Alexandria Health Centre

28 - 32 Bourke Road,

Alexandria

Operational Waste Management Plan

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This report is based on information provided by **Centuria Healthcare Pty Ltd** coupled with Foresight Environmental's knowledge of waste generated within the mixed-use development 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 **Centuria Healthcare Pty Ltd.**

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1	6 October 2023	Initial issue for review
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1. Executive Summary

This Operational Waste Management Plan (OWMP) has been prepared by Foresight Environmental on behalf of **Centuria Healthcare Pty Ltd** to support a Stage 2 State Significant Development Application (SSDA). The plan details the way in which the proposed development at 28 – 32 Bourke Road, Alexandria will manage the waste and recycling generated from the ongoing use of the development in accordance with the industry specific Planning Secretary's Environmental Assessment Request (SEARs) requirements and the City of Sydney Policy for Waste Minimisation in New Developments 2018 (CoS Guidelines)

This plan confirms that the waste facilities provided in the proposed design will adequately cater for the projected waste generation rates at the completion of the development.

2. Overview of Proposed Development

The project comprises the detailed design and delivery of the 'Alexandria Health Centre' comprising a multi-purpose health facility anchored by a mental health hospital with medical centre space located on lower levels to be occupied by allied health providers. The facility will provide unique services targeted at privately insured patients aged 18+ with mood disorders, anxiety disorders, and those with comorbid drug and alcohol disorders. The facility will provide both inpatient and outpatient services to suit the specific needs of the patients.

The existing site contains a single level warehouse (current operating as Sydney City Tyres), which is proposed to be demolished for the redevelopment of an approx. 11,436m2 GFA mixed used development.

The application seeks consent for the following in accordance with the Concept SSDA approval:

- Site establishment including earthworks.
- Construction of the Alexandria Health Centre:
    - Total GFA of 11,436sqm
    - Maximum FSR of 3.85:1
    - Maximum height of 34.95m, Max RL. 45.4

- Ancillary development including:
  - Car parking – 77 car parking spaces distributed across basement, ground, and ground mezzanine levels.
  - Utility infrastructure and services connections.
  - Building identification signage and wayfinding signage.
  - Stormwater management
  - Landscaping
- Laneway for vehicle and pedestrian access along with western boundary of the site
- Operation of the Alexandria Health Centre as a mental health hospital and medical centre with ancillary uses.

Figure 1: Site in context

3. Operational Usage

The following tables show the development area profile – made up of a mental health hospital, medical centre, pharmacy, and GP. Table 1 breaks down the components and their Gross Floor Areas (GFA). Table 2 breaks the components down into their Net Lettable Areas (NLA), which are the waste generating areas that have been used to estimate a waste profile for the development.

The usage breakdown by area is as follows:

Table 1 – Area breakdown by level and GFA

Level	Area	GFA (m^2)
Basement	Carpark	-
Ground	Lobby/Medical Centre	1,031
Mezzanine	BOH/Storage/Plant	469
Level 01 – 03	Medical Centre	5,925
Level 04	Mental Health Hospital	1,417
Level 05	Mental Health Hospital	1,269
Level 06	Mental Health Hospital	1,269
	Total	**11,380**

Table 2 – Area breakdown by waste generating areas and Net Lettable Area (NLA)

Area	Metric Category	NLA (m^2)
Medical Centre/Mental Health Hospital	Consulting	10,214
Kitchen/Dining Room/Staff Rooms	Retail	201
Administration Areas	Commercial	96
	Total	**10,511**

4. Assessment Requirements

The Department of Planning and Environment has issued SEARs for the proposed development. This report addresses the requirement for an OWMP as set out in requirement 18 as follows:

Table 3 – SEARS: Industry specific requirements for Hospitals, Medical Centres and Health Research Facilities: Waste

SEARs Key Issues and Documentation	Deliverable
18. Waste Management Plan • Identify, quantify, and classify the likely waste streams to be generated during construction and operation.	• **See C&DWMP for construction** • **Section 5**
• Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	• **Section 6, 7 & 8**
• Identify appropriate servicing arrangements for the site.	• **Section 9**
• If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	• **Refer to Hazardous Materials Survey Report**

SSD1 lists the following requirements to satisfy the development conditions of consent:

Table 4 – SSD development conditions and deliverables

SSD-38600121: Schedule 1	Deliverable
B27. Future development application(s) must include an Operational Waste Management Plan prepared in accordance with Council's waste management guidelines to address storage, collection, and management of waste and recycling within the development.	**Operational Waste Management Plan**
B44. Future development application(s) must include a preliminary Construction Waste Management Plan, prepared by a suitably qualified professional to provide an analysis and assessment of construction including (but not limited to): d) Construction Waste Management Plan	**Construction Waste Management Plan**

This OWMP has been prepared in accordance with the City of Sydney Policy for Waste Minimisation in New Developments 2018.

5. 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[1] and the City of Sydney's Guidelines for Waste Management in New Developments[2]. Based on the estimated waste profile and in line with industry-leading best practice, the following streams are recommended to be implemented throughout the facility for everyday operational waste:

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

In addition to the above "common" streams, the following streams are likely to be generated in a more ad-hoc manner during the ongoing operation of the facility:

- Paper hand towel
- Toner cartridge recycling
- E-waste
- Battery recycling
- Equipment and lamps/globes that may contain mercury

For the purposes of estimating a waste profile for the development, the NLA of the waste generating components (table 2) is used in conjunction with Foresight Environmental's extensive database of actual operational data from similar developments/assets for the following estimated waste generation.

[1] Foresight Environmental currently reports the ongoing operational waste data for over 7million m^2 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

[2] Guidelines for waste management in new developments - City of Sydney (nsw.gov.au)

5.1 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 8. It should be noted that the following waste generation profile is an estimation only, based on full occupancy.

Waste profiles have been separated where necessary to determine the individual waste profiles of each component (commercial/office areas, kitchen/food areas and consulting areas).

Table 5 – Waste Generation Estimate: Commercial Areas

Waste Stream	Kg/day	L/day	Kg/week	L/week
Landfill	1.0	9.6	7.1	67.5
Paper	0.7	7.4	4.7	51.8
Organics (Food Waste)	0.4	1.4	2.8	9.9
Mixed Recycling	0.1	2.1	0.9	14.4
Cardboard	0.3	7.8	1.9	54.3
Total	**2.5**	**28.3**	**17.3**	**197.9**

Table 6 – Waste generation Estimate: Kitchen/Dining Room/Staff Room Areas

Waste Stream	Kg/day	L/day	Kg/week	L/week
Landfill	28.4	270.7	199.0	1,895.1
Organics (Food Waste)	34.5	123.1	241.2	861.4
Mixed Recycling	11.1	185.2	77.8	1,296.5
Cardboard	12.2	349.5	85.6	2,446.5
Total	**86.2**	**928.5**	**603.6**	**6,499.5**

Table 7 – Waste Generation Estimate: Consulting Areas

Waste Stream	Kg/day	L/day	Kg/week	L/week
Landfill	85.2	811.6	596.5	5,680.9
Paper	31.5	350.2	220.6	2,451.4
Total	**116.7**	**1,161.8**	**817.1**	**8132.3**

Table 8 – Waste Generation Estimate: Total All Areas

Waste Stream	Kg/day	L/day	Kg/week	L/week
Landfill	115	1,092	803	7,644
Paper	32	358	225	2,503
Organics (Food Waste)	35	124	244	871
Mixed Recycling	11	187	79	1,311
Cardboard	13	357	88	2,501
Total	**205**	**2,119**	**1,438**	**14,830**

6. Waste Management Systems

The following sections detail the recommended bin systems for the management of total waste for the facility within the base building waste storage room on the ground floor (GF), and a detailed breakdown of the different waste streams including special waste streams as they relate to a medical facility.

The systems and collection frequency provide adequate capacity for the projected waste generation of the development, but not if actual waste quantities exceed these estimates once operational. Should this occur, there is scope to further increase collection frequency. Facilities management will monitor the systems and increase/adapt accordingly as occupancy increases in consultation with the appointed cleaning and waste contractors. See Appendix 1 for bin specifications.

6.1 Common Areas

Table 9 - Recommended equipment and indicative collection frequency: commercial/office areas, kitchen/food areas and consulting areas

Waste Stream	Bin Type	Size in m^3	No. of bins	Weekly Clearance Frequency	Weekly capacity (L)	Estimated volume/ Week (L)	Footprint per bin m^2	Total footprint m^2
Landfill	MGB	1.1	2	4	8,800	7,644	1.69	3.4
Paper	MGB	0.24	2*	4	2,400	2,503	0.43	0.9*
Organics (Food Waste)	MGB	0.12	2	4	960	871	0.27	0.5
Mixed Recycling	MGB	0.66	1	3	1,980	1,311	1.05	1.05
Cardboard	MGB	1.1	1	3	3,300	2,501	1.69	1.7
Bulky storage/Special waste contingency							8.00	8.00
Total								14.7
							Including 50% additional space for circulation	**22.0**
							Current spatial provision from design	**23m^2**

*Note: paper bins will be stored on floors in appropriate areas i.e., consulting/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 on the GF waste storage room, 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 storage area at the same time. There is sufficient circulation space in the GF 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.

6.2 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.

Table 10 – Special waste bin systems and guidelines

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	• NSW WHS Act and regulations • POEO Act 1997 • AS/NZS 2243.2
Sharps	Yellow sharps container	Sharps e.g. scalpel blades, syringes etc	• AS/NZS 2243.3 • AS 4031
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	• AS/NZS 2243.3 • AQIS • Gene technology Act and Regulation • National Security Act and Regulation

6.3 Waste Streams

6.3.1. Primary Waste Streams

Table 11 – Primary streams acceptance criteria

Waste Stream	Acceptable items	Not Acceptable items
Mixed Recycling	Empty glass, aluminium, plastic, steel bottles/cans/containers	All other items
Cardboard & Paper	Office Paper, Envelopes, Manilla Folders, Newspapers, Magazines, Cardboard	Plastic bags, food, waxed carboard, polystyrene, food-soiled cardboard
Food (Organics)	Food Scraps, Coffee Grounds, tea bags, flowers, herbs & garden trimmings.	Plastic including straws, butter sachets, Australian certified compostable packaging (AS 4736), cling wrap, meat packaging. Biodegradable bags, polystyrene cups, grease trap waste, aluminium foil, coated cardboard, metal
Landfill	Putrescible waste (non-hazardous)	Hazardous materials such as batteries, E-waste and liquids

6.3.2. Additional Waste Streams

Table 12 – Management Protocol for additional streams

Waste Stream	Management Protocol
Paper hand towel recycling	In an effort to reduce waste generation volumes, a paper hand towel free system in bathrooms should be considered. Replacing hand towels with a system such as the 'Airblade' produced by Dyson[3] or the "Jet Towel" produced by Mitsubishi Electric[4] may prove to be more environmentally (and economically) efficient than a paper hand towel system. If a paper hand towel system is chosen, then it should be confirmed with the appointed waste contractor which recycling stream is most appropriate for this material.
Toner cartridge recycling	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 the facilities manager.
E-Waste	An E-waste collection service should be set up either quarterly or biannually depending on volumes generated. E-waste will be collected and managed by facilities management – all items will be transferred to the dedicated bins within the waste storage room where it will be collected directly by a specialist contractor upon request. 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.
Vegetation	Due to the high level of landscaped and vegetated areas within the development, there is the assumption that there will be a dedicated landscaper that will be responsible for the removal of all green waste, and as such has not been considered in the streams.

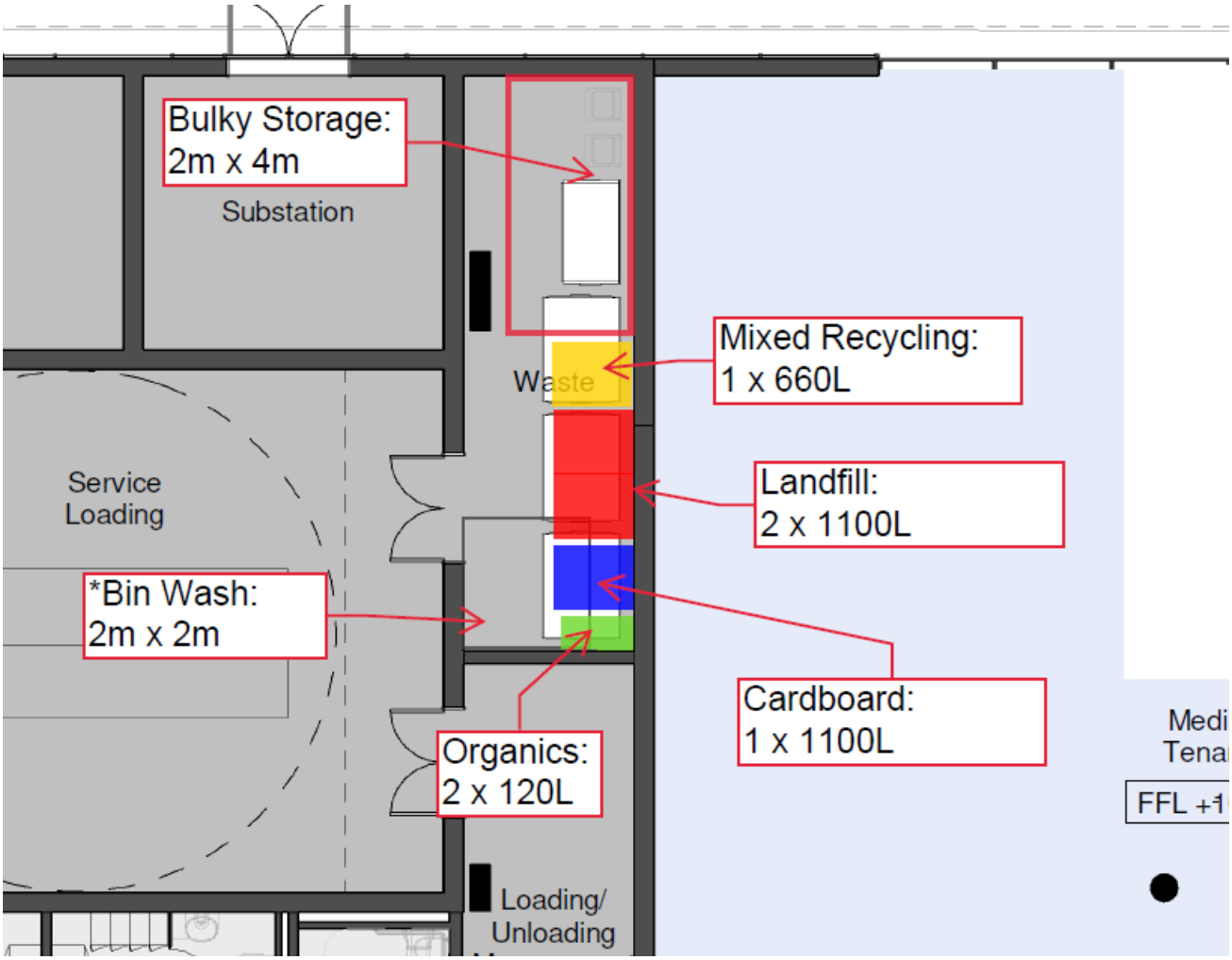
[3] Information gathered from http://www.dysonairblade.com.au/
[4] Information gathered from http://www.mitsubishielectric.com/bu/handdryer/products/index.html

7. Waste and Recycling Storage Areas

The areas detailed in section 6 above indicate the total footprint and spatial requirements for the waste storage room. The waste storage room for the development is 23m^2 and is located on the GF, with sufficient capacity for the recommended systems for the development. There is an allocation for bulky waste within the waste storage room that complies with the CoS Guidelines. The bin wash allocation of 2m x 2m is a general guide.

The figure below shows the location and layout of the waste storage area on the GF.

Figure 2: Indicative layout of waste storage rooms - GF



*Bin wash size is a general guide - as it is a graded drain with taps and not a blocked off space, there can be some overlap of bins.

7.1 Waste Room Amenity

In accordance with the provisions of the CoS Policy for Waste Minimisation in New Developments, each waste and recycling storage room will have the following features:

- Ventilation: The bin storage room will be ventilated to external air or mechanically exhausted in accordance with AS 1668.2-2002
- Vermin Prevention:
    - The bin storage rooms will feature tightly fitted doors.
    - Opening will be vermin proof.
    - Cleaners are to ensure that bin lids are closed when unattended.
- Noise: Noise will not be an issue due to the location of the waste storage room away from public.on basement level 1.
- 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.
- 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)
- Water Supply: cold tap and hose connection
- Signage: clear signage identifying the various streams and appropriate use will be prominently displayed (see section on signage below)

7.2 Signage

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

Figure 3: Best Practice - Stream Appropriate Signage

8. Onsite Management Protocols

8.1 Internal Management and Movement of Waste

The sections below outline the onsite management protocols for the transfer of bins to the waste rooms/ loading/collection zone on the GF. The details provided outline a high-level management procedure for the movement of waste internally amongst the different areas.

8.1.1. Common Areas

A "bin-hub" approach to waste management for the common waste streams should be implemented throughout common areas/admin/workspaces etc. Establishing centralised bin-hubs at central locations and regular intervals throughout the floors, for the management of all relevant waste streams will typically drive better practices – by requiring staff and visitors to interact with the centralised systems, they are forced to make a choice as to which bin they dispose their materials into. Additionally, the common contamination issues associated with individual desk bins or bins in every room are significantly reduced through a centralised bin-hub approach.

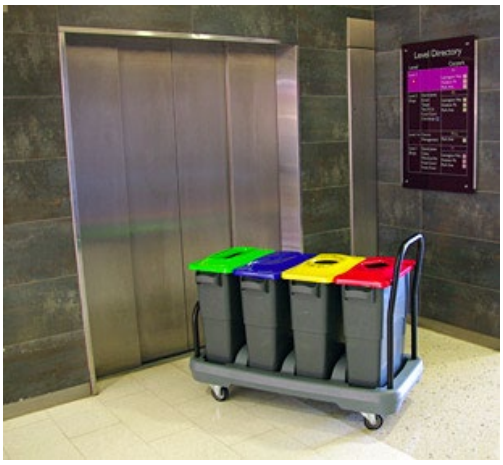
Bin hubs can be housed within cabinetry or can stand alone in appropriate locations – operator preference. Regardless of the approach, it is recommended that tenant signage is clearly displayed throughout on bins or on cabinetry doors to ensure clear, consistent messaging is achieved throughout. Typically, 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 4: Freestanding bin hub configuration

Figure 5: Example bin hubs integrated into cabinetry.

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 6: Multi-sort bin trolley for retailer movement to waste storage room (reference only, trolley not a requirement)



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

Figure 7: Example of a kitchen caddy for the capture of organic material in kitchen areas

The figure below details the path of access for facility staff/cleaners from a typical floor to the waste storage room on the GF.

Figure 8: Waste travel path for cleaners/facility staff from a typical floor to the GF waste storage room

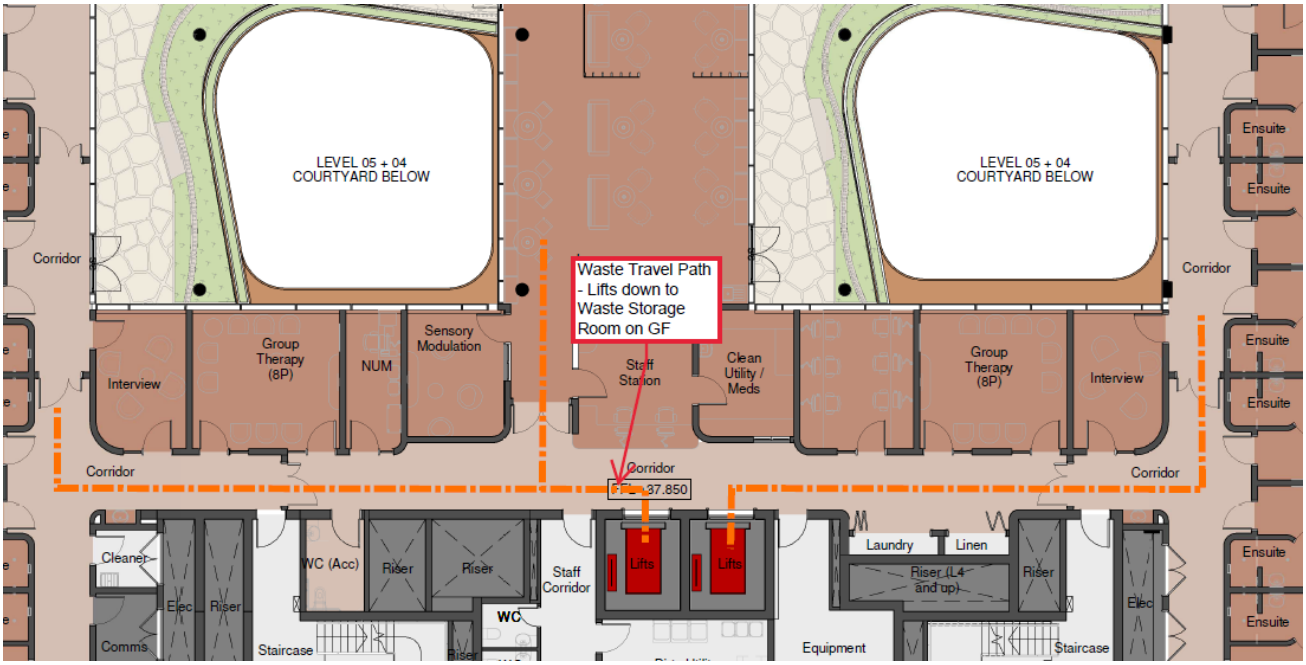
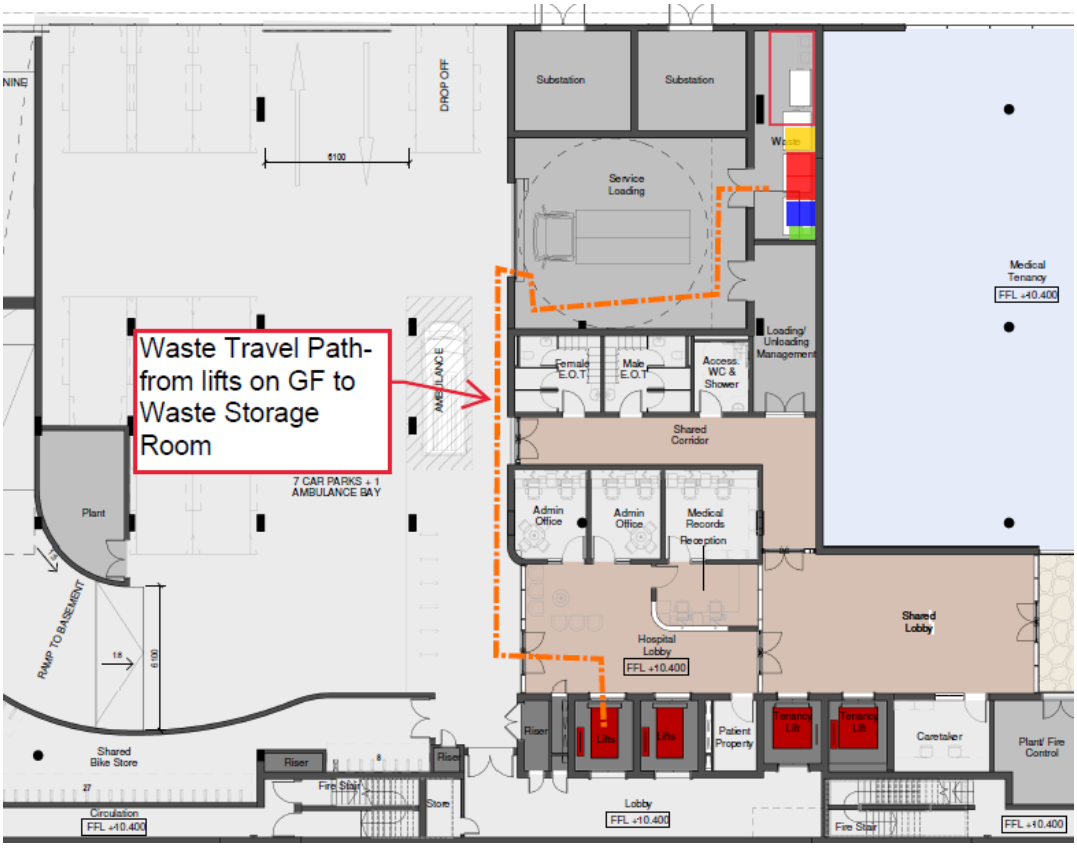


Figure 9: Waste travel path for cleaners/facility staff from lifts on the GF to the Waste Storage Room



8.2 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 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.

8.2.1. 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 is generated. Chemical wastes should be stored in clinical prep rooms/chemical stores within dedicated bunded chemical waste cabinets – it is 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 10: Example of a bunded chemical storage cabinet

Solid waste with minimal chemical contamination (gloves, wipes, vials etc) should be placed into appropriately labelled clinical/biological waste bags and placed into yellow clinical waste bins (if solids are not contaminated with GMO 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).

8.2.2. 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 11: Example of yellow and purple sharps containers.

8.2.3. 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 of into 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.

8.2.4. 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 12: Example of purple cytotoxic waste 120L bin and 5L container (bin size to be determined by lab operators)

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

Figure 13: Example of a 64L and 120L bin for clinical waste (bin size to be determined by lab operators)

9. Collection

Section 5.1 details the suggested collection frequency for all waste and recycling streams, and the figure below shows how the appointed waste contractor can access the site and collection points. The appointed waste contractor will be able to access the site from a laneway off Bourke Road, and then conduct collection from the loading dock – utilising the turntable to enter and exit in a forwards direction and to position the truck(s) for bin collections. The waste contractors will transfer full bins from the waste room to the truck for rear-lift bin collection. Empty bins will then be returned to the waste room after collection.

Waste truck specifications will vary slightly between contractors however as a guide, all streams and bins recommended in this report would typically be collected by a MRV rear lift waste truck – Figures 14 and 15 provide examples of two common sizes used by most commercial waste contractors. Collections will occur on an agreed after-hours collection schedule (likely between 10pm-6am – to be confirmed in collaboration with appointed waste contractor).

Figure 14: Site access and waste collection point

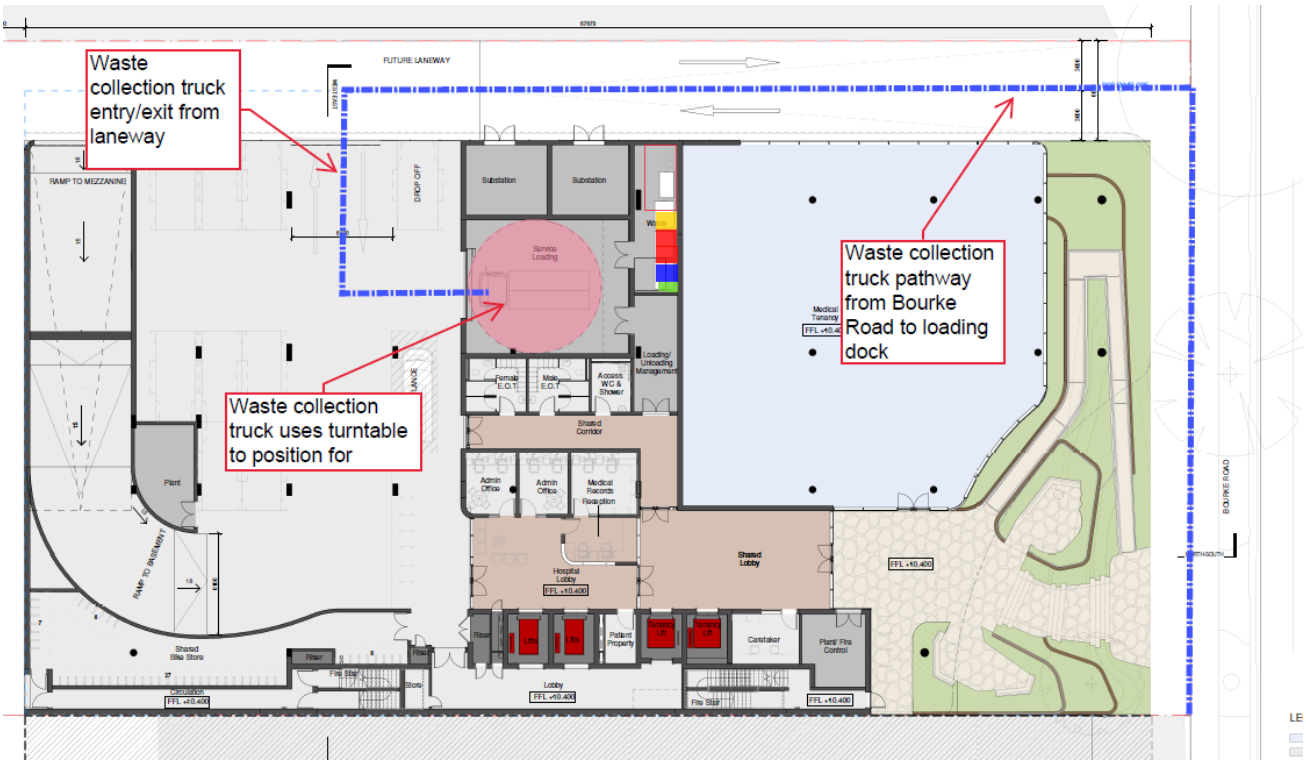


Figure 15: Small rear-lift commercial waste truck specifications

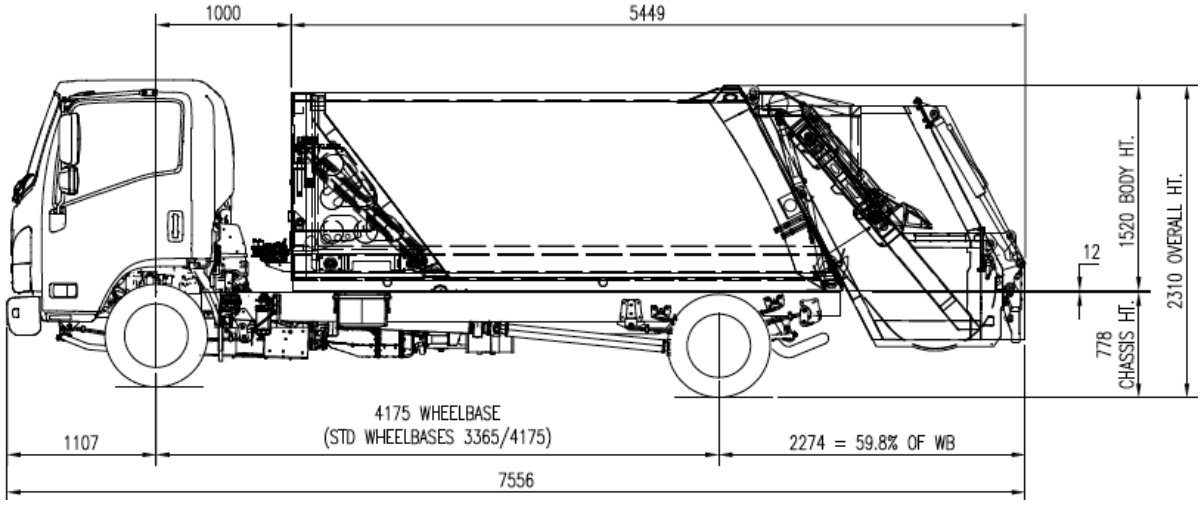
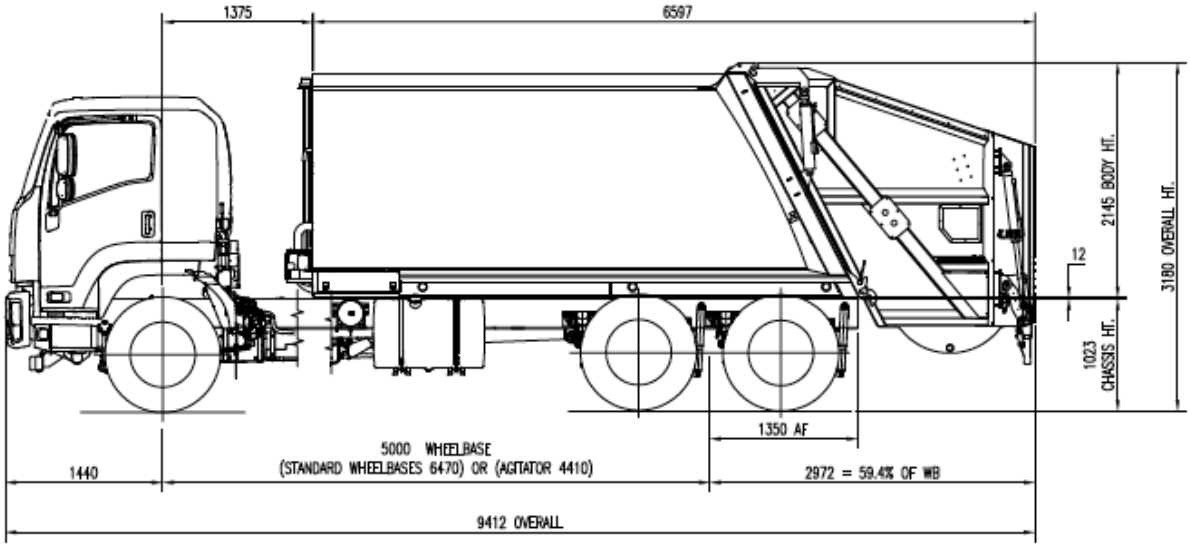


Figure 16: Medium rear-lift commercial waste truck specifications

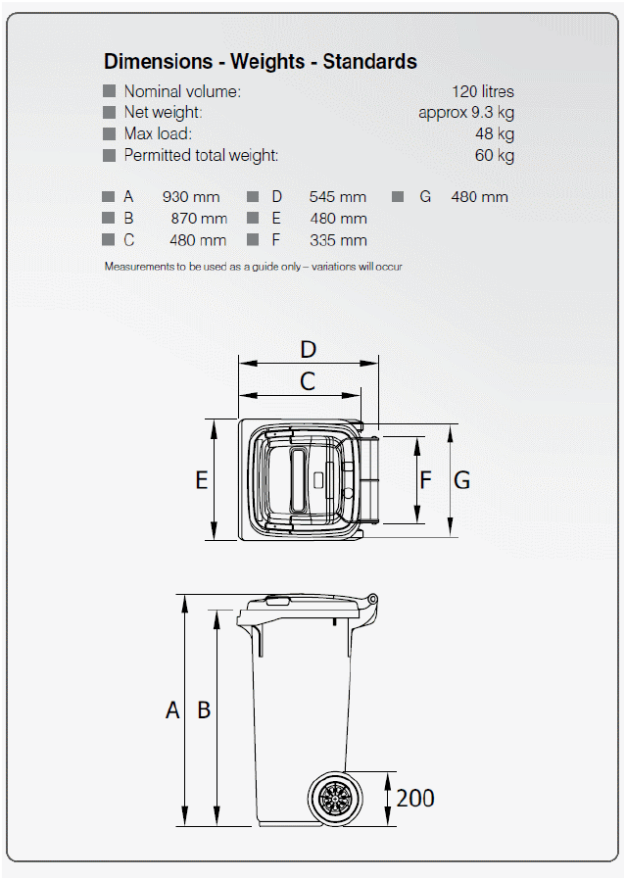


10.Conclusion

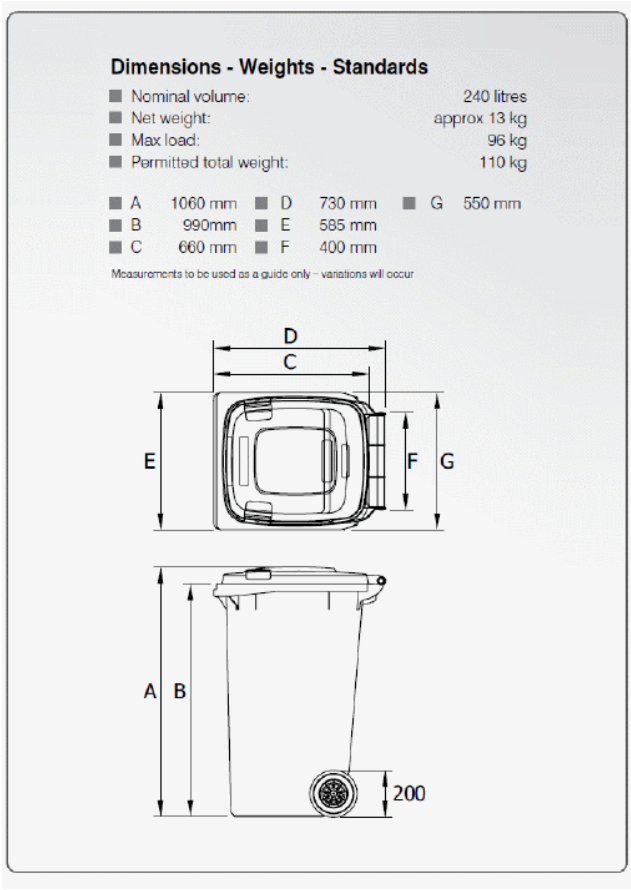
The details of this waste management plan confirm that the waste facilities and operational strategy for the Alexandria Health Centre at 28 – 32 Bourke Road, Sydney adequately cater for the asset's operational waste management requirements and are in line with the SEARs requirements and the City of Sydney's guidelines.

Appendix 1 – Bin Specifications

120L MGB

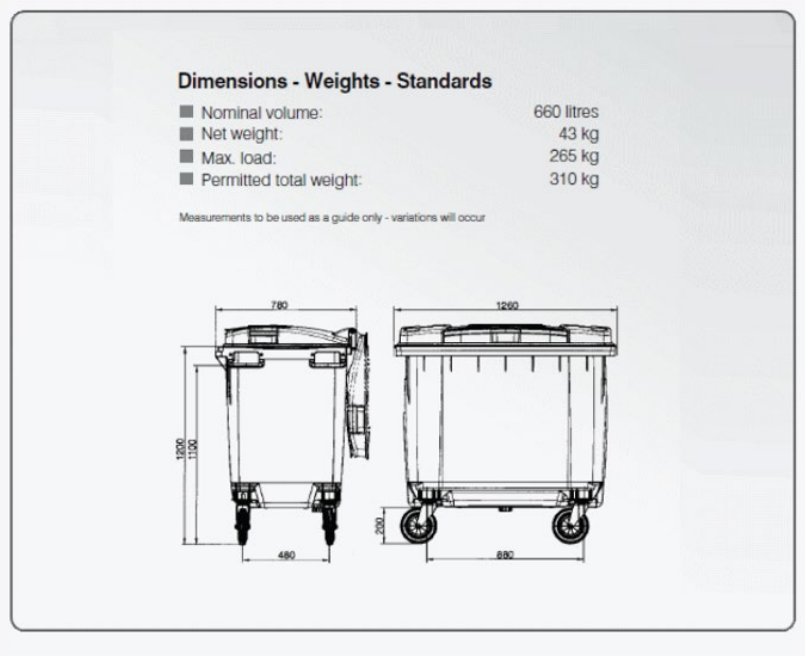


240L MGB

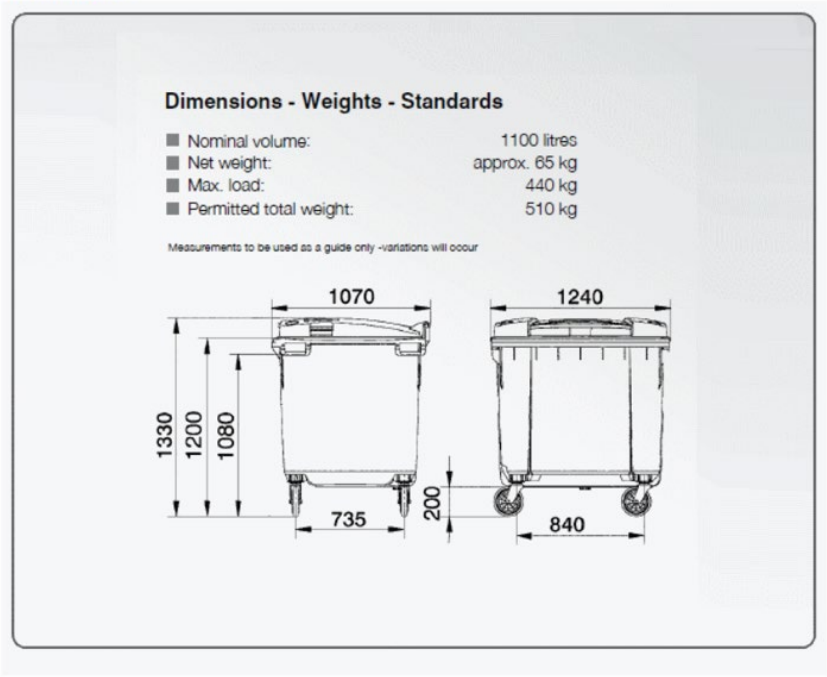


Appendix 1 - Continued

660L MGB



1100L MGB



Alexandria Health Centre

28 - 32 Bourke Road,

Alexandria

Construction & Demolition

Waste Management Plan

Prepared by Foresight Environmental

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1. Executive Summary

This Construction and Demolition Waste Management Plan (C&DWMP) has been prepared by Foresight Environmental on behalf of **Centuria Healthcare Pty Ltd** to support a Stage 2 SSD application. The plan details the way in which the proposed development at 28 – 32 Bourke Road, Alexandria will manage the waste and recycling generated during the demolition and construction phases of the development in accordance with the SEARs requirements and the City of Sydney Policy for Waste Minimisation in New Developments 2018 (CoS Guidelines)

2. Overview of Proposed Development

The project comprises the detailed design and delivery of the 'Alexandria Health Centre' comprising a multi-purpose health facility anchored by a mental health hospital with medical centre space located on lower levels to be occupied by allied health providers. The facility will provide unique services targeted at privately insured patients aged 18+ with mood disorders, anxiety disorders, and those with comorbid drug and alcohol disorders. The facility will provide both inpatient and outpatient services to suit the specific needs of the patients.

The existing site contains a single level warehouse (current operating as Sydney City Tyres), which is proposed to be demolished for the redevelopment of an approx. 11,436m2 GFA mixed used development.

The application seeks consent for the following in accordance with the Concept SSDA approval:

- Site establishment including earthworks.
- Construction of the Alexandria Health Centre:
    - Total GFA of 11,436sqm
    - Maximum FSR of 3.85:1
    - Maximum height of 34.95m, Max RL. 45.4
- Ancillary development including:
    - Car parking – 77 car parking spaces distributed across basement, ground, and ground mezzanine levels.

- Utility infrastructure and services connections.
- Building identification signage and wayfinding signage.
- Stormwater management
- Landscaping

- Laneway for vehicle and pedestrian access along with western boundary of the site
- Operation of the Alexandria Health Centre as a mental health hospital and medical centre with ancillary uses.

Figure 1: Site in context

3. Assessment Requirements

The Department of Planning and Environment has issued SEARs for the proposed development. This report addresses the requirement for an Operational Waste Management Plan as set out in requirement 18 as follows:

Table 1 – SEARS: Industry specific requirements for Hospitals, Medical Centres and Health Research Facilities: Waste

SEARs Key Issues and Documentation	Deliverable
18. Waste Management Plan • Identify, quantify, and classify the likely waste streams to be generated during construction and operation.	• **See OWMP for Operation** • **Section 4**
• Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	• **Section 5**
• Identify appropriate servicing arrangements for the site.	• **Section 6**
• If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	• **Refer to Hazardous Materials Survey Report**

SSD1 lists the following requirements to satisfy the development conditions of consent:

Table 2 – SSD development conditions and deliverables

SSD-38600121: Schedule 1	Deliverable
B27. Future development application(s) must include an Operational Waste Management Plan prepared in accordance with Council's waste management guidelines to address storage, collection, and management of waste and recycling within the development.	**Operational Waste Management Plan**
B44. Future development application(s) must include a preliminary Construction Waste Management Plan, prepared by a suitably qualified professional to provide an analysis and assessment of construction including (but not limited to): d) Construction Waste Management Plan	**Construction Waste Management Plan**

This C&DWMP has been prepared in accordance with the City of Sydney Policy for Waste Minimisation in New Developments 2018.

4. Waste Generation Estimate

The aim of this C&DWMP 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.

4.1 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.

4.1.1. Estimating Waste Quantities – Demolition

To generate demolition waste generation estimates, the following method was used:

1. Quantify materials from the Initial Budget Cost Plan – 220216_28 Bourke Rd_Budget Estimate (01.04.2022).
2. Use these quantities to estimate demolition wastage generation based on material percentages derived from industry standards[1].

The table below details the results - the estimated composition by volume of demolition waste to be generated.

Please note the approximate percentage of recovered waste is only indicative and has been derived from various resource recovery centres in the Sydney district, and as such it is high level and subject to change. Once the specific waste contractor for the site is known, a more detailed analysis can be calculated.

Table 3 – Estimated composition of demolition waste by volume

Material	M^3	Tonnes	Approx. % Recovered
Plasterboard	1	1	94
Metals	7	4	100
Timber	12	13	33 – 100*
General Waste	117	117	20
Bricks	1,030	1,339	100
Concrete	1,685	1,853	100
Total	**2,851**	**3,327**	**-**

*Untreated timber has approximately 100% recovery rate, whereas treated timber is closer to 33%.

[1] waste-management-guidelines-chapter-1-demolition-sep22.pdf (nsw.gov.au)

4.2 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.

4.2.1. Estimating Waste Quantities – Construction

To generate construction waste generation estimates, the following method was used:

3. Quantify materials from the Initial Budget Cost Plan – 220216_28 Bourke Rd_Budget Estimate (01.04.2022).
1. Use these quantities to estimate construction wastage generation based on material percentages derived from industry standards[2].

The table below details the results - the estimated composition by volume of construction waste to be generated.

Table 4 – Estimated composition of construction waste by volume

Material	M^3	Tonnes	Approx. % recovered
Glazing	0.28	0.70	85
Waterproofing Membrane	0.32	0.31	100
Plasterboard	25	19	94
Vegetation	147	147	100
Concrete	431	1,077	100
Excavation	6,727	9,418	100
Total	**7,331**	**10,662**	**-**

[2] Waste Management Plan Application Template.doc (live.com)

5. 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:

Figure 2: Waste hierarchy

The construction and demolition teams will implement this C&DWMP, incorporating the following best practice management techniques as a minimum:

5.1 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.

5.2 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.

5.3 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).

5.4 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.

6. Waste Management Systems

6.1 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.

6.1.1. Demolition

Table 5 - Waste Management Systems

Material	Estimated volume (m^3)	Onsite (re-use or recycle)	Offsite (recycling contractor)
Bricks	1,030	Crushed and reused onsite as aggregate/road base where possible	Removed from site as required for recycling/reuse at C&D facility for processing.
Concrete	1,685		
Timber	12	Reused in formwork, ground into mulch for garden	Timber products and off cuts should be separated and free from contamination to be collected by contractor to be processed/reused
Metals	7		Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling, melted into secondary materials for structural steel, roofing, piping, etc
General Waste	117		Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products where possible

6.1.2. Construction

Table 6: Waste Management Systems

Material	Estimated volume (m^3)	Onsite (re-use or recycle)	Offsite (recycling contractor)
Plasterboard	25	Used in landscaping	Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate recycling facility
Concrete	413	Crushed for road base	Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site.
Vegetation	147	Mulched and reused onsite where possible (landscaping)	Separated where possible and taken to appropriate organic processing facility i.e. Australian Native Landscapes
Glazing	0.28		Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products where possible
Excavation	6,727		

Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities[3]. The figures in Table 5 and 6 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 7.

[3] 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

6.2 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.

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.

6.3 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:

1. 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

6.4 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 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).

6.4.1. 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.

6.5 Contracts and Purchasing

Each subcontractor working on the site will be required to adhere to this Construction & Demolition Waste Management Plan (C&DWMP).

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 C&DWMP as detailed in section 5.6 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.

6.6 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 C&DWMP and explain the site-specific practicalities of the waste reduction and recycling strategies outlined in the C&DWMP.

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.

7. 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 - Alexandria

Contact	Materials Accepted
76 Burrows Road, Alexandria Alexandria Recycling Centre | Bingo Industries	• Asphalt • Concrete • Timber

Bingo Recycling Centre - Artarmon

Contact	Materials Accepted
10 McLachlan Avenue, Artarmon Artarmon Recycling Centre | Bingo Industries	• Brick • Concrete • Timber

Wanless Waste Management – Artarmon

Contact	Materials Accepted
1 - 5 Whiting Street, Artarmon NSW https://wanless.com.au/construction-waste/	• Concrete • Metals • Timber