

# 28-32 Bourke Road, Alexandria

# **Construction & Demolition**

# Waste Management Plan

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This report is based on information provided by **Johnstaff** coupled with Foresight Environmental's knowledge of waste generated within the health sector. To that extent this report relies on the accuracy of the information provided to the consultant. It has been compiled by Foresight Environmental on behalf of **Alexandria Property Development P/L.** 

This report is not a substitute for legal advice on the relevant environmental related legislation, which applies to businesses, contractors or other bodies. Accordingly, Foresight Environmental will not be liable for any loss or damage that may arise out of this project, other than loss or damage caused as a direct result of Foresight Environmental's negligence.

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# 1. Introduction

This construction and demolition waste management plan has been prepared by Foresight Environmental on behalf of Alexandria Property Development P/L for the proposed 28-32 Bourke Road, Alexandria (Alexandria Health Centre) project.

The plan details how the proposed development will manage the waste and recycling generated during the demolition and construction phases of the development and to address the waste management requirements of the Secretary's Environmental Requirements (SEARs). This report will be included within the Environmental Impact Statement that will accompany a State Significant Development Application (SSDA).

# 2. Waste Generation Estimate

The aim of this Plan is to ensure that all waste resulting from construction and demolition activities is managed in an effective and environmentally aware manner. Specifically,

- To maximize the reuse and recycling of demolition materials
- To reduce the volume of materials going to landfill
- To maximise waste material avoidance and reuse on site
- To ensure that where practicable, an efficient recycling procedure is applied to waste materials
- To ensure efficient storage and collection of waste

The quantity of waste materials to be generated onsite are estimates based on the information provided to Foresight Environmental and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated.



### 2.1 Demolition

The testing and classification of any excavated material is not covered in this report. Where necessary separate specialist testing should be conducted by the project managers.

If acid sulphate soils are present on site, a separate management plan will need to be prepared for handling and disposal of such soil.

The tables below detail the estimated composition by volume of demolition waste to be generated.

Table 1 - Estimated composition of demolition waste by volume

Material	M <sup>3</sup>
Concrete	350
Metal	70
Mixed Residual Waste	50
Brick	40
Timber	20
Glazing	5
Total	535



### 2.2 Construction

Active site management during the construction phase will ensure all waste/recyclable materials are disposed of appropriately and that all waste receptacles are of sufficient capacity to manage onsite activities.

Table 2 below details the estimated composition by volume of construction waste to be generated. Note, these are preliminary estimates based on high level architectural plans – it is anticipated that these estimates will be reviewed and updated as appropriate as more detailed information becomes available in the form of construction cost plans and quantity surveys.

Material	M³
Mixed Residual Waste	300
Concrete	150
Timber	30
Plasterboard	30
Metal	5
Glazing	3
Total	518

Table 2 - Estimated composition of construction waste by volume



# 3. Waste Management Strategy

Consideration of waste management during all phases of the development will provide the best opportunity to minimise the volume of waste generated throughout the project's lifetime. Whilst recycling and reuse of materials are important aspects of waste management, waste minimisation techniques incorporated into construction and demolition can prevent materials from being brought onto the site that will eventually become waste. The following waste hierarchy will be used as a guiding principle:



The construction and demolition teams will implement this Waste Management Plan, incorporating the following best practice management techniques as a minimum:

### 3.1 Avoid and Reduce

Minimise the production of waste materials in the construction process by

- Assessing and taking into consideration the resultant waste from different design and construction options
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated. Where possible, arrange for packaging to be removed by the delivery company
- Not over ordering products and materials
- Ordering materials cut to size to reduce waste material onsite



### 3.2 Reuse

Ensure that wherever possible, materials are reused either on site or offsite

- Identify all waste products that can be reused
- Any demolition and excavation materials should be salvaged and retained onsite for re-use where possible
- Put systems in place to separate and store reusable items
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

## 3.3 Recycling

Identify all recyclable waste products to be produced on site

- Provide clear signage to ensure appropriate disposal of all waste types
- Process the material for recycling either onsite or offsite

To achieve operational and spatial efficiency throughout the course of the project, the appointed waste contractor will be selected on the basis that they are able to achieve >90% diversion from landfill through effective sorting of recyclable materials at an appropriately licensed C&D recycling facility. Through this process, the onsite management of waste becomes far more streamlined by enabling the majority of materials to be disposed together rather than allocating individual bins or stockpiles for different material types (which would be unfeasible within the project timelines and spatial constraints).

### 3.4 Disposal

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with OEH requirements
- Implement regular collection of bins
- Maintain records of both recycled and general waste volumes being transferred offsite or reused onsite.
- The only materials to be sent to landfill are those that cannot be recycled due to contamination, legal requirements or lack of facilities to enable recycling.



# 4. Waste Management Systems

### 4.1 Onsite and Offsite Systems

Onsite separation of the various waste streams is encouraged to lower recycling costs so to avoid additional fees for sorting at appropriate facilities - this is particularly relevant for higher value recycling stream i.e. metal. However, to maximise operational and spatial efficiency, it is highly likely that the majority of materials will be disposed together and will be collected for separating and processing at an offsite recycling facility.

The following tables combine the estimated volumes for each component of the development as the recycling practices are to be replicated during each respective phase.

#### 4.1.1. Demolition

Material	Estimated volume (m³)	Onsite (re-use or recycle)	Offsite (recycling contractor)
Concrete	350	Crushed and reused onsite as	
Brick	40	aggregate/road base where possible	Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled
Mixed Residual Waste	50		products where possible - materials will be deposited onsite directly into skips or trucks to be removed from
Glazing	5		site.
Timber	20		
Metal	70		Separated on site and taken to metal recycling facility if possible. Otherwise collected with other materials for offsite processing/recycling

Table 3 - Waste management systems (demolition)



### 4.1.2. Construction

Material	Estimated volume (m³)	Onsite (re-use or recycle)	Offsite (recycling contractor)
Concrete	150	Crushed and reused onsite as aggregate/road base where possible	Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products
Mixed Residual Waste	300		
Metal	5		where possible - materials will be deposited onsite directly
Glazing	3		into skips or trucks to be
Timber	30		removed from site.
Plasterboard	30		

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Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities<sup>1</sup>. The figures in Table 3 and 4 above are estimates and are used as a guide for designing the waste management systems on site. These figures will be adjusted according to the final building material selection and quantities. The waste management systems will be adjusted as necessary.

It should be noted that there are multiple offsite recycling/disposal facilities available for the appropriate processing of the materials detailed above and the facility choice will depend largely on the waste contractor/supplier engaged. See section 5.

## 4.2 Waste Storage and Collection

Designated waste storage areas will be established for the collection of all waste and recyclables. The waste storage areas shall have appropriate signage to clearly identify the area to construction workers and to prevent unauthorised access to the area.

<sup>&</sup>lt;sup>1</sup> McGregor Environmental Services (2000) Predicting C&D waste quantities in the Inner Sydney Waste Board Waste Planning Guide for Development Applications-Planning for Less Waste (1998) NSW Waste Boards



Stockpile size or bin numbers should be minimised by regular removal of waste from site and construction staging plans must allow for the waste storage area to move within the site as the development progresses if necessary.

The waste storage areas do not have to be enclosed. However, bins should be covered where possible to prevent transmission of dust and fine particles, odour, wind impacts, vermin and vandalism or theft. Bins will be stored on a hardstand area with appropriate sediment control measures implemented to mitigate run-off into stormwater. Any spillages in the waste storage area should be treated immediately using a spill kit. Contaminated or hazardous wastes should be stored in a secure area with appropriate signage.

### 4.3 Site waste control and management

To ensure adequate site environmental standards are maintained, is recommended that the following controls be implemented and enforced by the proponent:

- All waste generated during the project is assessed, classified and managed in accordance with the "Waste Classification Guidelines Part 1: Classifying Waste" (DECCW, December 2009)
- 2. The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste or spoil from the vehicle or trailer
- 3. Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorized plant leaving the site, is removed before the vehicle, trailer or motorized plant leaves the premises.
- 4. Appropriate control measures to eliminate/minimise the airborne emission of dust and fibres, such as:
  - a. Dust screening barrier around site and relevant areas within site
  - b. Cover stockpiles
  - c. Water suppression

### 4.4 Hazardous Wastes

During any demolition and material recovery activities, contractors should beware of potentially hazardous materials. Hazardous construction materials should be disposed of in accordance with EPA guidelines in order to protect the environment and personnel. In order to avoid risk to the environment and any breach of legislation this development endeavours to uphold the following practices:

• Early identification and reporting of hazardous waste



- Reporting of any suspicious activities of involved stakeholders (waste generator, transporter or receiver) to including handling waste unlawfully or illegally dumping waste through the Environment Line on 131 555.
- Ensure waste is transported to a place that can lawfully accept it under Section 143 of the Protection of the Environment Operations Act 1997.
- Take all reasonable precautions and exercise due diligence at all times to prevent/minimise commission of any offence.
- Keep accurate written records such as:
  - who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
  - copies of waste dockets/receipts from the waste facility (date and time of delivery, name and address of the facility, its ABN, contact person).

#### 4.4.1. Asbestos

To manage the risk of asbestos during the demolition/construction phase the following minimum requirements must be implemented:

- Identify all asbestos and asbestos containing material and record in an asbestos register for the project
- Assess the risk of exposure to airborne asbestos
- Eliminate or minimise the risks associated with asbestos by implementing control measures
- Continually review control measures to ensure they are effective

If asbestos is identified a detailed asbestos management plan is required to be prepared for the project which must:

- Identify the location of asbestos and any naturally occurring asbestos.
- Include decisions—and reasons for them—about the management of asbestos at the site, for example safe work procedures and control measures.
- Outline procedures for incidents and emergencies involving asbestos, including who is responsible for what.
- Be maintained with up-to-date information.
- Be accessible to any worker who has carried out or intends to carry out work at the workplace and any health and safety representatives who represent workers at the site.
- Provide information, consultation and training responsibilities to workers carrying out work involving asbestos



### 4.5 Contracts and Purchasing

Each subcontractor working on the site will be required to adhere to this Waste Management Plan (WMP). The Head Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work
- Implements procedures to ensure waste resulting from their work will be actively managed and where possible recycled, as part of the overall site recycling strategy
- Implements source separation of off cuts to facilitate reuse, resale or recycling.

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Ensuring all skips/bins/stockpiles are clearly labelled identifying which material is suitable for each receptacle
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted
- Providing training to all site employees and subcontractors in regard to the WMP as detailed in section 4.6 below.
- Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems
- Retaining demolition and construction waste dockets to confirm and verify which facility received the material for recycling or disposal.

### 4.6 Training and Education

All site employees and sub-contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

All employees are to have a clear understanding of which products are being reused/recycled on site and where they are stockpiled. They are also to be made aware of waste reduction efforts in regard to packaging.



The site manager will post educational signage in relation the recycling activities on site in breakout areas, lunchrooms etc.



# 5. Waste Facilities

The following waste recycling facilities provide disposal options within reasonable distance to the project. It is the responsibility of the site manager to ensure that the chosen facilities can accept the material being sent to it.

## Bingo Recycling Centre - Auburn

Contact	Materials Accepted
3-5 Duck St, Auburn https://www.bingoindustries.com.au/recycling- centres/recycling-centres-sydney-and- surrounds/auburn	<ul> <li>Aluminium Scrap, Iron &amp; Steel, Other Metals</li> <li>Bricks</li> <li>Cement</li> <li>Ceramics/ tiles</li> <li>Plasterboard</li> </ul>

## Concrete Recyclers - Camellia

Contact	Materials Accepted
Thackeray St, Camellia, NSW <u>https://concreterecyclers.com.au/</u>	<ul> <li>Concrete</li> <li>Bricks</li> <li>Ceramics/ Tiles</li> </ul>

### Sydney Transwaste Industries - Homebush West

Contact	Materials Accepted
160 Arthur Street, Homebush West, NSW <u>http://www.transwaste.com.au/</u>	<ul> <li>Asbestos</li> <li>Concrete</li> <li>Bricks</li> <li>Garden Cuttings</li> </ul>





# Alexandria Health Centre

# 28-32 Bourke Rd, Alexandria

Operational Waste Management Plan

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# 1. Executive Summary

This operational waste management plan has been prepared by Foresight Environmental on behalf of Alexandria Property Development P/L for the proposed 28-32 Bourke Road, Alexandria (Alexandria Health Centre) project.

The plan details how the proposed development will manage the waste and recycling generated during the ongoing operation of the development and to address the waste management requirements of the Secretary's Environmental Requirements (SEARs). This report will be included within the Environmental Impact Statement that will accompany a State Significant Development Application (SSDA).

# 2. Overview of Proposed Development

Development consent is sought for a concept proposal for the 'Alexandria Health Centre' comprising medical centre uses and anchored by a mental health hospital. Specifically, the application seeks concept approval for:

- In principle arrangements for the demolition of existing structures on the site and excavation to accommodate a single level of basement car parking (partially below ground level).
- A building envelope to a maximum height of 45 m (RL 53.41) (including architectural roof features and building plant). The podium will have a maximum height of RL 28.41.
- A maximum gross floor area of 11,442.20 sqm, which equates to a maximum FSR of 3.85:1. The total FSR will comprise a base FSR of 2:1, a community infrastructure bonus FSR of 1.5:1 and a 10% design excellence bonus FSR (subject to a competitive design alternatives process).
- Indicative use of the building as follows:
  - Mental health hospital at levels 5-7.
  - Medical centre uses at levels 1-4; and
  - Ground level reception/lobby and pharmacy.
- Principles for future vehicular ingress and egress from Bourke Road along the site's western frontage.
- Subject to agreement on a public benefit offer submitted with this application, the proposal includes the indicative dedication of the following land to Council as envisaged by the Draft Sydney Development Control Plan 2012 Southern Enterprise Area Amendment (Draft DCP): A 2.4m wide strip of land along the site's frontage to Bourke Road for the purpose of footpath widening

- A 2.4m wide strip of land along the site's frontage to Bourke Road for the purpose of footpath widening

 A 3m wide lane along the site's western boundary contributing towards a 6m wide lane (it is noted that the concept proposal will allocate an additional 3 m strip of land within the site along the western boundary to enable two-way vehicle movement into and out of the site).

- A 3m wide lane along the site's southern boundary, contributing towards a 9m wide lane.

# 3. Assessment Requirements

The Department of Planning and Environment have issued SEARs for the proposed development. This report addresses the requirement for a Concept Waste Management Plan set out in requirement 16 as follows:

Table 1 - SEARs requirements for waste

Issue and Assessment Requirement	Documentation
16. Waste Management	
<ul> <li>Identify, quantify and classify the likely waste streams to be</li> </ul>	
generated during construction and operation	
• Provide the measures to be implemented to manage, reuse,	Concept Waste Management Plan
recycle and safely dispose of this waste	
Identify appropriate servicing arrangements for the site	

In addition to the SEARs, the requirements of the City of Sydney Guidelines for Waste Management in New Developments 2018 have been addressed throughout this report. The following table outlines the key requirements and the corresponding report reference.

Table 2 - CoS Guidelines for Waste Management requirements

CoS Guideline Requirement	Documentation
Identify, quantify and classify the likely waste streams to be generated during operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste	Section 4 & 5
Identify appropriate servicing arrangements (including but not limited to waste management, loading zones, mechanical plant) for the site	Section 5 & 6
Detail the ongoing management, storage and collection of waste, including responsibility for cleaning, transfer of bins between storage areas and collection points, implementation and maintenance of signage, and security of storage areas	Section 6 & 7

Details of the management of waste from construction and demolition	Addressed in separate
activities to be minimised by avoidance and reduction practices, re-use	construction and demolition waste
onsite and the recycling of materials	management plan
A waste management plan for demolition and construction including material storage areas, and a waste management plan for operation	C&D waste management plan prepared separately. This document is the operational waste management plan
Identify, quantify and classify the likely waste to be generated and describe	Addressed in separate
measures to be implemented to minimise, reuse, recycle and safely	construction and demolition waste
dispose of this waste during demolition and construction	management plan

# 4. Operational Waste Generation Estimate

Based on the information provided regarding the proposed development and the intended uses of all workspaces and food service areas, a waste estimate has been derived using Foresight Environmental's extensive database of ongoing operational waste data from similar developments.<sup>1</sup> Based on the estimated waste profile and in line with industry-leading best practice, the following streams are expected to be generated in the ongoing operation of the development:

- Food waste
- Cardboard/paper
- Mixed recycling (plastics, glass, aluminium, steel)
- Landfill
- Chemical waste
- Sharps
- Biological waste

Additional ad-hoc waste streams may include clean glass from labs, toner cartridge recycling, fluoro tube/globe recycling and battery recycling.

<sup>&</sup>lt;sup>1</sup> Foresight Environmental currently reports the ongoing operational waste data for over 7million m<sup>2</sup> of Australian A and B grade commercial/retail/industrial/mixed use property. This extensive database provides the most current and detailed information on real-world waste generation performance and trends available and enables very accurate modelling for prospective property developments

### 4.1 Estimated Waste Generation (common waste streams)

The following tables detail the estimated waste profile and generation rates for the common waste streams from the operations of the facility. The specialty waste streams detailed above have not been included in the ongoing waste estimate due to the specialized nature of these streams – details on these streams are provided in section 7. It should be noted that the following waste generation profile is an estimation only, based on full occupancy.

Waste Stream	Kg/day	L/day	Kg/week	L/week
Landfill	80	766	563	5,359
Paper	66	733	462	5,130
Organics	35	127	248	886
Mixed Recycling	15	242	102	1,693
Cardboard	22	629	154	4,400
Total	218	2,495	1,528	17,468

#### Table 3 - Common waste generation estimate

# 5. Waste Management Systems

## 5.1 Common Waste Streams

The following table shows the recommended bin systems for the management of total waste for the facility within the base building waste storage area on Ground level. The systems and collection frequency provide ample capacity for the projected waste generation of the development.

Waste Stream	Bin Type	Size in m³	No. of bins	Weekly Clearance Frequency	Weekly capacity (L)	Estimated volume/ Week (L)	Footprint per bin m²	Total footprint m²
Landfill	MGB	1.1	2	3	6,600	5,359	1.69	3.3
Paper	MGB	0.24	8	3	5,760	5,130	0.43	3.4*
Organics	MGB	0.12	2	5	1,200	886	0.27	0.5
Mixed Recycling	MGB	0.66	1	3	1,980	1,693	1.05	1.05
Cardboard	MGB	1.1	1	4	4,400	4,400	1.69	1.7
Bulky storage/ special waste contingency space	Bulky storage/ special waste contingency space						8	
Total					9.9			
Including 50% additional space around bins for manoeuvring						14.9		
Current spatial provision in design						16.2m <sup>2</sup>		

Table 4 - Recommended equipment and collection frequency

\*Note: paper bins will be stored on floors in appropriate areas i.e. utility/administration rooms. They will be brought down for collection by cleaning staff on collection days only when they are full and then returned to the respective storage areas on floors after collection. These bins will not be stored in the ground floor waste storage area and it is unlikely that all bins will require collection at the same time so it is unlikely that they will all be presented to the ground floor storage area at the same. There is sufficient circulation space in the ground floor storage area and loading dock to manage these bins as they are presented for collection. For this reason, they have not been included in the total spatial requirement of the area.

The capacity provided by the bin numbers and collection frequency detailed above provide adequate storage for the estimated waste profile from both buildings. There is scope to further increase collection frequency should actual waste quantities exceed these estimates once operational – thus there is additional capacity available to building management should it be required in the future.

## 5.2 Special Waste Streams

The various consulting and clinical operations within the facility will produce a variety of special waste streams that will need to be managed in accordance with hazardous waste disposal guidelines and legislative requirements. The table below details the expected waste streams and associated information. Generation rates have not been estimated due to the more ad-hoc nature of these waste streams - collection frequency will be managed by appointed staff, specific details are provided in section 7.

Waste Category	Colour code & bin type	Description	Legislation/Australian Standard
Chemical	Appropriate container per MSDS and bunded chemical container cabinet	Chemicals - hazardous Chemicals - non-hazardous	<ul> <li>NSW WHS Act and regulations</li> <li>POEO Act 1997</li> <li>AS/NZS 2243.2</li> </ul>
Sharps	Yellow sharps container	Sharps e.g. scalpel blades, syringes etc	<ul><li>AS/NZS 2243.3</li><li>AS 4031</li></ul>
Broken Glass	White broken glass container with lid	Broken glass - contaminated Broken glass - non- contaminated	• AS/NZS 2243.1
Cytotoxic	Purple base bin with purple lid	Cytotoxic drugs or materials contaminated with cytotoxic drugs	• AS/NZS 2243.1 & 2
Clinical/ Biological	Yellow base bin with yellow lid (onsite autoclave prior to disposal for risk group 2 biological and GM waste - not required for risk group 1 or clinical waste)	Clinical, Infectious, GMO, Biological waste	<ul> <li>AS/NZS 2243.3</li> <li>AQIS</li> <li>Gene technology Act and Regulation</li> <li>National Security Act and Regulation</li> </ul>



## 5.3 Other waste/recycling

The following waste streams will be collected on call as needed:

- Battery Recycling Battery recycling boxes will be present where deemed necessary e.g. office copy/utility rooms. These boxes will be transferred to the waste storage area on Ground level and collected when full by a dedicated contractor.
- Toner Cartridge Recycling Used toner recycling boxes (usually provided by office supplier or Planet Ark) will be used where deemed necessary e.g. office copy/utility rooms. These boxes will be transferred to the waste storage area on Ground level and collected when full by a dedicated contractor.
- E-waste collected by facilities management staff and consolidated for collection by specialty ewaste contractor for recycler. One 240L bin will be located within the waste storage area and collections will be managed on an on-call basis due to the ad hoc nature of this waste stream.
- Bulky waste it will be the duty of tenants to inform facilities management staff of any bulky waste that will be required to be removed from site, including material generated during defit/refurbishments. The material/s can be stored in the waste storage area on Ground level (approximately 5m<sup>2</sup> has been allocated) facilities management will coordinate with the waste contractor to organize a collection as required on an on-call basis.
- Contractor/delivery waste Waste generated onsite by contractors/deliveries must be taken back unless prior consent has been negotiated with facilities management.
- Lamps and Globes Spent lighting materials to be consolidated by staff/cleaners/maintenance staff and collected by specialty

# 6. Waste and Recycling Storage Areas

## 6.1 Waste Storage Area - Ground Level

The waste storage area for the development is located on Ground level and provides sufficient capacity for the recommended systems for the development. Figure 1 below shows the indicative layout of the waste storage area adjacent to the loading dock.

Figure 1: Indicative waste storage area layout



## 6.2 Amenity

The main waste and recycling storage room will have the following features:

- Ventilation: The bin storage rooms will be naturally ventilated by external air flow or mechanically exhausted in accordance with AS 1668.2-2002
- Vermin and Odour Prevention:
  - Opening will be vermin proof
  - o Cleaners are to ensure that bin lids are closed when unattended
- Floor: Structural concrete slab with smooth epoxy topping finish with coved wall and floor junctions. Graded drains to approved sewer connections fitted with an in-floor dry basket arrestor approved by Sydney Water Corporation
- Water Supply: cold tap and hose connection servicing graded bin wash areas
- Signage: clear signage identifying the various streams and appropriate use will be prominently displayed (see section on signage below)
- Walls: Brick work/concrete block or similar finished in a light coloured, washable paint
- Ceiling: Structural concrete slab over
- Lighting: Base building lighting with switches inside and outside waste room (sensors may also be used)

The ongoing maintenance and up-keep of the waste storage room will be the responsibility of cleaning/building management staff. They will be tasked with ensuring bins are stored neatly and are cleaned as required.

## 6.3 Signage

All waste and recycling streams should be differentiated with clear signage on all bins and on walls within the waste storage area. Below are examples of appropriate signage incorporating textual information, pictures and colour-coding to communicate the message.



# 7. Onsite Management Protocols

### 7.1 Common Areas

A "bin-hub" approach to waste management for the common waste streams should be implemented throughout common areas/admin/workspaces etc. This system entails providing bin hubs at central locations and regular intervals throughout the floors as opposed to providing bins under every desk or in every room.

This approach has the following benefits:

- Better separation of recyclables as individuals are required to make a conscious decision as to which bin they place their items
- Fewer bins for cleaners to service results in a significant reduction in cleaner time spent on emptying and re-lining bins
- Significant reduction in bin liners required resulting in ongoing cost savings and reduced general waste

Bin hubs can be housed within cabinetry or can stand alone in appropriate locations - operator preference. Typically, bins are approximately 60L in volume which provides sufficient capacity and ease of handling for cleaners. The following figures provide examples of bin hub configurations.

Figure 2 - Examples of freestanding bin hubs









Figure 4: Indicative bin-hub detail within cabinetry (see appendix for more specifications)









Staff will be responsible for depositing their waste and recyclables into the appropriate bin throughout the day. Cleaning staff will then be responsible for emptying all materials from the bins hubs as required throughout the day into a segregated cleaners trolley to maintain the separation of the streams before finally emptying the waste and recycling into the larger bins in the waste storage room on basement level.



Figure 5 - example of segregated cleaner trolley with separate bags for different streams

Facilities management may consider adding a small organics caddy to staff kitchen areas in the future to capture food waste from these areas.

Figure 6 - Example of a kitchen caddy for the capture of organic material in kitchen areas



### 7.2 Special Wastes in treatment areas

The following sections provide details on the high-level management protocols for the various categories of special waste that may be generated from treatment/clinical activities. The details provided below provide broad guidelines for appropriate disposal and management protocols but are not a substitute for a detailed Laboratory Hazardous Waste Disposal Policy or Guidelines.

#### 7.2.1. Chemical Waste

Hazardous chemicals from treatment must under no circumstances, be allowed to enter storm water drains. In addition, careful consideration should be given to the location and bunding of chemical waste containers to ensure any potential leaks do not enter indoor or outdoor drains, including storm water drains. Spill kits should also be made available in all areas where chemical waste areas generated. Chemical wastes should be stored in clinical prep rooms/chemical stores within dedicated bunded chemical waste cabinets – likely that a corrosive dangerous goods cabinet and a flammable dangerous goods cabinet will be implemented in order to isolate these chemical categories (to be determined by lab staff). Chemical waste collection will be managed through the facility by the operator. The specialty waste contractor will collect chemical waste directly from the storage areas throughout the facility as required by the operator.

Figure 7 - Example of a bunded chemical storage cabinet



Solid waste with minimal chemical contamination (gloves, wipes, vial etc) should be placed into appropriately labelled clinical/biological waste bags and placed into yellow clinical waste bins (if solids are not contaminated with GM or Risk Group 2 materials - in which case they should be dealt with in the same manner as those hazards require - see section 7.2.5 below).

### 7.2.2. Sharps

All sharps are to be collected in a rigid, puncture-proof container that meets Australian Standard requirements (see AS 4031). Small items with sharp edges are collected in the yellow sharps bins, unless they contain cytotoxic contamination and must therefore be discarded into a purple cytotoxic sharps bin. The sharps bins should remain in the area where the sharps are generated until the container is full or the container is no longer required. Once full, the sharps containers will be capped and placed into the yellow clinical waste bin. The bins are to be locked closed and removed from the area to the relevant (biological/cytotoxic) waste collection point. The specialist waste contactor will collect full sharps bins upon request directly from the storage areas within clinical prep rooms – at a minimum of once per week to avoid putrification.

Figure 8 - Example of yellow and purple sharps containers.



### 7.2.3. Broken Glass

Non-contaminated glass - broken glass should be placed in a dedicated, appropriately labelled container with a lid, which when full should be disposed in the general waste stream - although uncontaminated, glass from beakers, flasks etc cannot be disposed in the mixed recycling stream.

Contaminated glass - any glass that has been contaminated should also be placed into a dedicated, appropriately labelled container and be treated the same as the other waste of the same hazard i.e. cytotoxic, biological waste etc.

### 7.2.4. Cytotoxic Waste

Cytotoxic waste is any substance contaminated with any residue or preparations that contain materials that are toxic to cells principally by their action on cell reproduction. All cytotoxic waste should be placed in an

approved and appropriately labelled purple cytotoxic bag or container. When the residue bag/container is full, it should be placed in a purple labelled cytotoxic waste bin kept in secure area within clinical prep areas. The specialty waste contractor will collect cytotoxic waste directly from the storage areas within clinical prep/chemical stores. The operator will determine the bin size required based on actual quantity of cytotoxic waste produced once operational.

Figure 9 - Example of purple cytotoxic waste 120L bin and 5L container (bin size to be determined by lab operators)



### 7.2.5. Biological Waste

Risk Group 2 Biological/clinical and GMO waste must be rendered non-viable before disposal. This generally means autoclaving prior to disposal. All biological waste requiring autoclaving should be contained in yellow clinical waste bags clearly labelled with the biohazard symbol on the outside. Waste should be autoclaved according to the requirements laid out in AS/NZS2243.3. Once autoclaved, the treated waste can be placed into a yellow biological waste bin and stored in a secure location within the lab prep/storage area until collection. The specialty waste contractor will collect biological waste directly from the storage areas within lab prep stores at a minimum of once weekly.

Risk Group 1 waste can be bagged and appropriately labelled before disposing into the yellow clinical waste bins.

Figure 10 - Example of a 64L and 120L bin for clinical waste (bin size to be determined by lab operators)



### 7.3 Other Wastes

#### 7.3.1. Secure Document Recycling

Secure document recycling bins will likely be required for various stakeholders throughout the facility. It is recommended that these bins be stored and controlled by internal facilities managers rather than being publicly available on the floors for anyone to use. Staff/individuals on each floor should be advised of any internal policies which stipulate that confidential documents should be disposed into the secure document bins

#### 7.3.2. Toner cartridge recycling

To minimise generating toner cartridge waste all printers should be set to double sided printing as a default. Tenants should also install printers and photocopiers that have refillable toner cartridges, which are refilled as part of the supply agreement. Where cartridges are generated recycling systems should be implemented. Typically a free service provided by Planet Ark for example is sufficient - this system will consist of a large cardboard box located within the print rooms which will be collected by Planet Ark upon request by tenants.

#### 7.3.3. E-Waste

An E-waste bin will be located in the waste storage area on Ground level for ongoing management/collection of this stream. Due to the ad-hoc nature of this stream, individuals within the facility should be made aware of this service by facilities management - individuals should then either take the relevant items directly to the waste area and dispose into the bin or arrange with facilities management for the items to be collected from their work area. When full, the bin will be serviced by the appointed waste contractor (or specialty e-waste contractor) upon request of the facilities management would arrange additional bins to be delivered to site by the waste contractor specifically for this collection.

Measures should be taken to avoid generating E-waste and take-back programs with the supplier or reuse programs with charities or schools are encouraged.

#### 7.3.4. Lamps and Globes

Lighting waste may be generated throughout the building and should be kept separate from the other recycling streams. Cleaners will transfer the material to the waste storage room where it will be collected directly by a specialist contractor upon request.

# 8. Collection

Table 3 details the suggested collection frequency for all waste and recycling streams. The appointed waste contractor will be able to access the site via the proposed side street off Bourke Road. Collections will occur from the loading dock on an agreed after-hours collection schedule (likely between 10pm-6am - to be confirmed in collaboration with appointed waste contractor). The loading facilities allow entry/exit in a forwards direction - refer to the Traffic report for details. The figure below shows the access and collection point.



Figure 11: Site access and waste collection point

The following figures shows the indicative specifications of a rear-lift MRV which will be used by the appointed waste contractor to collect waste and recycling from each waste storage area.

Figure 12: Medium rigid rear-lift truck dimensions



# 9. Conclusion

The details of this waste management plan confirm that the waste facilities provided in the proposed design adequately cater for the projected waste generation rates at the completion of the development.

# Appendix 1 - Cabinetry bin options

Hydration Stations - 2x40L "slide and sort" configuration from https://www.sourceseparationsystems.com.au/product/slide-and-sort-kit

SS-40-2BPAR*80 Litres570 mm724 mm477 mmSS-40-2BE2E*80 Litres570 mm464 mm737 mm					
SS-40-2BE2E *         80 Litres         570 mm         464 mm         737 mm	SS-40-2BPAR *	80 Litres	570 mm	724 mm	477 mm
	SS-40-2BE2E *	80 Litres	570 mm	464 mm	737 mm

Micro-kitchens - 3x60L "slide and sort" configuration

