stream	Reference
Commercial Development			
A	RAC and ALAs	General waste, paper and cardboard recycling, comingled recycling, food, and garden waste	Section 3 – RAC Room Data Sheets – Waste Room from The Uniting Design Guide, Version 1, 2019
		Clinical and related waste	Section 3 – RAC Room Data Sheets – Waste Room from The Uniting Design Guide, Version 1, 2019
		Bulky waste	Section B from the City of Sydney, Guidelines for Waste Management in New Developments

<sup>14</sup> The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) requires that when more than 10 smoke alarms, particularly americium-241 sources, are collected for bulk disposal they must be treated as radioactive waste and the requirements of the National Health and Medical Research Council's Code of practice for the near-surface disposal of radioactive waste in Australia (1992) must be met.

<sup>15</sup> <https://www.fluorocycle.org.au/>

<sup>16</sup> <https://www.lamprecyclers.com.au/>

<sup>17</sup> <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

<sup>18</sup> <https://businessrecycling.com.au/>

Building	Development	Waste Stream	Reference
	Café, hair salon, chapel, pastor, club, and all admin, meeting, and office areas.	General waste, paper and cardboard recycling and comingled recycling	Table 13 from Council's Waste Management Guidelines – Operational Waste Management – for Commercial and Retail, Recreation and Tourism Facilities
		Food waste	Reference A from the City of Sydney, Guidelines for Waste Management in New Developments
		Bulky waste	Section D from the City of Sydney, Guidelines for Waste Management in New Developments
		Cooking oil	N/a. One Auscol oil container
Residential Development			
B, C	ILUs	General waste, paper and cardboard recycling, comingled recycling, food and garden waste	Section 3.3.5 of Waste Management Guidelines - Operational Waste Management - For Multiple Dwelling Developments.
		Bulky waste	Section B from the City of Sydney, Guidelines for Waste Management in New Developments
	Wellness Centre and Club House	General waste, paper and cardboard recycling and comingled recycling	Table 13 from Council's Waste Management Guidelines – Operational Waste Management – for Commercial and Retail, Recreation and Tourism Facilities
D	RFB	General waste, paper and cardboard recycling, comingled recycling, food and garden waste	Section 3.3.5 of Waste Management Guidelines - Operational Waste Management - For Multiple Dwelling Developments.
		Bulky waste	Section B from the City of Sydney, Guidelines for Waste Management in New Developments

### 6.3.2 Clinical and related waste

Although requirements for clinical and related waste for Aged Care Facilities are provided in the DCP, exact bin requirements are not. Bin requirements provided by the Uniting Design Guide for clinical waste were used instead.

### 6.3.3 Food waste

While Council specifies that food waste should be collected separately from Building A, it does not provide any food waste generation rates and only advises that some premises produce a high proportion of food waste while others produce a low proportion. The Uniting Design Guide also does not provide any food waste generation rates.

For the operations of Building A, excluding the RACs and ALAs, SLR has applied food waste generation rates published in the City of Sydney Guidelines for Waste Management in New Developments. Based on SLR's experience, these provide a useful guide for food waste generation rates.

### 6.3.4 Building A Waste

The waste generation rates applied to these operations at the development are shown in Table 13.

Table 13 Waste Generation Rates for Building A

Type of Development	Waste Generation Rates (L/100 m <sup>2</sup> /day)		
	General waste	Recycling	Food Waste
Pastor, Consult, Reception, Meeting, Office, Staff Room, Training Room	16	12	5
Chapel	0	0	0
Multipurpose room	50	27	40
Central Kitchen	460	490	100
Hair Salon	62	55	5
Cafe	500	320	100

The waste generation rates for the RACs and ALAs in Building A are shown in Table 14. These are from the Uniting Design Guide and expressed as the number of bins.

Table 14 Waste Bin Requirements for RACs and ALAs

Type of Development	Number of bins for every five sets of 20 beds					
	General waste	Recycling	Food and Garden Waste	Contaminated Waste	Medical Sharps	Cytotoxic Waste
RAC, ALA	1 x 1,100 L	1 x 1,100 L	1 x 1,100 L	1 x 240 L	1 x 240 L	1 x 240 L

The Uniting Design Guide specifies one 240 L bin for green waste, however, SLR has updated this to be one 1,100 L for both food and garden waste. This is in accordance with Council's Waste Management Guidelines which specify that food and garden waste should be collected together.

The Uniting Design Guide also specifies that cytotoxic waste should be stored in the waste room but does not specify a bin capacity. SLR has allows one 240 L. For medical sharps, the Uniting Design Guide states that smaller 2.18 L lockable sharps bins will be placed in a 240 L bin.

The waste bin requirements for general waste, recycling and food and garden waste identified in Table 14 are based on assumed collection frequencies of once a week for general waste, recycling and food and garden waste.

### 6.3.5 Buildings B, C and D Waste

Council's residential waste collection frequencies are shown in Table 15.

Table 15 Council's Collection Frequencies

	General waste	Recycling	Food Waste
Collection Frequency	Once every fortnight	Once every fortnight	Once every week

The waste bin rates applied for residential dwellings are shown in Table 16. These are specified in Section 3.3.5 of Council's Waste Management Guidelines.

Table 16 Waste Bin Requirements for ILUs and RFBs

Type of Development	General waste	Recycling	Food and Garden Waste
ILU, RFB	60 L per unit	60 L per unit	120 L per unit

## 6.3.6 Bulky waste

### 6.3.6.1 Building A

Council specifies that bulky waste storage space is required for but does not provide any guidance on space requirements. The Uniting Design Guide does not provide any bulky waste generation rates or storage requirements.

SLR proposes storage space of 4 m<sup>2</sup> be allowed with collections undertaken at frequencies adequate enough to prevent an accumulation of waste.

### 6.3.6.2 Buildings B, C and D

Council specifies that 0.5 m<sup>2</sup> of bulky waste storage space be provided for every dwelling. Based on SLR's experience, this is only suitable for developments with a small number of dwellings. For the Uniting Charlestown Development, which has more than 485 dwellings, this would require at least 200 m<sup>2</sup> of space for bulky waste be made available, well in excess of what would be reasonably required.

Instead SLR proposes storage space of 4 m<sup>2</sup> be allowed for each building with collections undertaken at frequencies adequate enough to prevent an accumulation of waste.

## 6.4 Estimated Quantities of Operational Waste

The weekly waste quantities anticipated to be generated by the Development are shown in Table 17. These are based on:

- The rates identified in Section 6.3 above
- The floor areas for Building A shown in the architectural drawings
- The ILU, RFB, RAC and ALA breakdowns provided in the architectural packages by the client
- Office, reception and administration areas operating five days per week
- Other areas operating seven days per week, and
- The recycling streams consisting of approximately 60% paper and cardboard, and 40% recyclable containers.

All areas shown in Table 17 are identified by the names used on the architectural drawings.

Table 17 Waste Generation Quantities

Building	Level	Use	Waste Quantities (L/week)			
			General Waste	Paper and Cardboard Recycling	Comingled Recycling	Food and Garden Waste
A	Ground	Multipurpose Hall/Club	634	205	137	507
	Ground	Chapel	-	-	-	-
	Ground	Pastoral office	14	6.5	4.3	4.5
	Ground	Consult	11	5.1	3.4	3.5
	Ground	Consult	11	5.1	3.4	3.5
	Ground	Reception	12	5.4	3.6	3.8

Building	Level	Use	Waste Quantities (L/week)			
			General Waste	Paper and Cardboard Recycling	Comingled Recycling	Food and Garden Waste
	Ground	Meeting	27	12.4	8.2	8.6
	Ground	Office	97	44	29	30
	Ground	Meeting	12	5.3	3.5	3.7
	Ground	Office	11	4.9	3.3	3.4
	Ground	Office	11	4.9	3.3	3.4
	Ground	Office	12	5.3	3.5	3.7
	Ground	Office	12	5.3	3.5	3.7
	Ground	Central Kitchen	3,918	2,504	1,670	852
	Ground	Meeting	16	7	4.9	5.1
	Ground	Hair Salon	131	70	47	11
	Ground	Café	2,175	835	557	435
	Ground	Staff Room	51	23	15	16
	Upper Ground	Reception	49	22	15	15
	Upper Ground	Work Area	248	112	74	78
	Upper Ground	Print	9	4.0	2.7	2.8
	Upper Ground	Meeting	30	14	9.1	9.5
	Upper Ground	Meeting	25	11.3	7.5	7.9
		RACs and ALAs	1,474	884	590	1,608
		Total – Building A	8,992	4,796	3,197	3,619
B		82 ILUs	4,920	2,952	1,968	9,840
		Wellness Centre	266	120	80	83
		Club House	215	97	64	-
		Total – Building B	5,401	3,168	2,112	9,923
C		107 ILUs	6,420	3,852	2,568	12,840
D		133 RFBs	7,980	4,788	3,192	15,960

## 6.5 Waste Storage Area Size

### 6.5.1 Collection frequencies and bin dimensions

Table 18 below shows the number and type of bins proposed, the expected collection frequencies and the amount of space required for each building to store these bins. A daily food is recommended and can be provided by at least one waste contractor, Veolia, which has confirmed this service is available. See Appendix B.

Table 18 Number and type of bins and storage space per building

Building	Quantity per Week (L)				Bin Capacity (L)		Collection Frequency per Week				Number of Bins				Storage Area Required				Total Area Required (m <sup>3</sup> ) including Space for Maneuvering
	Garbage	Paper and Cardboard	Comingled Recyclables	Food	Garbage, Paper and Cardboard, Comingled Recyclables	Food	Garbage	Paper and Cardboard	Comingled Recyclables	Food	Garbage	Paper and Cardboard	Comingled Recyclables	Food	Garbage	Paper and Cardboard	Comingled Recyclables	Food	
A	8,992	4,796	3,197	3,619	1100	120	5	3	2	7	2	2	2	5	2.7	2.7	2.7	1.4	16.8
B	5,401	3,168	2,112	9,923		1100	1	1	2	7	5	3	1	2	6.6	4.0	1.3	2.7	29.2
C	6,420	3,852	2,568	12,840		1100	3	2	2	7	2	2	2	2	2.7	2.7	2.7	2.7	21.2
D	7,980	4,788	3,192	15,960		1100	2	2	1	7	4	3	3	2	5.3	4.0	4.0	2.7	31.8

## 6.5.2 Garden Organics

Although Council's system allows for the collection of garden organics and food together. A landscaping contractor will be engaged to maintain the gardens and garden organics generated from this operation will be removed and taken to a facility lawfully able to accept it for recovery.

## 6.5.3 Foo

## 6.5.4 Clinical Waste

While the Uniting Design Guide shows that the clinical waste bins are located in the waste storage area that holds the general waste, recycling and food and garden waste, the Australian Standard AS/NZS 3816:1998 Management of Clinical and Related Wastes specifies that there should be no mixing of clinical waste and other waste types. The clinical waste storage area should be locked and secure with access only for authorised people. Similarly, Council's Waste Management Guidelines also specify that clinical and related waste must, as far as practicable, be stored separately from other waste. Further information on storage requirements for clinical and related waste is in Section 4.4.

A clinical waste storage area is required for the residential dwellings associated with aged care facilities only, that is the RACs and ALAs. Clinical and related waste storage is not required for the residential apartments in Buildings B, C and D. The bins for the storage of clinical waste and the minimum required storage area are shown in Table 19. The area takes into account bin sizes, bin numbers and additional space for easy and safe movement of bins.

Table 19 Clinical and Related Waste Storage

Building	Bins Required			Minimum Area Required (m <sup>2</sup> )
	Clinical Waste	Medical Sharps	Cytotoxic Waste	
A	2 x 240 L	2 x 240 L	2 x 240 L	5.1

## 6.5.5 Total waste storage

Table 20 below shows the total amount of garbage and recycling storage space required and provided in each building.

Table 20 Garbage and recyclables storage

Building	Garbage, Paper and Cardboard, Comingled Recyclables Bins (m <sup>2</sup> )	Space Provided (m <sup>2</sup> )
A	16.8	28.05
B	29.2	43.26
C	21.2	24.02
D	31.8	45.89

Table 21 below shows the total amount of bulky waste storage space required and provided in each building.

Table 21 Bulky waste storage

Building	Bulky Waste (m <sup>2</sup> )	Space Provided (m <sup>2</sup> )
A	4	5.40
B	4	7.15
C	4	5.63
D	4	7.5

Table 22 below shows other storage space required and provided in each building.

Table 22 Other storage

Building	Type	Space Required (m <sup>2</sup> )	Space Provided (m <sup>2</sup> )
A	Clinical Waste	5.1	5.49
A	Cooking oil	1	1
C	Tow tug and trailer	10	13.16

The tables show that adequate space has been provided in each building.

## 6.6 Additional waste storage measures

### 6.6.1 Food and garden waste composting

The food and garden waste collected by Council is taken to the Lake Macquarie Organics Resource Recovery composting plant, however, the Client may wish to compost the food and garden waste at the Uniting Charlestown Development instead. This will reduce the number of food and garden waste bins and collections required. The Uniting Design Guide also recommends that composting is considered.

The Client can introduce a compost garden, a compost bin, a worm farm or food dehydrator at the development. In accordance with Council's Waste Management Guidelines, any such activity to be undertaken on site must meet a NSW Environment Protection Authority Resource Recovery Order and Exemption with the output to be used in on-site gardening. An onsite manager must be responsible for the management of the compost system.

Although Council's system allows for the collection of garden organics and food together and there is the opportunity to compost on site, a landscaping contractor will be engaged to maintain the gardens and any garden organics generated from this operation will be removed and taken to a facility lawfully able to accept it for recovery.

### 6.6.2 Food Waste

Because a landscaping contractor will maintain the gardens and remove any garden organics, most of the food and garden organics stream will be food. This will be collected by a waste contractor and taken to the Awaba organics facility for processing. Veolia has confirmed that it can provide the food waste collection service required. See Appendix B.

### 6.6.3 Return and Earn

A large proportion of the co-mingled recycling produced can be from beverage containers. Council's Waste Management Guidelines recommend that a dedicated space to be provided for the separate collection of beverage containers that are eligible for redemption under the NSW Container Deposit Scheme.<sup>19</sup>

The Uniting Charlestown Development can take advantage of the NSW Container Deposit Scheme and introduce bins for the collection of recyclable containers only. The Development can benefit from the revenue of the collection of the containers and educate employees and residents on the use of the Container Deposit Scheme. The container deposit location nearest to the Uniting Charlestown Development can be found at <https://returnandearn.org.au/>.

The dedicated storage area for beverage containers can be located in the general waste and recycling storage area or the bulky waste storage area. The bin for beverage containers can also decrease the required number of comingled recycling bins required to be collected by waste collection contractors.

## 6.7 Waste Management System

### 6.7.1 Residential Bins

In the residential Buildings B, C and D, waste will be placed by residents in one of the chutes for garbage and food on each floor. Recyclables will be placed in a 240 L bin located next to the chutes. Waste will fall through the chutes into one of three 1100 L bins in the waste rooms on the Lower Ground Floor. Cleaners will take the recycling bins to the waste storage rooms.

In Buildings B and D bins will be wheeled a short distance from the waste room to the collection point, as shown in Figure 6 and Figure 7 below, and emptied into a collection vehicle which will enter the development and reverse into position.

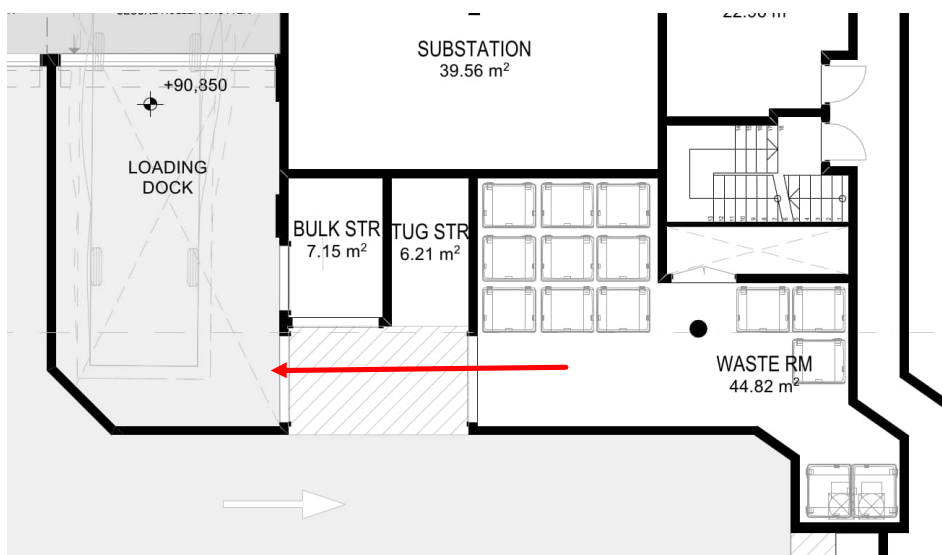


Figure 6 - Building B waste storage room and collection point

<sup>19</sup> <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn>

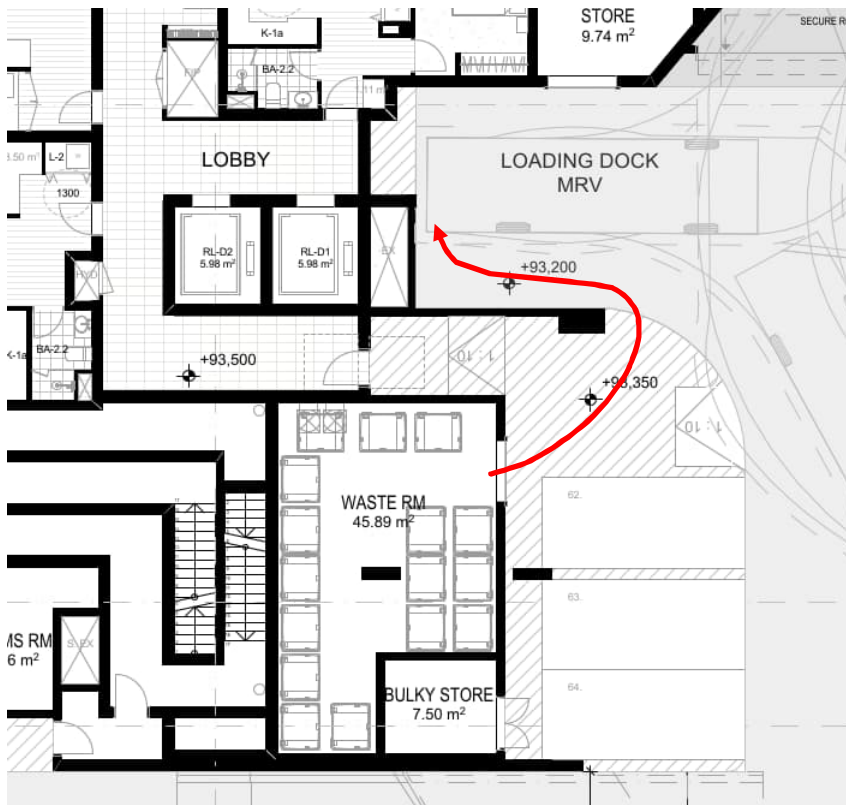


Figure 7 - Building D waste storage room and collection point

Cleaners will use a tow tug similar to that shown in Figure 8 below to take bins from the Building C waste room to the Building B collection point for collection. This is shown in Figure 9.



Figure 8 - QDD30TS-Max

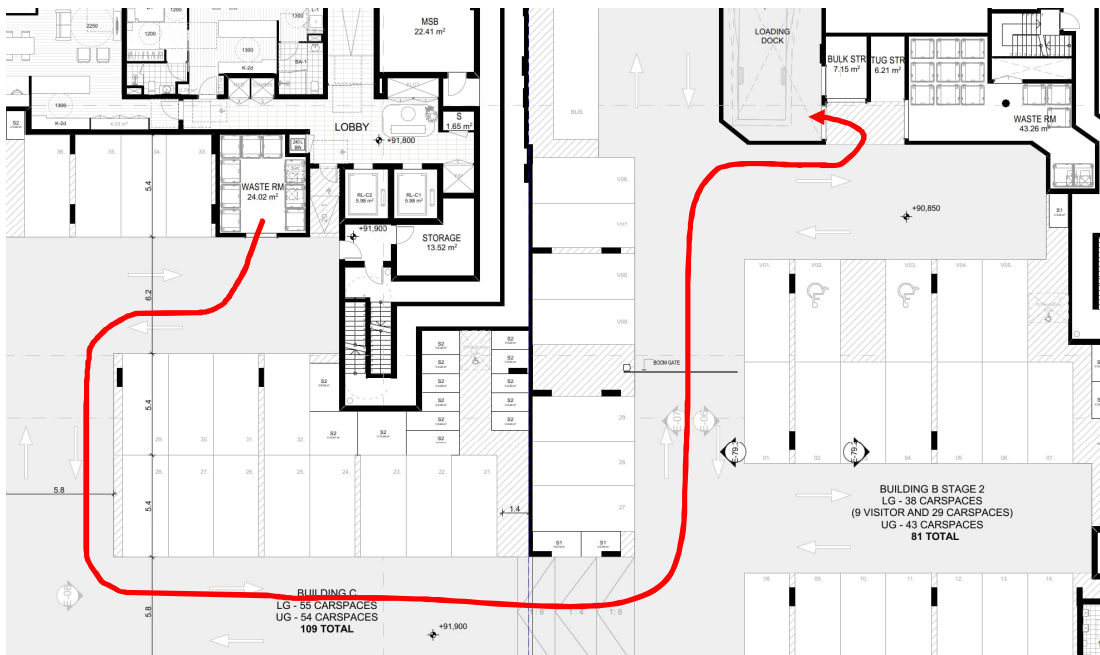


Figure 9 - Building C waste room and tug and trailer travel path

Bins will be towed in short trains like that shown in Figure 10 below.



Figure 10 - Bin train

### 6.7.2 Residential Bulky Waste

Bulky waste will be collected directly from the waste rooms in Building B and D at the same collection point as the bins. Bulky waste will be stored in a bulky waste room in Building C and transported from there to the Building B collection point in a trailer similar to that shown in Figure 11 below.



Figure 11 - Trailer for smaller bins and bulky waste

The tow tug and trailer will be stored in the Building C bulky waste storage room. About 10 m<sup>2</sup> of space will be required to store these and this is available in the Building C bulky waste storage room. A waste contractor is proposed to be used to collect waste from Buildings B, C and D although the docks can accommodate Council vehicles.

### 6.7.3 Building A waste

Waste will be placed in chutes on each floor. The waste will fall into bins in the waste room on the Lower Ground floor. Some waste will be taken by cleaners in the goods lift.

Waste will be collected directly from the waste room by a waste contractor. Bins will be wheeled along a short corridor for collection in the loading bay. This is shown in Figure 12 below.

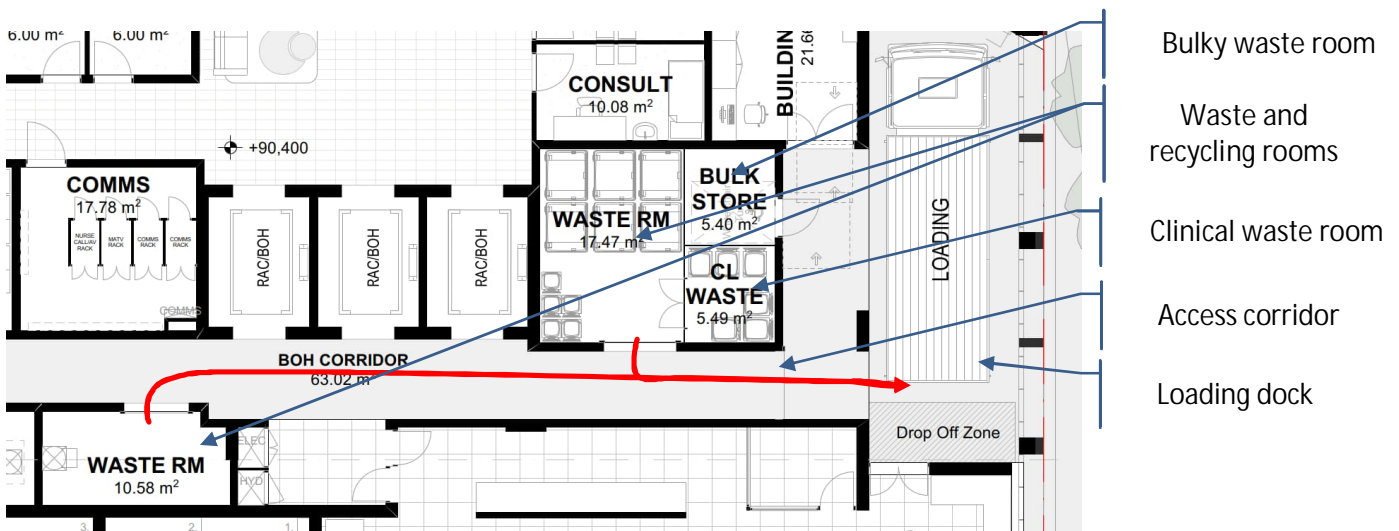


Figure 12 – Building A waste room and collection point

# APPENDIX A

## Council Check Lists

### 3.1.5 Checklist for attached dwellings, multi-dwelling houses, residential flat buildings

Use the following waste management checklist for attached dwellings, multi-dwelling houses and residential flat buildings.

The general objectives, controls and guidance to meet operational controls for the relevant land zone apply to these developments. In addition, however specific land use controls under Part 9 of the DCP and Section 3 of the WMG sets out guidance that should be met.

For more information about the controls that apply to these types of developments, refer to WMG sections 3.2.1, 3.2.2, 3.2.3 or the DCP. For guidance, refer to the WMG section listed below:

- Attached dwellings (3.2.4) – includes dwelling houses in Rural and Environment Protection Zones (3.2.5)
- Multi-dwelling housing (3.2.8) – includes seniors living developments (3.2.16)
- Residential flat buildings (3.2.9)

If a discrepancy appears in the checklist between the controls provided in the checklist and the DCP, then the DCP prevails.

<b>Checklist – Operational Waste Management for Multiple Dwelling Development: Attached Dwellings, Multi-dwelling Houses, Residential Flat Buildings</b>
<b>Summary of Multiple Dwelling Developments Application</b>
<b>Site Address and Lot/Plan(s):</b> <div style="text-align: center; padding: 5px;">27 Tiral Street, Charlestown</div>
<b>Development application is for (fill in figures for all applicable works):</b> ___ small lot house   ___ 1 bedroom dwelling ___ 2 bedroom dwelling   ___ 3 bedroom dwelling   ___ 4+ bedroom dwelling   ___ garage/shed(s) ___ carport/veranda(s)   ___ m <sup>3</sup> trees   ___ mixed use (businesses proposed are: _____ ___ Other: _____ Aged care facility

<b>Applicant Information</b>
<b>Applicant's Name:</b>
<b>Applicant's Address:</b>
<b>Applicant's Phone / Mobile:</b>
<b>Applicant's Email:</b>
<b>Applicant's Authorisation:</b> System for diverting operational waste to reuse, recycling or composting is maximised. Plans/drawings that show operational waste storage areas, waste collection points and waste collection vehicle access are included in this application. The checklist is completed accurately and in full. The details provided on this form represent the applicant's genuine intentions for managing wastes related specifically to this project.
<b>Signature of Applicant or Authorised Agent:</b>
<b>Date:</b>

Waste Types	YES	NOT YET	NO	N/A
All types of wastes that will be generated are listed.	X			
The waste management plan provides for maximum resource recovery.	X			
Bulky waste (e.g. furniture, whitegoods, bulky cardboard) can be effectively managed.	X			

Avoidance, Reuse and Recycling				
Opportunities for separation of reusable, recyclable, compostable and problem wastes from residual garbage bins are maximised.	X			
There is flexibility to expand or reconfigure waste separation systems, so that owners and occupants have can access a range of waste services.	X			

Waste Storage Areas	YES	NOT YET	NO	N/A
The attached site plans show waste storage area(s) with all bins drawn to scale.	X			
The waste storage area(s) are screened from the main living spaces of dwellings, the public road and views from neighbours.	X			
The waste storage area(s) are located away from doors, windows and air intakes of all dwellings and businesses	X			
The waste storage area(s) are capable of storing sufficient amounts of garbage, recycling and food/garden organics waste bins to cater for the dwellings.	X			
For all adaptable housing, the waste storage area(s) are readily accessible to all occupants including those in wheelchairs in accordance with the Lake Macquarie City Council Non-Discriminatory Access Guidelines.	X			
The waste storage area(s) are secure from non-occupants and designed for safety in accordance with the Lake Macquarie City Council <i>Crime Prevention Through Environmental Design Guideline</i> .	X			
Where there is a door or gate for bin removal from the waste storage area(s), the door or gate is at least 900mm wide where bins up to 360 litres in size are used and at least 1600mm wide where bins up to 1100 litres in size are used.	X			
Where a door or gate opens inwards, no bins are stored within the arc of the swinging door. Where a door or gate opens outwards, the gate does not block the pathway for moving bins out to the collection point.	X			
Commercial and residential waste is stored in separated and secured areas.	X			
Bin enclosures are in character with the land use zone characteristics and blend with buildings and landscaping on the property in terms of appearance, materials, bulk and scale, location and orientation.				X
Bin enclosures contain measures to prevent entry by vermin.	X			
Shared bin enclosures have lighting, water supply and bin washing facilities that drain to the sewer;	X			
There is sufficient storage space and a disposal plan for bulk waste, like furniture.	X			
There is waste storage cupboard space in or near each kitchen area that is sufficiently sized to hold two days' volume of waste in five separated containers sized between two and twenty litres for recyclables, food waste, soft plastic, problem wastes (e.g. batteries) and residual garbage.	X			

Waste Storage Areas (continued)	YES	NOT YET	NO	N/A
<b>Attached Dwellings – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
The waste storage area space is provided in addition to the principal private open space requirement.				X
Occupants all have reasonable access to the waste storage area.				X
The location of bin storage areas do not obstruct access for pedestrians or vehicles.				X
A minimum space for waste bin storage of three 240 litre bins is allocated per dwelling with minimum internal dimensions (for bin storage configuration) of either 1955mm x 1610mm or 2390mm x 1465mm. A minimum height clearance for opening bin lids of 1800mm is provided. Where bins are stored in the garage, adequate space will be provided in addition to space allocations for the vehicle(s) (see Appendix 3).				X
<b>Multi-dwelling Housing – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
A minimum of weather-protected space for bulk waste storage (such as furniture and whitegoods) is provided to occupants and has been calculated based on 0.5 square metres of floor space for bulk waste storage per dwelling. This area is provided in individual garages or in a shared bulk waste storage location(s).			X	
<b>Residential Flat Buildings – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
For developments where access is not at ground level for all dwellings, shared waste storage area(s) is incorporated into the design.	X			
The residential development greater than three storeys has one of the following waste management solutions: i. a waste chute system, designed in accordance with the WMG; ii. an intermediate waste storage room on each level, designed in accordance with the WMG; or iii. an innovative alternative.	X			
Waste Chutes – are designed in accordance with the WMG and can manage recyclables, food/ garden waste and garbage.	X			
Waste Chutes – will not be used in conjunction with a compactor for recyclables.	X			
Waste Chutes – food and garden waste that is to be disposed via a waste chute and included in the Council green waste service, will be in Council-approved compostable bags.	X			
Waste Chutes – where a waste chute system is used, a solution is planned and will be implemented to manage problem wastes (such as batteries, cooking oils, liquid wastes and chemicals).	X			
Waste Chutes – where a waste chute system is used, a solution is planned for managing bulk waste items (such as furniture, whitegoods, large cardboard) that would not fit in the chute.	X			
Intermediate waste storage rooms – are located on each level of the multi-storey development, the rooms are designed in accordance with the WMG and includes solutions to manage recyclables, food/garden waste and garbage.				X

Waste Storage Areas (continued)	YES	NOT YET	NO	N/A
Intermediate waste storage rooms – will be managed by a caretaker to transfer waste from the bins to the waste storage room, (preferably in a separate service lift).				X
Intermediate waste storage rooms – are designed to help manage problem wastes.				X
Where an innovative alternative operational waste management system is proposed, it is described as an attachment to the WMP and enables managing recyclables, food/garden waste, garbage and problem wastes.				X
Adequate space for bin storage is provided for the development and has been sized to comply with (or exceed) the minimum waste storage area internal dimensions (for bin configuration) in WMG section 3.2.9.	X			
A minimum of weather-protected space for bulk waste storage (such as furniture and whitegoods) is provided to occupants and has been calculated based on 0.5 square metres of floor space for bulk waste storage per dwelling. This area is provided in individual garages or in a shared bulk waste storage location(s).			X	
The waste storage area(s) is readily accessible to occupants, while being secure from non-occupants.	X			

Route from Dwelling to Waste Storage Areas				
The scaled plans show waste carting route(s), distances and gradients from buildings to waste storage area(s).				X
There is unobstructed, safe access to move waste between source points (such as dwellings, businesses, buildings and public area bins) and the waste storage area(s).				X
Safe, lit access from the dwelling (and home business/industry exit if applicable) to the waste storage area is less than: <ul style="list-style-type: none"> <li>a. 75 metres in length for residences; or</li> <li>b. 50 metres in length for adaptable housing and seniors' developments is wheelchair accessible.</li> </ul>				X
Where wheeled bins up to and including 360 litres in size are used, the bin carting gradient is not steeper than 1:14. Where bins 660 litres and greater are used, carting gradients do not exceed 1:30.	X			
Attached Dwellings – Additional Guidance on Controls	YES	NOT YET	NO	N/A
Waste bins can be safely and conveniently moved between storage location(s) and collection point(s).				X
Bin routes between storage and collection locations are no further than 75 metres, or 50 metres for adaptable dwellings.				X
The route from storage to collection location does not pass through the interior of dwellings.				X
Bin routes do not traverse up or down kerbs or steps, stairs or gradients steeper than 1:14 or over stepping-stones, loose gravel, or soft materials.				X

<b>Route from Dwelling to Waste Storage Areas (continued)</b>				
<b>Residential Flat Buildings – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
Where waste storage is in a lower level basement, a goods lift may be used to move bins between floors. Doorways to any goods lift(s) and lift space dimensions must fit the size of bins and space for a person to comfortably fit. The distance from store to lift and from lift to collection point is no more than 3 metres for 1100 litre bins and 5 metres for 660 litre bins unless a bin cart is used and can also fit in the lift.				X

<b>Waste Collection and Removal</b>	YES	NOT YET	NO	N/A
The scaled plans show waste collection area with all bins drawn to scale. Bins are spaced with at least a 300mm gap between bins and 300mm either side.	X			
The waste collection location is unobstructed and sufficiently sized to enable all wastes generated to be collected from the property.	X			
Kerbside waste collection points are unobstructed and efficiently accessible by waste collection vehicles. The collection point for bins is not blocked by on-street parking, driveways, street tree planting, roundabouts, parking bays, No Stopping zones, bus stops or utilities infrastructure (such as power poles or hydrants).				X
Bin lifts are not obstructed by signs, sign posts, fencing, retaining walls, vegetation or other elements.	X			
Bins are collected from a reasonably flat kerbside location (so bins will not fall over when emptied).	X			
Bins placed out for collection will not obstruct traffic, driveways, driver site lines, on-street car parking, bus stops, footpaths or pedestrian right of way, water flow in gutters, drainage swales, access to letterboxes, nor access to and from garages including not overlapping with the swept paths of turning vehicles.				X
No more than 40 bins up to 360 litres in size are placed out at any single kerbside location on collection day.				X
Mobile garbage bins (MGBs) 360 litre size and smaller that will be placed in kerbside waste collection locations are spaced with at least 300mm gaps between bins.				X
<b>Attached Dwellings – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
The location of bin storage and collection points do not obstruct access for pedestrians or vehicles.				X
All dwellings have access to space to place one to two (1-2) cubic metres of bulk waste (such as furniture and whitegoods) on kerbside for collection, or a suitable alternative bulk waste management option is provided and described in the Operational Waste Management Plan.				X
<b>Multi-dwelling Housing – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
Kerbside collection of mobile garbage bins (MGBs) by side-lift waste collection vehicles will only occur where the collection location is safe for stopping (up to fifteen minutes for 40 bins) to collect these bins and will not hinder access or traffic flow more than a minute.				X

<b>Waste Collection and Removal (continued)</b>	YES	NOT YET	NO	N/A
<b>Residential Flat Buildings – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
Kerbside collection of mobile garbage bins (MGBs) by side-lift waste collection vehicles will only occur where MGBs up to 360 litre size are used and can be accommodated on the subject property so that bins can be spaced with at least a 300mm gap between bins.				X
Kerbside collection of mobile garbage bins (MGBs) by side-lift waste collection vehicles will only occur where bin placement location has a maximum of 40 bins out on any one day.				X
Kerbside collection of mobile garbage bins (MGBs) by side-lift waste collection vehicles will only occur where the collection location is safe for stopping (up to fifteen minutes for 40 bins) to collect these bins and will not hinder access or traffic flow more than a minute.				X
The noise from collection is evaluated in accordance with NSW Environment Protection Authority's Industrial Noise Policy.		X		
Where the collection of waste/recyclables will be in larger bins over 360 litres, the design of the development must accommodate safe collection of the centralised larger bins.	X			
The larger bins are accessible by service vehicles without the need for manual manoeuvring of the bins.			X	
The need for vehicle reversing is minimised.	X			
It is understood that Council waste services vehicles, staff and Council's contractors will not enter private property unless it is under a negotiated agreement.	X			
Where waste storage is in a lower level basement and collections have to take place from inside the basement, the building is designed to accommodate private waste collection vehicles entering and exiting the site.	X			
Clearance height for under building access by collection vehicle is no less than 3.6m at any point.	X			
At sites where waste collection vehicles must enter and exit in a forward direction, the use of vehicle turntables is designed.				X
Confirmation in writing from a waste collection service provider is included in this application stating that they would be able to service this site with this basement and turntable design.		X		

Route from Waste Storage Areas to Waste Collection Point(s)	YES	NOT YET	NO	N/A
The scaled plans show bin carting routes from waste storage to collection point.		X		
The bin carting routes from waste storage area to the waste collection point is unrestricted and contains no: steps, walls, fences without gates, narrow gates, vegetation, stepping-stones, loose aggregates, or other obstacles.	X			
There is unobstructed, safe access to move bins and bulk waste (such as furniture and bulky cardboard) between storage and collection points.	X			
The distance of the route from waste storage area(s) to bin collection point(s) is less than: <ul style="list-style-type: none"> <li>a. 100 metres in length for commercial developments;</li> <li>b. 75 metres in length for residences; or</li> <li>c. 50 metres in length for adaptable housing and seniors' developments;</li> </ul> <i>Note: This is not required for dwellings in Rural Zones (zones RU2, RU4, RU6).</i>	X			
Residential Flat Buildings – Additional Guidance on Controls	YES	NOT YET	NO	N/A
Where waste storage is in a lower level basement, a goods lift may be used to move bins between floors. Doorways to any goods lift(s) and lift space dimensions must fit the size of bins and space for a person to comfortably fit. The distance from store to lift and from lift to collection point is no more than 3 metres for 1100 litre bins and 5 metres for 660 litre bins unless a bin cart is used and can also fit in the lift.				X

Waste Management Information for Stakeholders	YES	NOT YET	NO	N/A
A waste system information guide will be provided to owners, occupants and property managers that contains: <ul style="list-style-type: none"> <li>• the Operational Waste Management Plan;</li> <li>• site plan drawing showing the waste storage and collection locations;</li> <li>• information about any alternative waste service solutions used on the property (e.g. compost bins for gardens); and</li> <li>• the wording for inclusion in any tenancy agreements communicating occupants responsibilities for managing waste at the premises.</li> </ul>	X			

Operational Waste Management Plan Completion				
<p><b>Comments regarding any deviation from the waste management controls and guidance:</b></p> <p>This development has more than 400 residential dwellings. Allowing 0.5 m<sup>2</sup> of bulky waste storage space for each dwelling would require a total of 200 m<sup>2</sup> of space for bulky waste, far in excess of what would be reasonably necessary and more than Council could collect in one visit. Instead, space for bulky waste has been allowed for each building and collection will be undertaken at a frequency that provides a reasonable allowance for each dwelling.</p>				
Waste Management Checklist and coversheet has been completed and signed				

### 3.1.7 Operational waste management plan for multiple dwelling developments

## **OPERATIONAL WASTE MANAGEMENT PLAN –MULTIPLE DWELLING DEVELOPMENTS**

Ongoing use waste will be avoided or minimised by: \_\_\_\_\_ Please refer to the waste management plan \_\_\_\_\_

**Attachments** – the following documents are attached to this application:

Design and/or landscape floor plan drawings (drawn to scale) showing:

- all bins, facilities and areas to be used for on-site waste storage and collection
- door/gate widths, no steps, gradients and carting distances of route(s) between waste storage and collection points

Where waste collection will take place on site, drawings show:

- access roads/driveways, vehicle turning circles, pavement strength, collections points free from obstructions beside or above where bins will be emptied
- a copy of the waste management system information guide that will be provided to occupants and property managers

Type of development (dual occupancy, residential flats, etc.) _____	Litres per week Standard collections	Bin size, Number of bins, Collection frequency	Reuse on site Specify proposed on site reuse methods and waste volume	Reuse or recycling offsite Specify recycling collection service provider and recycling facility destination	Disposal to licenced landfill Specify waste collection service provider and landfill destination
Number of dwellings: _____					
<b>Waste Type:</b>	<b>Per dwelling (1-2 people):</b>			<i>If Council collection services are used then pre-filled text applies. Where private collection contractor is used then applicants must provide information.</i>	
<b>Recyclables</b> bottles, containers, paper and cardboard	60L/week	17 x 1100 L bins once or twice per week	N/a	<i>Recycling is processed at Solo Gateshead facility</i>	n/a
<b>Green waste</b> food and garden organic waste	80L/week	6 x 1100 L bins seven times per week	N/a	<i>Processed at Lake Macquarie Organics Resource Recovery composting plant located on the Awaba Waste Management Facility</i>	n/a
<b>Garbage</b> other non-recyclable wastes	60L per week	16 x 1100 L bins once or twice per week	N/a	n/a	<i>240L/fortnight Lake Macquarie City Council kerbside collection service.</i>
<b>Bulky waste</b> furniture, e-waste, mattresses, metals and whitegoods	1m <sup>3</sup> per collection	To be confirmed with Council		<i>Council bulk waste collection service; e-waste, whitegoods, metals, mattresses and bundled garden waste recycled via Council contracts.</i>	<i>Council kerbside bulk waste collection service; residual bulk waste landfilled at Awaba Waste Management Facility.</i>
<b>Problem wastes</b> oil, paint, chemicals, gas bottles, batteries, sharps	As arises over the year	As required		<i>Deliver to Community Recycling Centre at Awaba Waste Management Facility; sharps to chemists; batteries to library recycling stations</i>	n/a

## 3.1.8 Waste Management Information Guide for Owners, Property Managers and Occupants - Example

Please submit with the Operational Waste Management Plan an updated version of this example waste management information guide that describes how the waste management for this development has been designed to operate.

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### **Waste Management Information Guide for Owners, Property Managers and Occupants**

Address: (address of development) 27 Tiral Street, Charlestown

The following is information about how this development has been designed to accommodate separation of waste, waste storage and waste management.

#### **Internal Bin Storage:**

A waste cupboard is available in the kitchen for two to six bins between 2 litre and 20 litres size, so that you can separate and store 1-2 days of:

- Compostable food scraps for green lid waste bin kerbside collection
- Return and Earn containers
- Other recyclable containers and paper for yellow lid bin kerbside collection
- Batteries, mobile phones, smoke detectors, CDs and lightglobes for recycling through Council's services
- Bottles of used cooking oil for recycling through Council's services
- Plastic wrap and film for recycling through supermarkets
- Residual garbage for red (or black) lid kerbside collection

#### **Route from your unit to the external bin storage:**

To empty your household containers of recycling, food and garden and residual garbage waste into the mobile garbage bins in the waste storage area:

- The shared waste storage area closest to you should be used for your waste.
- There is a waste storage cupboard and/or waste chute for food waste and/or recycling and/or residual garbage on your floor.
- Please use the goods lift to access the basement waste storage area.
- A ramp is available to access the shared bin storage area.

Households/businesses are responsible for taking their own special wastes such as plastic wrap, batteries and chemicals to the appropriate city disposal/recycling location.

#### **External Bin Storage (or Shared Waste Storage Area):**

Location: (Insert waste management site plan here)

- Keep your bins in the garage nook created for this purpose.
- The garage is longer/wider so that three bins can be kept in front of/beside the car in the garage.
- Bins are to be stored in the side/back/front yard behind the screen/water tank/garage out of view of the road/driveway/neighbours.
- The bin storage area for units 1-10 is located in the north east corner. The shared waste storage area for units 11-25 is located in the south-east corner.
- The compost bin is located in the back of the garden behind unit 40.

Separate your waste accurately, as per signage, otherwise the bins may not be able to be emptied or sent for recycling/composting. Yellow lid is for comingled recycling, lime green lid for food and garden waste, and red for residual garbage. The large sky-blue lidded bin is for cardboard only – all boxes must be folded flat.

Bins can be washed out using the tap in the waste storage area (or your own outside tap).

The light switch for the waste storage area is located to the left of the entrance doorway.

- Please turn the light off as you leave.
- The light switch for the waste storage area has a motion sensor and should turn on as you approach and will automatically turn off after ten minutes.

Please shut the gate/door to ensure vermin (and odours) are kept out. Please close bin lids to keep flies and other vermin out, minimise odours and ensure rain blowing under the eaves does not fill bins with water.

Bulk waste – used furniture, whitegoods, electronic waste, large furniture and mattresses:

- Bulk waste should be stored in the cage adjacent to the waste storage room.
- If the goods are in safe working order, place the item near the front with a sign taped to the item “Free” so that others may take and reuse the item. Unclaimed “free” items will be removed monthly for donation, recycling or disposal.
- All residents are responsible for ensuring that when disposing of large goods that they make arrangements for removal immediately from their dwelling. No goods are to be placed in the waste storage area other than regular small item recycling, green waste and garbage in the mobile garbage bins.
- Phone XXX charity when the clothing bin is full and needs emptying.
- Phone YYY stationers when the printer cartridge bin is full and needs emptying.
- Advise the caretaker if the mobile phones bin is full, and the caretaker will arrange for it to be emptied.
- If the community wishes, the community in this development could coordinate swaps days and/or bulk waste collection services.

### **Placing bins out for collection:**

Check with Council/Private Waste Contractor which night to place which bins out.

- Bins for units 1-10 are to be placed out on the kerbside on ABC Street on the south side of the driveway for collection, with all of the bins with the same colour lid lined up together. Units 11-20 bins are to be placed out on the kerbside on the north side of the driveway. Bins for units 21-30 are to be placed out on XYZ Street on the east side of the driveway.
- Bins must be placed with a minimum of 30 centimetres between them and facing the road. All recycling and garbage bins should be placed together on the right side kerb (when facing the units) and all green waste bins to the left.
- Bins are to be placed out the front of your unit adjacent to the driveway at a minimum spacing between of 30 centimetres (length of a ruler).
- Bins are to be brought back in within 24 hours of emptying.
- Caretakers/the nominated group bin monitor will place the bins out for collection the night before collection and bring bins back in.
- The large mobile garbage bins are to be moved up the basement ramp by the caretaker (using the bin tug) to the collection pad adjacent to the driveway for collection.
- The caretaker will use the goods lift to move the large mobile garbage bins to the presentation point for collection.
- The caretakers will use the ute to replace the full for empty smaller mobile garbage bins in the small waste storage areas and empty them into the larger mobile garbage bins in the main waste storage area. Bin lifts should be left for the caretakers. Residents should not use the bin hoist in the main waste storage area. Residents can access the main waste storage area to place flattened boxes in the cardboard recycling bin.
- The large mobile garbage bins do not need to be placed out for collection as the waste collection vehicle will reverse up to the waste storage area.

### **Bin collections:**

On bin collection day, residents and visitors must not park in front of the bins at kerbside (or in the loading zone). Please be patient and drive carefully while the waste collection staff/vehicle is collecting bins within the property.

### **Other Notes:**

An onsite compost bin is available for use. Please do not include paper, meat, fish, bones, eggs, citrus peel or corn cobs in this compost bin. Please place these in the green lid kerbside bin.

Sharps and medical waste must be kept separate and disposed of through the correct storage containers/bins/waste service.

Expanded polystyrene, printer cartridges and clean timber can also be separated for recycling. Bins and a bag are available in the waste storage room for these wastes.

Chemicals must be stored on the shelves in the bunded area and be fully sealed and contained to prevent leaks.

**4.1.5 Checklist for health consulting rooms, sex service premises, veterinary hospitals, aged care facilities**

Use the following WMP checklist for health consulting rooms, sex service premises, veterinary hospitals and aged care facilities.

The general objectives, controls and guidance to meet operational controls set for all commercial / retail development apply to these developments, however specific land use controls under Part 9 of the DCP and Section 4 of the WMG sets out guidance that should be met.

For more information about the controls that apply to these types of developments, refer to WMG sections 4.2, 4.2.2, 4.2.3 or the DCP. For guidance, refer to the WMG section listed below:

- Health consulting rooms (4.2.8)
- Sex service premises (4.2.11)
- Veterinary Hospitals (4.2.15)
- Aged care facilities (4.2.18)

If a discrepancy appears in the checklist between the controls provided in the checklist and the DCP, then the DCP prevails.

**Checklist – Operational Waste Management for Commercial and Retail Development: Health Consulting Rooms, Sex Service Premises, Veterinary Hospitals and Aged Care Facilities**

**Summary of Application**

**Site Address and Lot/Plan(s):**

27 Tiral Street, Charlestown

**Summary of property use(s):**

**List main types of operational wastes that will be generated:**

Domestic type garbage, recyclables and food waste and possibly small quantities of clinical waste

<b>Applicant Information</b>
<b>Applicant's Name:</b>
<b>Applicant's Address:</b>
<b>Applicant's Phone / Mobile:</b>
<b>Applicant's Email:</b>
<b>Applicant's Authorisation:</b>
<p>System for diverting operational waste to reuse, recycling or composting is maximised.</p> <p>Plans/drawings that show operational waste storage areas, waste collection points and waste collection vehicle access are included in this application.</p> <p>The checklist has been completed accurately and in full.</p> <p>The details provided on this form represent the applicant's genuine intentions for managing wastes related specifically to this project.</p>
<b>Signature of Applicant or Authorised Agent:</b> <span style="float: right;"><b>Date:</b></span>

Waste Types	YES	NOT YET	NO	N/A
All types of wastes that will be generated are listed.	X			
The waste management plan provides for maximum resource recovery.	X			
Bulky waste (e.g. furniture, bulky cardboard) can be effectively managed.	X			

Avoidance, Reuse and Recycling	YES	NOT YET	NO	N/A
Waste management solutions are an integral part of the design and operation.	X			
Opportunities for separation of reusable, recyclable, compostable and problem wastes from residual garbage bins are maximised.	X			
There is flexibility to expand or reconfigure waste separation systems, so that owners and occupants have can access a range of waste services.	X			
Sex Service Premises – Additional Guidance on Controls	YES	NOT YET	NO	N/A
A sufficient number of appropriately located hygienic sanitary, clinical and sharps receptacles are provided for workers and customers.				X
Specialised waste collectors will collect and lawfully dispose of hygienic sanitary, clinical and sharps waste.				X

Waste Storage Areas	YES	NOT YET	NO	N/A
The attached site plans show waste storage area(s) with all bins drawn to scale.	X			
The waste storage area(s) are screened from the main living spaces of dwellings, the public road and views from neighbours.	X			
The waste storage area(s) are located away from doors, windows and air intakes of all dwellings and premises	X			
The waste storage area(s) are capable of storing sufficient amounts of garbage, recycling and food/garden organics waste bins to cater for the premises.	X			
The waste storage area(s) are secure from non-occupants and designed for safety in accordance with the Lake Macquarie City Council <i>Crime Prevention Through Environmental Design Guideline</i> .	X			
Where there is a door or gate for bin removal from the waste storage area(s), the door or gate is at least 900mm wide where bins up to 360 litres in size are used and at least 1600mm wide where bins up to 1100 litres in size are used.	X			
Where a door or gate opens inwards, no bins are stored within the arc of the swinging door. Where a door or gate opens outwards, the gate does not block the pathway for moving bins out to the collection point.	X			
Commercial and residential waste is stored in separated and secured areas.	X			
Bin enclosures are in character with the land use zone characteristics and blend with buildings and landscaping on the property in terms of appearance, materials, bulk and scale, location and orientation.				X
Bin enclosures contain measures to prevent entry by vermin.	X			
Shared bin enclosures have lighting, water supply and bin washing facilities that drain to the sewer;	X			
There is sufficient storage space and a disposal plan for bulk waste (i.e. furniture).	X			
There is waste storage cupboard space in or near each kitchen area that is sufficiently sized to hold one days' volume of waste in five separated containers sized between two and twenty litres for recyclables, food waste, soft plastic, problem wastes (e.g. batteries) and residual garbage.	X			
Health Consulting Rooms – Additional Guidance on Controls	YES	NOT YET	NO	N/A
Waste storage room(s) have sufficient space for secure storage of separated segregated waste types including clinical waste, chemical waste, radioactive waste, cytotoxic wastes, recyclables, organic (compostable garden and food) waste and general waste, in accordance with NSW Department of Health <i>Waste Management Guidelines for Health Care Facilities</i> . This also includes space for trolley storage if required for managing wastes.	X			
Waste storage is able to be secured from unauthorised access.	X			

Waste Storage Areas (continued)	YES	NOT YET	NO	N/A
<b>Veterinary Hospitals – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
Clinical wastes, cytotoxic waste, pharmaceutical and medicine wastes, sharps, body parts, dead animals and non-sterilisable items contaminated with contagious or zoonotic pathogens (such as contaminated gloves, eyewear, mask, gown, head cover, earplugs and other personal protective equipment) can be separated into containers or suitable bags, clearly labelled and separately stored in the waste storage area(s) to comply with Part 11 (Clause 113) of the <a href="#">Protection of the Environment Operations (Waste) Regulation 2014</a> requirements for the storage of clinical waste.				X
Waste storage areas are designed to prevent access by rodents and insects with potential as disease vectors				X
Waste storage is able to be secured from unauthorised access.				X
<b>Aged Care Facilities – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
Clinical wastes, cytotoxic waste, pharmaceutical and medical wastes, sharps and non-sterilisable items contaminated with blood or other body fluids (such as contaminated gloves, eyewear, mask, gown, head cover, earplugs and other personal protective equipment) can be separated into containers or suitable bags, clearly labelled and separately stored in the waste storage area(s) to comply with Part 11 (Clause 113) of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> requirements for the storage of clinical waste.	X			
Internal design, including in resident's rooms, allows for the option of waste storage for one days' worth of separated recycling, food and residual garbage, unless waste is to be disposed of to waste bins elsewhere in the premises more frequently.	X			
Space is provided in waste storage areas to separately collect recyclable and compostable wastes from residual garbage with sufficient capacity to maximise recycling and composting.	X			
The waste storage areas are lit.	X			
Waste storage area(s) is secured from unauthorised access.	X			

Route from Buildings to Waste Storage Areas	YES	NOT YET	NO	N/A
The scaled plans show waste carting route(s), distances and gradients from buildings to waste storage area(s).				X
There is unobstructed, safe access to move waste between source points (such as dwellings, businesses, buildings and public area bins) and the waste storage area(s).	X			
Safe, lit access from the door of the premises to the waste storage area is less than 100 metres in length.	X			
Where wheeled bins up to and including 360 litres in size are used, the bin carting gradient is not steeper than 1:14. Where bins 660 litres and greater are used, carting gradients do not exceed 1:30.	X			
<b>Aged Care Facilities – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
The route to place waste in external bins is less than 50 metres, safe and lit.	X			

Waste Collection and Removal	YES	NOT YET	NO	N/A
The waste collection location is unobstructed and sufficiently sized to enable all wastes generated to be collected from the property.	X			
Kerbside waste collection points are unobstructed and efficiently accessible by waste collection vehicles. The collection point for bins is not blocked by on-street parking, driveways, street tree planting, roundabouts, parking bays, No Stopping zones, bus stops or utilities infrastructure (such as power poles or hydrants).				X
Bin lifts are not obstructed by signs, sign posts, fencing, retaining walls, vegetation or other elements.				X
Bins are collected from a reasonably flat kerbside location (so bins will not fall over when emptied).	X			
Bins placed out for collection will not obstruct traffic, driveways, driver site lines, on-street car parking, bus stops, footpaths or pedestrian right of way, water flow in gutters, drainage swales, access to letterboxes, nor access to and from garages including not overlapping with the swept paths of turning vehicles.				X
Bins out for collection are not placed in front of adjacent premises during peak operating hours of the adjacent premises and only outside of that period if agreed to by the occupants and management of the adjacent premises, nor placed in front of neighbouring residential properties, unless agreed to by the owner and occupants of the dwelling(s).				X
No more than 40 bins up to 360 litre size are placed out at any one kerbside location in relation to a single development				X
Mobile garbage bins (MGBs) 360 litre size and smaller that will be placed in kerbside waste collection locations are spaced with at least 300mm gaps between bins.				X
All bins larger than 360 litres will be collected from a designated on-site location.	X			
Where bins will be collected on site, the waste collection vehicle route, turn space, swept paths and clearances are shown on scaled plans demonstrating that waste collection vehicles typically servicing the area can safely manoeuvre around the site. ( <i>The minimum space required is for 8 metre long rear lift trucks, but Council's preference is space for at least a 10 metre long side lift truck.</i> )	X			
Where internal roads cannot cater for a Council 10 metre length side lift waste collection vehicle, then a letter is provided from a private waste service provider stating how they can provide the on-site waste collection service.	X			
Where bins will be collected on site, the on-site road access meets pavement quality standards to handle waste collection vehicle gross weights.	X			
<b>Health Consulting Rooms – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
Collection and disposal of any clinical, pharmaceutical, sharps, chemical and (if any) cytotoxic and radioactive waste generated will be undertaken by a waste collector licensed by the Environmental Protection Authority for this activity.				X
<b>Veterinary Hospitals – Additional Guidance on Controls</b>	YES	NOT YET	NO	N/A
Clinical and related wastes, sharps and dead animals will be collected by a licenced waste transporter and taken to a licenced waste processor as per Part 11 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> for requirements relating to the transport and disposal of clinical waste.				X

Waste Collection and Removal (continued)	YES	NOT YET	NO	N/A
Disposal of dead animals will comply with the guidelines set out in AUSVETPLAN – Operational Manual: Disposal (Animal Health Australia 2015 or latest updated version) and by Wildlife Health Australia for Australian animals. Chilled storage options have been considered if animals or animal parts will not be removed from the premises promptly. Dead animals and parts will not be left lying around, buried or cremated on site and will be taken to a licensed waste treatment facility, pet cemetery or crematorium for proper disposal.				X
Aged Care Facilities – Additional Guidance on Controls	YES	NOT YET	NO	N/A
Clinical and related wastes, sharps and medical waste is collected by a licenced waste transporter and taken to a licenced waste processor in accordance with the handling and transportation requirements in Part 11 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> relating to the transport and disposal of clinical waste.	X			

Route from Waste Storage Areas to Waste Collection Point(s)	YES	NOT YET	NO	N/A
The scaled plans show bin carting routes from waste storage to collection point.	X			
The bin carting routes from waste storage area to the waste collection point is unrestricted and contains no: steps, walls, fences without gates, narrow gates, vegetation, stepping-stones, loose aggregates, or other obstacles.	X			
There is unobstructed, safe access to move bins and bulk waste (such as furniture and bulky cardboard) between storage and collection points.	X			
The distance of the route from waste storage area(s) to bin collection point(s) is less than 100 metres in length for commercial developments.	X			

Waste Management Information for Stakeholders	YES	NOT YET	NO	N/A
All Waste Management Plans will be provided to any relevant person involved in the operational use of the development, including building owners, building managers and occupants.	X			
Veterinary Hospitals – Additional Guidance on Controls	YES	NOT YET	NO	N/A
The waste information guide contains sufficient information so that the occupants will be able to meet the waste management plan requirements under Part 11 Clause 113 (3) of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> .				X
Aged Care Facilities – Additional Guidance on Controls	YES	NOT YET	NO	N/A
Waste management information is provided to staff and contractors, including kitchen staff, carers, nurses and cleaners. Information on how to separate wastes and safely operate waste related equipment is displayed above the bins in the waste storage room as well as on the bins.	X			
Bins used by for residents and visitors are clearly marked with information on which wastes can be included in which bins	X			

Operational Waste Management Checklist Completion				
Comments regarding any deviation from the waste management controls and guidance:  <p style="text-align: center;">N/a</p>				
Waste Management Plan Checklist and coversheet has been completed and signed		x		

## 4.1.9 Operational waste management plan for commercial developments

### **OPERATIONAL WASTE MANAGEMENT PLAN – COMMERCIAL DEVELOPMENTS**

Ongoing use waste will be avoided or minimised by: \_\_\_\_\_ Please refer to the waste management plan \_\_\_\_\_

**Attachments** – the following documents are attached to this application:

Design and/or landscape floor plan drawings (drawn to scale) showing:

- all bins, facilities and areas to be used for on-site waste storage and collection
- door/gate widths, no steps, gradients and carting distances of route(s) between waste storage and collection points

Where waste collection will take place on site, drawings show:

- access roads/driveways, vehicle turning circles, pavement strength, collections points free from obstructions beside or above where bins will be emptied.
- A copy of the waste management system information guide that will be provided to occupants and property managers.

Type of commercial development	Estimated amounts (m <sup>3</sup> /Tonnes stored between collections)	Bin size and/or Volume reduction equipment capacity	No. of bins, balers and other equipment	Collection frequency	Reuse or recycling offsite Specify recycling collection service provider and recycling facility destination	Disposal to licenced landfill Specify waste collection service provider and landfill destination
Number of occupants or staff: _____						
Waste Type:					<i>If Council collection services are used then below pre-filled text applies. Where private collection contractor is used then applicants must provide information.</i>	
<b>Recyclable containers</b> plastic and glass bottles / containers, Aluminium cans	1.6 m <sup>2</sup>	1100 L	2 x 1100 L	Twice per week	Processed at a facility lawfully able to accept it	
<b>Cardboard and paper</b>	2.3 m <sup>2</sup>	1100 L	2 x 1100 L	Three per week	Processed at a facility lawfully able to accept it	
<b>Green waste</b> food and garden organic waste	0.68 m <sup>2</sup>	120 L	5 x 120 L	Daily	Processed at Lake Macquarie organics composting plant	<i>n/a</i>
<b>Garbage</b> other non-recyclable wastes	4.3 m <sup>2</sup>	1100 L	2 x 1100 L	Four per week	<i>n/a</i>	Disposal at a facility lawfully able to accept it
<b>Bulky waste</b> furniture, mattresses,					To be negotiated with Council	
<b>Problem wastes</b> – sharps, medical, veterinary, sanitary					As required	
<b>Liquid wastes</b> - grease trap, fats/oils, fuel, wastewater, other liquids, etc.					As required	

Timber and Pallets		N/a				
Plastics (wrap/film, offcuts)						
Masonry						
Electronic waste						
Metals (specify)						
Fines						
Shredder flock						
Textiles						
Other (specify)						
Other (specify)						
Other (specify)						

#### 4.1.10 Waste Management Information Guide for Owners, Property Managers and Occupants - Example

Please submit with the Operational Waste Management Plan an updated version of this example waste management information guide that describes how the waste management for this development has been designed to operate. Note: not required for signage.

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### **Waste Management Information Guide for Owners, Property Managers and Occupants**

Address: (address of development) 27 Tiral Street, Charlestown

The following is information about how this development has been designed to accommodate separation of waste, waste storage and waste management.

#### **Internal Bin Storage:**

A waste cupboard is available in the kitchen for bins between 2 litre and 20 litres size, so that you can separate and store 1-2 days of:

- Compostable food scraps for green lid waste bin kerbside collection
- Other recyclable containers and paper for yellow lid bin kerbside collection
- Residual garbage for red (or black) lid kerbside collection
- Return and Earn containers
- Batteries, mobile phones, smoke detectors, CDs and lightglobes for recycling
- Plastic wrap and film for recycling

Bins are located in the office for separation and recycling of:

- Paper and cardboard
- Printer cartridges
- Stationery
- Broken irreparable electronic equipment

Bins are located on the shop floor for:

- Flattened cardboard boxes
- Industry-specific recyclable wastes through private waste services

#### **Route from your unit to the external bin storage:**

(if needed) Please use the goods lift to access the basement waste storage area. A ramp is available to access the shared bin storage area. The shared waste storage area closest to you should be used for your waste.

Businesses are responsible for taking or ensuring collection of their own special wastes such as plastic wrap, batteries and chemicals to the appropriate city disposal/recycling location.

#### **External Bin Storage (or Shared Waste Storage Area):**

Location: (Insert waste management site plan here)

Keep your bins in the bin room nook created for this purpose.

Only utilise the commercial waste store; do not use the residential waste room for waste disposal.

Bins are to be stored in the side/back/front yard behind the screen/water tank/garage out of view of the road/driveway/neighbours.

The bin storage area for units 1-5 is located in the north east corner in the car park. The shared waste storage area for units 6-10 is located in the south-east corner near the stairs.

All food is to be disposed of in the food dehydrator. Do not include paper, tissues, plastic, cloth, cutlery or plates in the dehydrator. If you accidentally drop something in, advise the manager.

Separate your waste accurately, as per signage, otherwise the bins may not be able to be emptied or sent for recycling/composting.

Bins can be washed out using the tap in the waste storage area.

The light switch for the waste storage area is located to the left of the entrance doorway. Please turn the light off as you leave. The light switch for the waste storage area has a motion sensor and should turn on as you approach and will automatically turn off after ten minutes.

Please shut the gate/door to ensure vermin (and odours) are kept out. Please close bin lids to keep flies and other vermin out, minimise odours and ensure rain blowing under the eaves does not fill bins with water.

Disposal of bulk waste – used furniture, whitegoods, electronic waste, large furniture and mattresses – is the responsibility of each business. Businesses are encouraged to sell or donate safe, working equipment and furniture, or recycle where possible.

### **Placing bins out for collection:**

Bins will be collected from the shared waste storage area.

Bins are to be placed out on the kerbside on ABC Street for collection. Check with Council/Private Waste Contractor which night to place which bins out. (Or bins are to be placed out the front of your unit adjacent to the driveway). (Or caretakers/the nominated group bin monitor will place the bins out for collection the night before collection and bring bins back in.) Bins are to be brought back in within 24 hours of emptying.

### **Bin collections:**

On bin collection day, customers must not park in front of the bins at kerbside (or in the loading zone). Please be patient and drive carefully while the waste collection staff/vehicle is collecting bins within the property.

Bins must be placed with a minimum of 30 centimetres between them and facing the road. All recycling and garbage bins should be placed together on the right side kerb (when facing the units) and all green waste bins to the left.

### **Other Notes:**

(Notes relevant to particular land uses or aspects of this design e.g. An onsite compost bin is available for use. Please do not include paper, meat, fish, bones, eggs, citrus peel or corn cobs in this compost bin. Please place these in the green lid kerbside bin.)

Sharps and medical waste must be kept separate and disposed of through the correct storage containers/bins/waste service.

This business recycles polystyrene, printer cartridges and clean timber. Bins and a bag are available in the waste storage room for these wastes.

Chemicals must be stored on the shelves in the bunded area and be fully sealed and contained to prevent leaks.

## 8.1.2 Demolition waste management checklist (all development types)

<b>Checklist – Demolition Waste Management</b>				
<b>Site Address and Lot/Plan(s):</b> 27 Tiral Street, Charlestown				
<b>Applicant Information</b>				
<b>Applicant's Name:</b>				
<b>Applicant's Address:</b>				
<b>Applicant's Phone / Mobile:</b>				
<b>Applicant's Email:</b>				
<b>Applicant's Authorisation:</b>				
Diversion of any demolition waste to reuse, recycling or composting is maximised. Plans showing demolition stages waste storage areas; waste collection points and waste collection vehicle access are provided in this application and will be provided to all stakeholders in the demolition process. The checklist has been completed accurately and in full. The details provided on this form represent the applicant's genuine intentions for managing wastes related specifically to this project.				
<b>Signature of Applicant or Authorised Agent:</b>				<b>Date:</b>
<b>Demolition/deconstruction proposal – outline</b>				
<b>Number and scale of Buildings/Structures to be demolished/deconstructed:</b> ___ 1 bedroom dwelling(s) ___ 2 bedroom dwelling(s) ___ 3 bedroom dwelling(s) ___ 4+ bedroom dwellings ___ garage/shed(s) ___ carport/veranda(s) ___ m fencing <u>3668</u> m <sup>2</sup> paving/driveway ___ m <sup>3</sup> trees ___ conduit/piping ___ Other:				
<b>Demolition/deconstruction – checklist</b>				
	YES	NOT YET	NO	N/A
<b>Waste Types</b>				
All types of wastes to be generated are listed, including floors, walls, roofing, structures, fencing, paving, doors and windows, internal fittings, conduit and wiring.	X			
<b>Avoidance, Reuse and Recycling</b>				
All wastes that can be reused or recycled are identified.	X			
Have maximised beneficial reuse of infrastructure, buildings and materials on site.				X
Have maximised diversion of any demolition waste to reuse, recycling or composting.	X			
All native vegetation proposed for demolition will be integrated with landscaping, reused and retained on site for chipping and spreading as mulch, with timber structures used as log piles or perches to house reptiles, mammals, insects and birds. (A detailed control only required in Environment Protection Zones (zones E2, E3 and E4) but encouraged in other zones.)	X			
Second-hand and recycled content resources will be used for construction where possible and where this visually integrates with the natural landscape character and dwelling form. (A detailed control only required in Environment Protection Zones (zones E2, E3 and E4) but encouraged in other zones.)				X
Proposals for offsite reuse meet NSW Resource Recovery Orders and Exemptions.	X			
The name of a licenced facility (to which the respective demolition waste could be sent for reuse, recycling or disposal) is included in the plan.		X		

<b>Demolition/deconstruction – checklist</b>	YES	NOT YET	NO	N/A
Any recycling and green waste bins on site prior to demolition are noted in the demolition plan to be returned to Council’s contractors (contacted Council on 4921 0333).				X
<b>Waste Storage Areas</b>				
Reusable resources and waste can be appropriately and effectively stored.	X			
Reusable resources and waste can be appropriately, effectively and safely removed from site without adverse impacts on local amenity.	X			
The waste storage area(s) for demolition waste are shown on the demolition plans.		X		
Waste management plan(s) demonstrate that sufficient area is allocated for separate storage and collection of site occupants’ wastes and demolition wastes.		X		
Waste can be placed in the bins without moving bins around.	X			
Sufficient area is allocated for separate storage and collection of problem wastes (such as light bulbs, batteries, gas bottles, oils, cooking oils and paint).		X		
For staged demolitions, waste management for each stage is shown in plans and described in the demolition waste management plan.				X
All waste management plans show the appropriately located, sized and suitably screened waste storage locations related to the demolition sequencing of the development. Waste will be contained within the demolition site in a suitably screened area of least 3.5m <sup>2</sup> and 1.2 metres high.		X		
The waste storage area is located conveniently for demolition work team to use it.		X		
The routes for movement of waste between work site and waste storage area are obstruction-free.	X			
<b>Waste Collection and Removal</b>				
The routes for movement of bins and waste between storage and collection points are obstruction-free (if waste is moved between the waste storage area(s) and collection point(s)).	X			
Waste bin collection point(s) is provided that are accessible for waste collection vehicles. There are no obstructions to turning or reversing, pulling up vehicles and lifting bins.	X			
All waste management plans show access and turning space provisions for waste collection vehicles through each demolition stage.		X		
Access will not be compromised by demolition-related activities vehicles or other consequences of demolition staging.	X			
All waste not being reused on site will be removed during, or at the completion of, the demolition stage.	X			
No waste will be left on site unless it is part of valid reuse on site, which is integral to and in place in the design, or is a few spares for use in future maintenance repairs, or has valid reuse for another authorised use of the property.	X			
In order to manage noise levels, collection of waste from the demolition site will only occur during hours approved for demolition work.	X			
<b>Waste Management Information for Stakeholders</b>				
All Waste Management Plans will be provided to any relevant person involved in the demolition, including project managers, builders, contractors, sub-contractors and architects.	X			

Demolition Waste Management Plan Completion	YES	NOT YET	NO	N/A
Comments regarding any deviation from the waste management controls and guidance: Details of storage on site and truck movements will be finalised when a demolition contractor is appointed				
Waste Management Plan checklist and coversheet has been completed and signed		X		
List of Items for Reuse				
<p><i>e.g. The following buildings, building components and infrastructure will be reused on site (avoiding waste) - Examples provided in pre-filled text, remove what does not apply and/or add others that do apply:</i></p> <p><i>fill (VENM, ENM), aggregates</i></p> <p><i>roofing</i></p> <p><i>timber</i> <span style="margin-left: 200px;">None</span></p> <p><i>bricks, pavers</i></p> <p><i>windows, doors</i></p> <p><i>pipes and conduit</i></p> <p><i>water tanks</i></p> <p><i>fencing and gates</i></p>				
<p>The following demolition wastes will be reused on site for integration into the design, or retained for future maintenance repairs, or other valid reuse on the property - <i>Examples provided in pre-filled text, remove what does not apply and/or add others that do apply:</i></p> <p><i>e.g. fill (VENM, ENM), aggregates</i></p> <p><i>roofing</i></p> <p><i>timber</i> <span style="margin-left: 200px;">None</span></p> <p><i>bricks, pavers</i></p> <p><i>windows, doors</i></p> <p><i>pipes and conduit</i></p> <p><i>water tanks</i></p>				

8.1.3 Demolition waste management plan (all development types)

**DEMOLITION (DECONSTRUCTION) WASTE MANAGEMENT PLAN**

Waste Type:	Waste amounts (m <sup>3</sup> or Tonnes)	Reuse on site Specify proposed on site reuse methods and waste volume.	Reuse or recycling offsite Specify recycling collection service provider and recycling facility destination	Disposal to licenced landfill Specify waste collection service provider and landfill destination
Excavation material			322 m <sup>3</sup>	
Green waste				
Furniture and equipment				
Fittings and furnishings				
Water supply, sewage, gas and electrical pipes, conduit, wires and meters				
Fencing and gates				
Concrete			110 m <sup>3</sup>	
Bricks				
Tiles				
Asphalt			77 m <sup>3</sup>	
Timber – clean				
Timber – treated/painted				
Timber –composite				
Plasterboard				
Metals (please specify)				
Plate glass / windows				
Plastic (please specify)				
Containers (recyclable)				
Food waste				
Other waste (please specify)				

Any Council kerbside recycling and green waste bins on site belong to Council’s contractor. Contact Council 4921 0333 to arrange removal.

## 9.1.2 Construction waste management checklist (all development types)

<b>Checklist – Construction Waste Management</b>	
<b>Site Address and Lot/Plan(s):</b>	27 Tiral Street, Charlestown
<b>Applicant Information</b>	
<b>Applicant's Name:</b>	
<b>Applicant's Address:</b>	
<b>Applicant's Phone / Mobile:</b>	
<b>Applicant's Email:</b>	
<b>Applicant's Authorisation:</b>	
<p>Diversion of any construction waste to reuse, recycling or composting is maximised.</p> <p>Plans showing construction stages waste storage areas, waste collection points and waste collection vehicle access are provided in this application and will be provided to all stakeholders in the construction process.</p> <p>The checklist has been completed accurately and in full.</p> <p>The details provided on this form represent the applicant's genuine intentions for managing wastes related specifically to this project.</p>	
<b>Signature of Applicant or Authorised Agent:</b>	<b>Date:</b>

<b>Construction proposal – outline</b>
<p><b>Number and scale of Buildings/Structures to be constructed</b>(fill in figures for all applicable):</p> <p>___ 1 bedroom dwelling(s) ___ 2 bedroom dwelling(s) ___ 3 bedroom dwelling(s) ___ 4+ bedroom dwellings ___ garage/shed(s) ___ carport/veranda(s) ___ m fencing ___ m<sup>2</sup> paving/driveway ___ m<sup>3</sup> trees ___ conduit/piping Other: <u>Four multi-floor towers as detailed in attached waste plan</u></p>

<b>Construction checklist</b>	YES	NOT YET	NO	N/A
<b>Waste Types</b>				
All types of wastes to be generated are listed, including from installation of floors, walls, roofing, structures, fencing, paving, doors and windows, internal fit out, fittings, conduit and wiring, landscaping and any other structures or infrastructure.		X		

<b>Avoidance, Reuse and Recycling</b>				
All wastes that can be reused or recycled are identified.	X			
Plan maximises beneficial reuse of infrastructure, buildings and materials on site.				X
Plan maximises diversion of any construction waste to reuse/recycling/composting.	X			
Second-hand and recycled content resources will be used for construction where possible and where this visually integrates with the natural landscape character and dwelling form. (A detailed control only required in Environment Protection Zones (zones E2, E3 and E4)s but encouraged in other zones.)				X
Proposals for offsite reuse meet NSW Resource Recovery Orders and Exemptions.	X			
The name of a licenced facility (to which the respective construction waste could be sent for reuse, recycling or disposal) is included in the plan.		X		
Any recycling and green waste bins on site prior to construction are noted in the construction plan to be returned to Council's contractors (Council contacted)				X

<b>Construction checklist</b>	YES	NOT YET	NO	N/A
<b>Waste Storage Areas</b>				
Reusable resources and waste can be appropriately and effectively stored.	X			
Reusable resources and waste can be appropriately, effectively and safely removed from site without adverse impacts on local amenity.	X			
The waste storage area(s) for construction waste are shown on the construction plans.		X		
Waste management plan(s) demonstrate that sufficient area is allocated for separate storage and collection of site occupants' wastes and construction wastes.		X		
Waste can be placed in the bins without moving bins around.	X			
Sufficient area is allocated for separate storage and collection of problem wastes (such as light bulbs, batteries, gas bottles, oils, cooking oils and paint).		X		
For staged constructions, waste management for each stage is shown in plans and described in the construction waste management plan.		X		
All waste management plans show the appropriately located, sized and suitably screened waste storage locations related to the construction sequencing of the development. Waste will be contained within the construction site in a suitably screened area of least 3.5m <sup>2</sup> and 1.2 metres high.		X		
The waste storage area is located conveniently for construction work team to use it.	X			
The routes for movement of waste between work site and waste storage area are obstruction-free.	X			

Waste Collection and Removal				
The routes for movement of bins and waste between storage and collection points, are obstruction-free (if waste is moved between the waste storage area(s) and collection point(s)).	X			
Waste bin collection point(s) are provided that are accessible for waste collection vehicles. There are no obstructions to turning or reversing, pulling up vehicles and lifting bins.	X			
All waste management plans show access and turning space provisions for waste collection vehicles through each construction stage.		X		
Access will not be compromised by construction-related activities vehicles or other consequences of construction staging.	X			
All waste not being reused on site will be removed during, or at the completion of, the construction stage.	X			
No waste will be left on site unless it is part of valid reuse on site, which is integral to and in place in the design, or is a few spares for use in future maintenance repairs, or has valid reuse for another authorised use of the property.	X			
In order to manage noise levels, collection of waste from the construction site will only occur during hours approved for construction work.	X			

Waste Management Information for Stakeholders				
All Waste Management Plans will be provided to any relevant person involved in the construction, including project managers, builders, contractors, sub-contractors and architects.	X			

Construction checklist	YES	NOT YET	NO	N/A
<b>Construction Waste Management Plan Completion</b>				
Comments regarding any deviation from the waste management controls and guidance:  <div style="text-align: center; padding: 10px;"> <p>Details of storage on site and truck movements will be finalised when a construction contractor is appointed</p> </div>				
Waste Management Plan Checklist and coversheet has been completed and signed		X		

List of Items for Reuse	
<p>The following buildings, building components and infrastructure will be reused from other sites (avoiding waste) – <i>Examples provided in pre-filled text, remove what does not apply and/or add others that do apply:</i></p> <p><i>fill (VENM, ENM), aggregates</i></p> <p><i>roofing</i></p> <p><i>timber</i> <span style="margin-left: 200px;">None</span></p> <p><i>bricks, pavers</i></p> <p><i>windows, doors</i></p> <p><i>pipes and conduit</i></p> <p><i>water tanks</i></p> <p><i>fencing and gates</i></p>	
<p>The following construction wastes will be reused on site for integration into the design or retained for future maintenance repairs, or other valid reuse on the property:</p> <p><i>fill (VENM, ENM), aggregates</i></p> <p><i>roofing</i></p> <p><i>timber</i></p> <p><i>bricks, pavers</i> <span style="margin-left: 200px;">None</span></p> <p><i>windows, doors</i></p> <p><i>pipes and conduit</i></p> <p><i>water tanks</i></p> <p><i>fencing and gates</i></p>	

9.1.3 Construction waste management plan (all development types)

**CONSTRUCTION WASTE MANAGEMENT PLAN**

Waste Type:	Waste amounts (m <sup>3</sup> or Tonnes)	Reuse on site Specify proposed on site reuse methods and waste volume.	Reuse or recycling offsite Specify recycling collection service provider and recycling facility destination	Disposal to licenced landfill Specify waste collection service provider and landfill destination
Concrete			1420 m <sup>3</sup>	
Bricks, blocks and pavers			434 m <sup>3</sup>	
Tiles				
Asphalt				
Timber/pallets untreated			260 m <sup>3</sup>	
Timber – treated/painted				
Timber –composite				
Pallets (if not with timber)				
Plasterboard and plaster			439 m <sup>3</sup>	
Metal tins/packaging				
Metals (please specify)			208 m <sup>3</sup>	
Plate glass				
Plastic wrap/film				
Plastic – rigid packaging				
Plastic conduit/pipe				
Plastic (please specify)				
Cardboard boxes/paper				
Food waste				
Furnishings and equipment				
Glues/solvents/chemicals				
Other (please specify)			Sand and soil 664 m <sup>3</sup>	Other 377 m <sup>3</sup>

# APPENDIX B

Veolia food waste collection confirmation e-mail

Andrew Quinn

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From: customer experience team <cx.service@veolia.com.au>  
Sent: Monday, 27 March 2023 2:25 PM  
To: Andrew Quinn  
Subject: Ref : New Services For SLR Consulting

You don't often get email from cx.service@veolia.com.au. [Learn why this is important](#)



Dear Andrew,

As discussed over the phone, you require 2 x 1100L General waste ( food waste ) bins at 27 Tiral St, Charlestown NSW 2290.

I can confirm that this service can be provided by Veolia.

Whenever required, just reply back to this email and we can get the process for setting up the services started.

Regards  
Yanny

Veolia's Customer Experience Team



Our reference:

## ASIA PACIFIC OFFICES

### ADELAIDE

60 Halifax Street  
Adelaide SA 5000  
Australia  
T: +61 431 516 449

### BRISBANE

Level 2, 15 Astor Terrace  
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### CANBERRA

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F: +61 2 9427 8200

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### MELBOURNE

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F: +61 3 9249 9499

### NEWCASTLE CBD

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### NEWCASTLE

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Sub Base Platypus  
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