



**Operational Waste Management Plan for Catholic Healthcare's Residential
Aged Care Facility Casula, NSW - REVISED**



**For
Catholic Healthcare Ltd**

**Date
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1. Introduction
2. Waste management key requirements
3. Waste and recycling volumes
4. Waste removal vehicle requirements
5. Waste minimization recommendations
6. Conclusion

1. Introduction

Catholic Healthcare Limited (CHL) proposes to develop a new 144 bed aged care facility located in Casula, NSW.

Universal Foodservice Design Pty Ltd (UFD) has been engaged to provide advice on the operational waste management processes of this facility. This waste management plan is an **operational plan** that will address the operational requirements of the new facility and will include spatial comments for the waste area. The purpose of this plan is to outline specific measures to attain the following outcomes;

- o Comply with all relevant Local (Liverpool City Council) and State codes, legislative requirements and policies that will apply to this development.
- o Compliant disposal and treatment of generated waste.
- o Options and processes to minimise the quantities of wastes generated ending up as land fill.
- o Waste material handling processes required for the safe and compliant movement of recyclable and general waste from the RACF waste management area.
- o Support the principles of Ecologically Sustainable Development.

This plan has been prepared in accordance with section 72 of the Environmental Planning and Assessment Act 1979, and Part 3 of Environmental Planning and Assessment Regulations.

(This waste management plan does not provide comments or facilitate key requirements for a Construction waste management plan. A Construction waste management plan will need to be developed and employed by the Construction team).

All waste calculations and figures provided by UFD are based on the preliminary architectural plans provided and room numbers as provided by CHL.

Waste management facilities for this site are to be designed and constructed in accordance with current BCA requirements, Australian Standards and Statutory requirements.

Note: The management of medical waste (as used in aged care facilities) is a highly specialised field. If not stored and treated appropriately, some materials can cause infections or injuries, while others can be highly toxic. As such the correct and safe handling of generated waste will be required at all times.

Report background

CHL Management aims to provide a quality Waste Management operation, which incorporates good waste handling processes. CHL upholds the values of the community and will be responsive to the waste management needs of local community, on site residents, families and visitors.

2. Waste management key requirements

Key features

The Casula central waste holding area will be located in the basement of the facility.

CHL Site Maintenance staff will be required to maintain and manage all bin holding/collection areas on this site.

As part of the waste management operations the following points need to be applied:

2.1 Waste management area – Building fabric & services

Facility staff will remove bins from waste holding areas located through the facility on a regular basis, transferring waste to the central waste holding area as detailed in this report.

A contracted waste collector will collect all general and recyclable generated RACF waste on a regular basis (refer to this report for details). The waste management/holding areas will be located for the ease of removal of both recyclable and general waste by the nominated waste collection agency.

The waste holding area and associated fittings must be constructed and installed to comply with the Building Code of Australia (BCA) and all relevant Australian and Local Council Standards. Waste generation rates are based on industry standards for a project of this size and type.

Additionally, the following items are to be incorporated into the new waste management area;

- o To meet City of Liverpool Council Regulations, the ceiling height of waste storage facility shall be a minimum of 2400 mm.
- o The doorway opening to the waste room shall be of adequate size to allow easy access to bins and permit the installation and maintenance of waste handling and compaction equipment (if required) that may be used in the garbage rooms.
- o UFD recommends that the floor to each waste area be a minimum of 75mm thick and coved at the walls and graded to a centrally located floor drain. Flooring will be slip rated in accordance with AS4586.
- o A centrally located approved drain point with removable bucket trap will be installed into the floor. This drain point will be connected to the sewer.
- o Hot and cold water points will be located within the waste management area.
- o UFD recommends the use of a proprietary dock lifter to assist in moving bins from the waste management area to the ground level of the loading bay for waste vehicle collection. This dock lifter may also be used for other operations.
- o All internal walls of the waste areas will be fitted with protective bumper railings. UFD recommends BR-200 Latham bump rail (or approved equal) for these spaces. Bumper railing to be detailed by the architect.
- o The section of driveway that will be used by the nominated Waste Collection Contractor will need to be designed in accordance with Australian Standard AS 2890.2 – 2002 Parking Facilities Part 2: Off-street commercial vehicle facilities for heavy rigid vehicles.

- o Adequate vehicle access needs to be provided with the finished floor to ceiling height of the vehicle pathway not being less than the height of the general and recyclable water collection vehicle – 3600mm.

2.2 City of Liverpool Council

The residential waste and recycling will be guided by the services and acceptance criteria of the City of Liverpool Council. The residential waste and recycling will be collected by council. Commercial waste will be collected by private contractor.

All waste facilities and equipment are to be designed and constructed to be in compliance with the city of Liverpool Council's Domestic Waste Management Policy, Adopted 19 December 2011, council advice, relevant Australian Standards and statutory requirements.

City of Liverpool Council Objectives

City of Liverpool Council objectives for waste management are to avoid waste through design and ordering in correct materials, encourage improved environmental outcomes through increased source separation of materials ensure more efficient management of waste and recyclable materials maximise reuse and recycling of building construction materials, household generated waste and commercial waste.

City of Liverpool requirements

- Access – ensure waste systems are easy to use and collection vehicles are able to access buildings to safely remove waste and recycling;
- Safety – ensure safe practices for storage, handling and collection of waste and recycling;
- Pollution prevention – prevent stormwater pollution that may occur as a result of poor waste storage and management practices;
- Ecologically sustainable development (ESD) – promote the principles of ESD through resource recovery and recycling leading to a reduction in the consumption of finite natural resources;
- Hygiene – ensure health and amenity for residents, visitors and workers in the city of Liverpool;
- Noise minimization – minimize noise during use by residents and collection of waste and recyclables.

2.3 Ventilation requirements

- o The waste Management/collection space will be constructed with a supply and exhaust air system, being constructed in accordance with AS1668.2-2012. (Mechanical consultant to note).
- o The waste Management/collection space must be ventilated by either:
 - Permanent, unobstructed natural ventilation openings direct to the external air, not less than 5% of the floor area.

Note: These ventilation requirements do not apply to the waste holding/collection area located at Street level.

2.4 Insect control

A proprietary bug/insect zapper should be installed in each waste collection room. A general purpose outlet will be provided at high level (2200mm AFFL) in close proximity to the insect zapper's location. This will assist in controlling insects in the waste management area.

UFD recommends the employment of a Birko bug zapper. The Birko 1004101 Insect control unit is the ideal solution for waste storage and food-handling premises where the presence of flying insects presents a risk to staff, residents, guests and customer health, finished goods quality or reputation and customer return rates.



Figure 1 A Birko bug zapper (or equal) is recommended.

2.5 Access

Vehicles access and movement will be as per the details provided by Transportation, Traffic and Design Consultants, "TRANSPORT AND TRAFFIC PLANNING ASSOCIATES".

UFD notes the following;

Access; Vehicle access will comprise a 6.0m wide combined ingress / egress driveway located on the Marsh Parade frontage. The design of these driveways complies with the requirements of AS2890.1 and this section of Marsh Parade is straight and level and there is good sight distances available.

Internal Circulation; The proposed internal circulation arrangements will be in accord with AS2890.1 & 6 and will ensure satisfactory access, manoeuvring and turning within the parking area.

Servicing; Refuse/waste removal and deliveries (up to an 11 meter rigid vehicle) etc. will be undertaken using the proposed loading dock area while small service vehicles (service personnel, cleaners etc.) will also be able to park in.

Details of turning path assessment for vehicles requiring access to the facility and heavy vehicles using the loading dock are provided in Appendix B of the Transportation, Traffic and Design Consultants report (see page over).

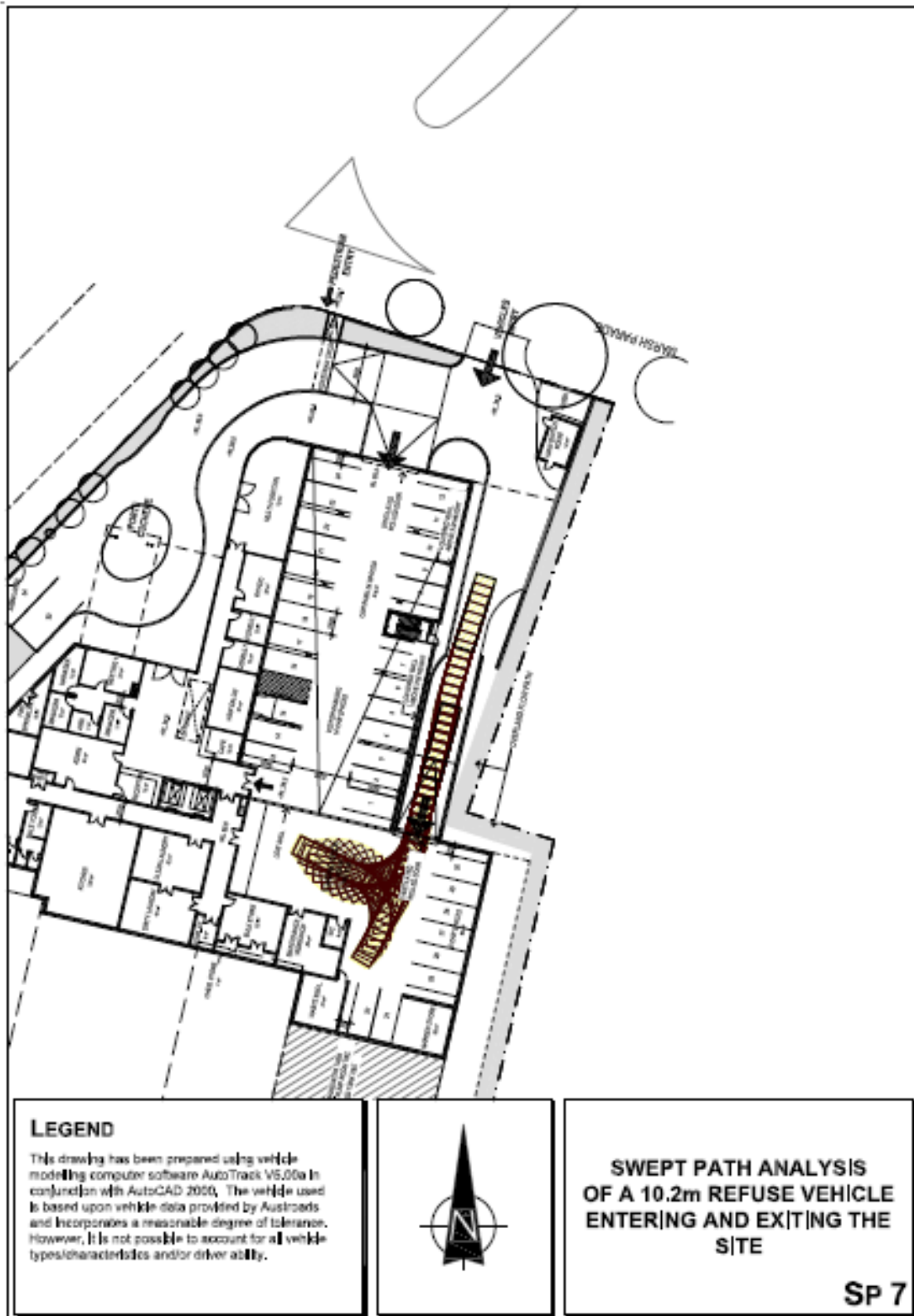


Figure 2 Waste/refuse vehicle movement

2.6 Waste bins standards

All waste bins used at this facility (including waste collection points through the building) are to be aligned with current Australian Standards regarding waste management.

An Australian Standard has recently been developed for mobile bin colours (AS4123.7-2006 mobile waste containers - Part 7: colours, markings and designation requirements). The colour designations for common waste categories are listed in the table below.

Note: Liverpool Council abides by the Australian Standards as noted in this report.

Waste Category	Bin body colour	Bin lid colour
Garbage	Dark green or black	Red
Recycling (commingled or containers)	Dark green or black	Yellow
Paper / Cardboard	Dark green or black	Blue
Organics (including co-collected food and garden organics)	Dark green or black	Lime green

AS4123 consists of several sections covering critical areas of a MGBs design and functionality;

- o Two wheel containers with a capacity up to 400 L for lifting devices' Dimensions and design
- o Four wheel containers with a capacity from 500 L to 1200L with flat lid(s), for trunnion and/or lifting devices' Dimensions and design
- o Four wheel containers with a capacity from 770 L to 1300 L with dome lid(s), for trunnion and/or lifting devices' Dimensions and design
- o Four wheel containers with a capacity from 750 L to 1700 L with flat lid(s), for wide trunnion or BG and/or wide comb lifting devices' Dimensions and design
- o Performance requirements and test methods
- o Health, safety and environment
- o Colors, markings and designation requirements

3. Waste and recycling requirements

UFD has carried out an analysis of the waste and recycling requirements of the CHL Casula facility and note the following calculations.

This assessment of waste volumes is an estimate only and will be influenced by the building management and its employee's attitude to waste disposal and recycling. UFD has based its calculations on a typical seven (7) day operating week. All noted figures will be affected, however, by occupancy rates.

All figures and calculations provided below by UFD are based on building areas and room numbers as shown on architectural drawings provided. Calculations have been made using waste generation rates devised from industry guidelines, previous experience and information listed within Liverpool City Council's web site. All recommendations for waste facilities and equipment are in compliance with Australian Standards, BCA and Liverpool City Council.

3.1 General waste

144 residents @ 80 litres of waste generated per resident per week = **11,520 litres of waste** generated per week. This figure includes an allowance for continence aids.

Based on this amount of waste generated UFD recommends the following;

1. Waste removal is carried out three (3) times per week for both the collection of general waste and continence aids.
2. General waste is held in four (4) x 1100 litre bins.
3. The Private collection contractor waste removalist will remove waste as noted above.

Note: CHL should note that if the foodservice operation generates in excess of 50 litres of seafood, poultry, or meat waste in total per day – and a waste compaction system is not installed, that waste must be collected daily or placed in a conditioned space whilst stored awaiting collection.



Figure 3 UFD recommends colour coded 1100 litre bins for general & recycled waste in the RACF

3.2 Recycling generation

144 residents @ 40 litres of waste generated per week = **5,760 litres of waste** generated per week.

Based on this amount of waste generated UFD recommends the following;

1. Waste removal is carried out two (2) times per week (or as waste accumulation dictates).
2. General waste is held in three (3) x 1100 litre bins.
3. The Private collection contractor waste removalist will remove waste as noted above.

3.3 Liquid waste

UFD recommends a **bunded pallet** be provided in the waste collection area. This will assist in ensuring the spilt waste liquids such as oil, fuels, chemical's etc. do not enter the trade waste system.

UFD recommends an area of **one (1) square meter** be bunded in the waste collection area for this purpose.



Figure 4 UFD Recommends a Bunded Pallet for the storage of contaminated oil and fluids.

3.4 Medical waste collection

144 residents @ 1.3 litres of waste generated per week = **187.2 litres** of Medical waste generated per week.

Based on this amount of waste generated UFD recommends the following;

1. Waste removal is carried out once per week (or as waste accumulation dictates).
2. Medical waste is held in two (2) x 240 litre bins.
3. A private contractor is engaged to remove the waste.
4. At the same time the medical waste bin is removal the waste collector will also go through the facility and collect all full 2 and 5 litre 'sharps' bins – exchanging them with empty bins.

Note: UFD recommends that four (4) x 240 litre bins are maintained on site in the event that waste cannot be collected due to uncontrollable circumstances.

It is recommended that the waste management system be monitored in the initial stages to ensure that sufficient bins have been provided to handle the waste generated. The bin numbers noted are

estimates based on volumes estimated and the amount of times waste is collected during the typical weekly period.

3.5 Hazardous (Cytotoxic) and liquid wastes general comments

Note: Cytotoxic waste volumes are additional to the medical waste bins as detailed in Section 3.4 of this report.

Certain medical and liquid wastes have properties that make them hazardous or potentially harmful to human health or the environment (Cytotoxic waste). Some liquid wastes can also be hazardous.

Cytotoxic Agents; are substances that used in the treatment of malignant and other diseases. They are designed to destroy rapidly growing cancer cells. They have been shown to be mutagenic, carcinogenic and/or teratogenic, either in treatment doses or animal and bacterial assays

If not stored and treated appropriately, some hazardous materials can cause infections or injuries, while others can be highly toxic. As such the correct and safe handling of generated Hazardous waste will be required at all times.

144 residents @ 1.3 litres of waste generated per week = **187.2 litres** of Medical waste generated per week. Based on this amount of waste generated UFD recommends the following;

1. Waste removal is carried out once per week (or as waste accumulation dictates).
2. Medical waste is held in two (2) x 240 litre bins.
3. A private contractor is engaged to remove the waste.
4. At the same time the medical waste bin is removal the waste collector will also go through the facility and collect all full 2 and 5 litre 'sharps' bins – exchanging them with empty bins.

Note: UFD recommends that two (2) x 240 litre bins are maintained on site in the event that waste cannot be collected due to uncontrollable circumstances.

It is recommended that the waste management system be monitored in the initial stages to ensure that sufficient bins have been provided to handle the waste generated. The bin numbers noted are estimates based on volumes estimated and the amount of times waste is collected during the typical weekly period.

3.6 Bin washing

UFD recommends that adequate bin washing space is made available for the washing of 240 litre bins adjacent to the waste management area in the lower floor car park be provided as part of this development. As such, cold and warm water hose cocks will be required in this area along with a waterproof general power outlet.

3.7 Liverpool City Council landfill reduction processes

Much of what we consider 'waste' can be avoided, reused or recycled. Landfill capacity within and around all major cities in Australia is rapidly running out and waste sent to landfill represents resources lost forever. With an ever increasing population and an increase in consumerism, it is important to conserve resources whenever possible. Liverpool City Council has made steps to reduce landfill waste including (but not limited too);

The Management of E-waste

Electronic waste or e-waste is unwanted electronic or electrical equipment. E-waste should be kept out of landfill for a number of reasons:

- O E-waste is one of the fastest growing components of the waste stream in the world, growing three (3) times faster than any other type of waste
- O Australia currently sends 90% of e-waste to landfill e-waste contains valuable metals such as copper, aluminium, gold, silver and tin, all of which are recyclable e-waste also contains materials which are hazardous both to humans and the environment if disposed of incorrectly using recycled materials for new products produces up to 80% less carbon emissions than processing virgin materials.

Electronic waste collection points

Televisions, computers and computer accessories can be recycled free of charge all year round at Electronic Waste Recycling Centres:

Location	Daily opening hours
99 Rose Street, Liverpool	8.00am to 3.00pm
24-28 Childs Road, Chipping Norton	8.00am to 5.00pm
Lot 9 Elizabeth Drive, Kemps Creek	6.00am to 5.00pm
Cambridge Avenue, Glenfield	6.30am to 4.20pm

No other electronic waste (such as DVD players, game consoles, television speakers) is accepted for recycling at these locations.

4. Waste removal vehicle requirements

For the Casula site, a Private Contractor waste collection vehicle(s) will be used to remove waste. The associated waste collection vehicle may be side loading, rear end loading or front end loading. The size of the vehicle will vary according to the collection service provided. With UFD recommending a series of 1100 litre bins be utilised the diagram below indicates the type and size of vehicle that may be required.



Figure 5 Indicative waste removal vehicle details.

Turning circle considerations must also include allowances for driver steering error and overhangs. The steering error allowance must be at least 0.6 metres (absolute minimum) on both sides of the theoretical wheel path and 1m as a desirable minimum. The vehicle will require a 15m turning circle and will nominally 7 meters in length.

Access and turning provisions

Internal Circulation; The proposed internal circulation arrangements will accord with AS2890.1 & 6 and will ensure satisfactory access, manoeuvring and turning within the parking area. Details of the turning path assessment for the parking area and porte cochere are provided in Appendix B of the Transportation, Traffic and Design Consultants report.

Servicing; Refuse removal and deliveries (up to an 11 meter rigid vehicle) etc. will be undertaken using the proposed loading dock area while small service vehicles (service personnel, cleaners etc.) will also be able to park in. Details of turning path assessment for vehicles requiring access to the facility and heavy vehicles using the loading dock are provided in Appendix B of the Transportation, Traffic and Design Consultants report.

The design aspect of waste removal must be taken into account by the architect and should include the following:

- o The presence of parked cars on access roads;
- o Trucks must only be expected to make a three-point turn to complete a U-turn.

5. Waste minimization recommendations – Waste area

All business' are encouraged to reduce/minimise its volume of waste. Catholic Healthcare Limited "Casula" is no different.

To this end UFD recommends the following practices and processes be initiated as part of the facilities waste management plan;

- o Undertake regular audits of rubbish collected in cleaners bins noting what can be placed in recycled bins instead of general waste.
- o Promote a positive recycling message throughout the RACF.
- o Use the "stripping station" to strip plastic and cardboard from product entering the building.

6. Conclusion

What you just read is a set of comments based on the following;

- o AS1668.2-2012 Mechanical ventilation.
- o Local Health Code Regulations (Liverpool City Council).
- o Section 72 of the Environmental Planning and Assessment Act 1979, and Part 3 of Environmental Planning and Assessment Regulations.
- o Australian Standard AS 2890.2 – 2002
- o AS4123.7-2006 mobile waste containers - Part 7: colours, markings and designation requirements

Additionally, all material provided by UFD has been done so on the basis of being independent and representing CHL's best interest at all times. Thought and consideration has been provided on how to reduce operational costs, consolidate labour costs and increase Safe work practices across the facility.

By CHL moving ahead with the recommendations as noted in this report, UFD note that they are rising to the challenge of creating an efficient and sustainable Waste management operation as part this new facility that will cater to the Waste management needs of the facility in the years to come.