

# Waste Management Plan

Como Baptist Church (East), 469 &  
471 Canning Hwy

CW1115300



Prepared for  
Baptist Development Australia Pty Ltd

5 March 2021

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## Document Information

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Our report is based on information made available by the client. The validity and comprehensiveness of supplied information has not been independently verified and, for the purposes of this report, it is assumed that the information provided to Cardno is both complete and accurate. Whilst, to the best of our knowledge, the information contained in this report is accurate at the date of issue, changes may occur to the site conditions, the site context or the applicable planning framework. This report should not be used after any such changes without consulting the provider of the report or a suitably qualified person.

## Table of Contents

1	Introduction	1
1.1	Site Description	1
1.2	Waste and Recycling Collection Services	2
1.3	Refuse Storage Room	2
2	Waste Generation and Management	4
2.1	General Waste and Recycling Streams	4
2.2	Waste and Recycling Estimate	4
2.3	Bin Enclosure Layout	6
2.4	Design Consideration	6
2.5	Transfer of Waste and Recycling	6
2.6	Collection of Waste and Recycling	6
3	Waste Reduction and Management Strategy	10
3.1	Provision of Information	10
3.2	Engagement	10
3.3	Monitoring and Review	10
4	Conclusion	12
5	References	13

## Appendices

**Appendix A** Architectural Plans

**Appendix B** Waste Calculations

## Tables

Table 1-1	Proposed Development	2
Table 2-1	Weekly Waste Generation Rates for the Development	4
Table 2-2	Bin Requirements for Enclosure of Proposed Site	5

## Figures

Figure 1-1	Site Location	1
Figure 2-1	Bin Store	5
Figure 2-2	Canning Bridge Activity Centre Plan Land Use	7
Figure 2-3	Waste Collection Point	7
Figure 2-4	Access and pathway	8
Figure 2-5	Swept Path for MRV	9
Figure 3-1	Waste Hierarchy	10

# 1 Introduction

Cardno has been commissioned by Baptist Development Australia Pty Ltd Group to prepare a Waste Management Plan (WMP) in support of a proposed mixed-use development (the Development) located at 469 & 471 Canning Hwy, Como, City of South Perth (the Development). This development is part of a two-stage development proposal i.e. Stage 1 -Como Baptist Church East and Stage 2- Como Baptist Church West. Separate Waste Management Plans have been prepared for each of the staged developments. This report outlines the waste management plan for the Stage 1 East Development.

The scope of this WMP is limited to the estimation of general waste and recycling volumes generated by the Development and includes recommendations for the appropriate collection, storage, handling and transportation of waste and recycling, in accordance with the requirements outlined in the City of South Perth's Waste Guidelines for New Developments.

Estimations of generated volumes of liquid and bulk rubbish are not provided. Specialist contractors will need to be commissioned by the Development operators for the collection and disposal of liquid waste and bulk rubbish, as necessary.

## 1.1 Site Description

The proposed Development is located at 469 & 471 Canning Hwy, Como, in the City of South Perth as illustrated in **Figure 1-1**.

Figure 1-1 Site Location



Plans for the proposed development outlines a ten-storey building with the majority of its land use dedicated for residential and commercial (café and childcare) land use on the ground floor. The anticipated usages generating waste from the proposed Development is tabulated in **Table 1-1**.

The proposed Development will front onto Robert Street on the western side and is surrounded by other residential properties. The bin enclosure for the development is located on the ground floor of the proposed site and is accessible from Roberts Street. Architectural plans outlining the usage of floor space are provided in **Appendix A**.

Table 1-1 Proposed Development

Type of Premises	Quantity
1 Bedroom (unit)	37 dwellings
2 Bedroom (unit)	43 dwellings
3+ Bedroom (unit)	7 dwellings
Café	120 sqm
Childcare	450 sqm

## 1.2 Waste and Recycling Collection Services

The Development will use the waste collection services provided by the City of South Perth for the collection of general waste twice a week and recycling waste once a week for the residential component. Similarly, the collection of general waste three times a week and recycling waste twice a week is proposed for the commercial tenancies.

Waste collections will be undertaken on-site and organised to occur during off-peak hours to minimise disruption to traffic operations as well as minimise any impacts to residents and tenants.

## 1.3 Refuse Storage Room

The Mobile Garbage Bin (MGB) storage for the Development will be in separate refuse rooms located on the ground floor. Two separate storage rooms are proposed for the storage of residential and commercial bins.

### 1.3.1 Construction Considerations

The refuse rooms for the Development will be designed with the following considerations:

- Floors to be even and flat for safe storage of bins;
- Access doors will be self-closing to prevent access to vermin;
- Doors to bin storage area should be wide enough for bins to fit through;
- Adequate aisle width for easy manoeuvring of bins;
- No double stacking of rows of bins;
- All wall joins will be sealed to a height of 150 mm for ease of washing;
- Walls are to be painted with washable paint;
- Washing facilities with hot and cold taps located at a minimum height of 1.5 m (and no higher than 1.7 m) for washing of bins, equipment and refuse room floors;
- Drainage of waste water from washing facilities will drain to main sewers;
- All electrical outlets will be installed at a height of 1.6 m for ease of use and safety;
- Light switches for the refuse rooms must be installed at a height of 1.6 m to prevent obstruction by bins and equipment;
- Sufficient lighting of the refuse rooms should be provided by motion detected automatic artificial lighting in order to facilitate access to the refuse rooms;
- Adequate ventilation will be provided to the refuse rooms to ensure sufficient turnover of the air mass to prevent odour nuisance;
- Appropriate signage to be provided;

- To be designed to not permit stormwater to enter into the drain;
- Bins not to be visible from the property boundary or areas trafficable by the public; and
- Bins are reasonably secured from theft and vandalism.



## 2 Waste Generation and Management

In order to ensure that the waste from the Development is properly managed, it was necessary to estimate the volume of waste that is likely to be generated on the premises. The City of South Perth's Waste Guidelines for new developments provided the generation rates for multiple residential dwellings and retail/commercial developments. Using these generation rates, a broad estimation of daily waste generation for the development has been calculated.

### 2.1 General Waste and Recycling Streams

Waste and recyclables will be sorted on-site and as close to source as possible. Sorting will rely on appropriate education of tenants and staff in addition to adequate signage for bins located in the refuse rooms. Waste and recycling will be based on the following streams:

- General Waste.
- Co-mingled Recycling, which includes clean aluminium foil and trays, glass bottles and jars, long-life milk and juice cartons, cardboard, plastic containers, tins and cans.

#### 2.1.1 Other Streams

Storage, handling and collection of liquid wastes are not covered in this WMP. The Development operator will need to source and enter into an agreement with an appropriate registered and accredited waste collection contractor for these wastes.

Storage, handling and collection of bulk wastes, such as mattresses and other hard rubbish and electronic waste such as old batteries are not covered in this WMP. The City provides services to remove hard waste from residential properties once a year and green waste twice a year.

### 2.2 Waste and Recycling Estimate

A summary of the estimated weekly waste generated for each waste stream by usage is provided in **Table 2-1**. Waste estimates were obtained by way of the calculations outlined in **Appendix B**.

Table 2-1 Weekly Waste Generation Rates for the Development

Type of Premises	Quantity	General Waste (L)	Co-mingled Recycling (L)
1 Bedroom (unit)	37 dwellings	80 L/100m <sup>2</sup> /day	80 L/100m <sup>2</sup> /day
2 Bedroom (unit)	43 dwellings	160 L/100m <sup>2</sup> /day	120 L/100m <sup>2</sup> /day
3+ Bedroom (unit)	7 dwellings	240 L/100m <sup>2</sup> /day	120 L/100m <sup>2</sup> /day
Café	120 sqm	300 L/100m <sup>2</sup> /day	200 L/100m <sup>2</sup> /day
Childcare	450 sqm	250 L/100m <sup>2</sup> /day	120 L/100m <sup>2</sup> /day

The waste volumes presented are estimates only and are representative of the design drawings of the Development provided in March 2021.

#### 2.2.2 Bin Requirement

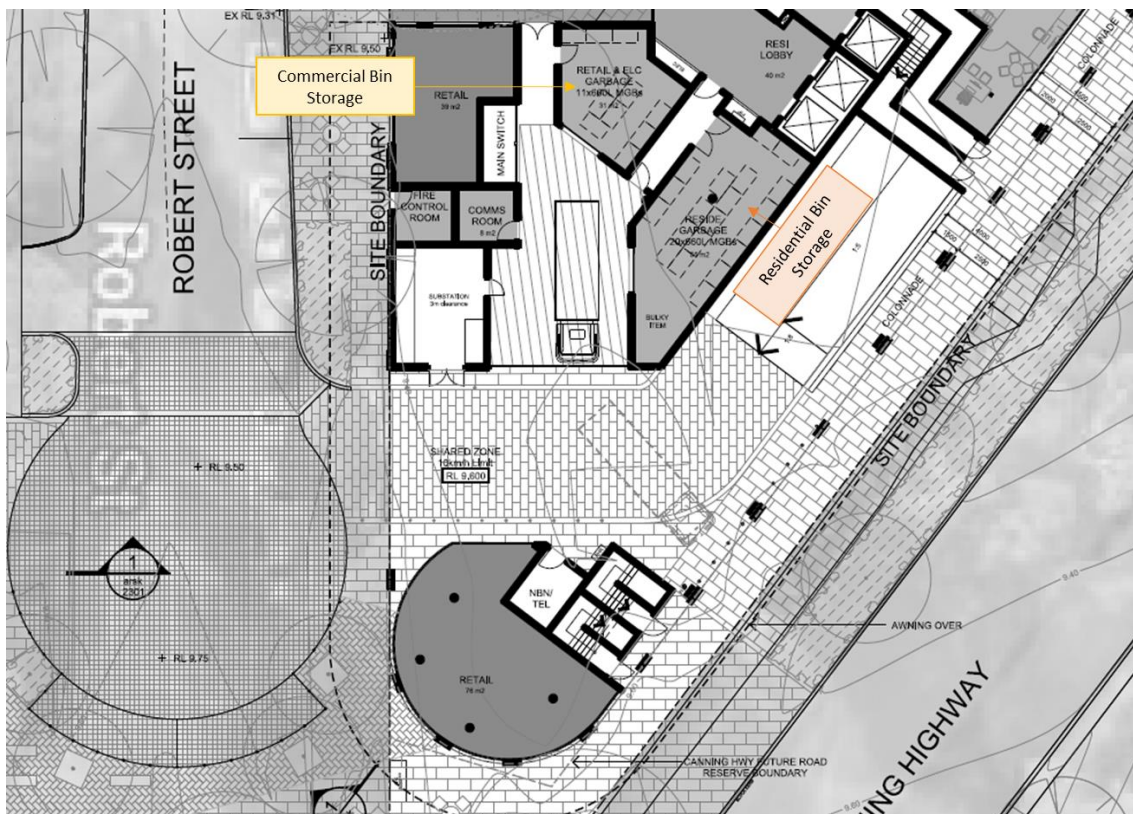
A breakdown of the anticipated MGB requirements and associated storage area minimum requirements are provided below in **Table 2-2**. Please note the estimates are indicative of the area required for the storage of bins exclusively, and does not allow for the movement of bins or access to the bin enclosure. Bin sizes used are as recommended by the City of South Perth.

Table 2-2 Bin Requirements for Enclosure of Proposed Site

Residential				
Floor Item	Depth (mm)	Width (mm)	Quantity	Area Required (m <sup>2</sup> )
Residential				
660 L MGBs for Wastes	850	1370	10	19.65
660 L Co-mingled Recycling Bins	850	1370	10	12.78
<b>Total Area Required</b>				32.43
<b>Grand Total Area Required (Residential)</b>				32.43
<b>No of Bins for Residential</b>				<b>20</b>
Commercial				
Floor Item	Depth (mm)	Width (mm)	Quantity	Area Required (m <sup>2</sup> )
Café				
660 L MGBs for Wastes	850	1370	2	4.91
660 L Co-mingled Recycling Bins	850	1370	2	3.93
<b>Total Area Required</b>				8.84
Childcare				
660 L MGBs for Wastes	850	1370	4	12.78
660 L Co-mingled Recycling Bins	850	1370	3	6.88
<b>Total Area Required</b>				19.66
<b>Total Area Required for Commercial</b>				28.50
<b>No of Bins for Commercial</b>				<b>11</b>

A layout of the anticipated bin enclosure is illustrated in **Figure 2-1**.

Figure 2-1 Bin Store



(Source: DEM)



## 2.3 Bin Enclosure Layout

MGBs will be stored in an allocated enclosure within the Ground Floor of the Development and will be easily and safely accessible from the interior of the development. The waste bins will generally be stored directly abutting the walls of the enclosures.

## 2.4 Design Consideration

A number of problems can arise from inadequate consideration of waste management in developments. Some of these problems include noise, odour, hygiene issues, vermin, negative impacts on the health, safety, environment and security. To avoid these issues, it is vital to consider waste management in the design and planning of multiple dwelling developments.

### 2.4.1 Odour

The enclosure is located away from public areas which will prevent odour nuisance.

### 2.4.2 Noise

The bin enclosure is located away from public areas to limit noise that may otherwise disturb surrounding residents when materials are placed in the bins.

### 2.4.3 Vermin

The use of lidded MGBs will eliminate access by vermin. The use of bait stations will also be considered by the Development operator if required.

### 2.4.4 Washing of Bins and Enclosure

The Strata/Facility Manager will be responsible for the organisation of regular washing of bins and for maintenance of the storage area. The area will have graded floors that drain to sewer which will allow for the cleaning of the store and bins.

### 2.4.5 Aesthetics

The bin enclosure has been designed with the Development and as such will be consistent with the overall aesthetics, avoiding the placement of bins along the external faces of the building.

### 2.4.6 Protection from Vandalism

The bin enclosure will be closed off from public access and will use gates and/or doors to promote a sense of ownership and community in order to deter vandalism and anti-social behaviour. No bins will remain or be stored outside of the enclosure

## 2.5 Transfer of Waste and Recycling

### 2.5.1.1 Waste Transfer

Residents and tenants of commercial developments will transfer to the dedicated refuse stores located on the site as required. These wastes will be emptied into their respective bins within the associated bin stores.

### 2.5.1.2 Co-mingled Recycling Transfer

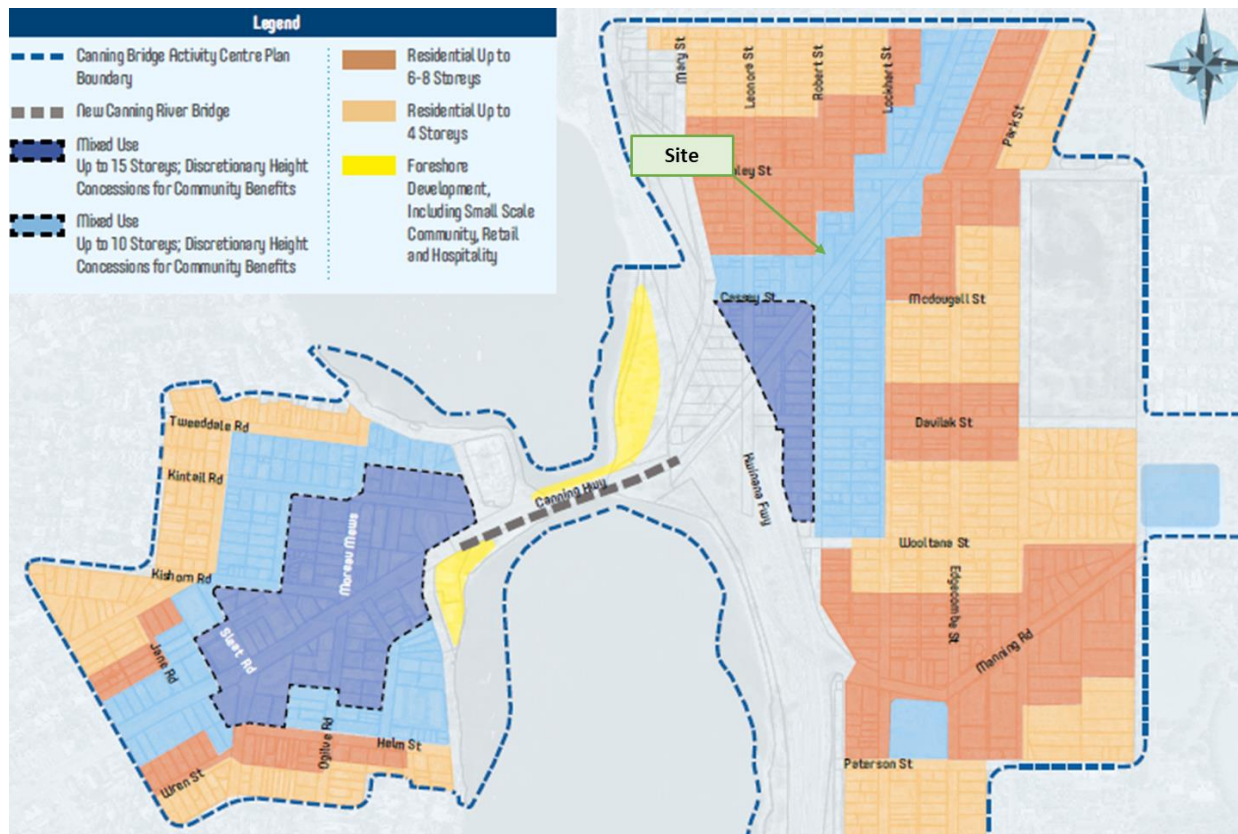
Residents and tenants of commercial developments will transfer waste to the dedicated refuse stores located on the site as required. These wastes will be emptied into their respective bins within the associated bin stores.

## 2.6 Collection of Waste and Recycling

The Site falls under the M10 zone within the Canning Bridge Activity Centre Plan as indicated in **Figure 2-2**. This document states that:

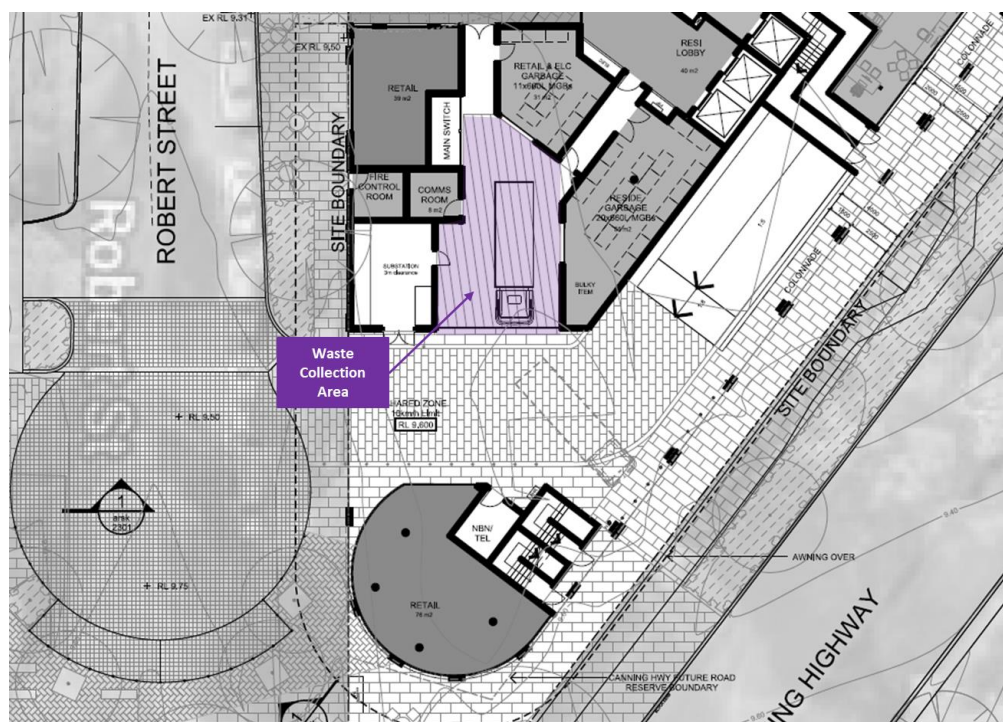
“Developments within the M15, M10 and H8 Zones shall provide for all management of waste wholly within the development site, including the ability for service vehicles to circulate within the development. No on-street waste collection areas are permitted within the M15, M10 and H8 Zones.”

Figure 2-2 Canning Bridge Activity Centre Plan Land Use



The City of South Perth will service the proposed development and provide 16x 660L bins for general waste and 15 x 660L bins for recyclable waste for both the residential and commercial tenancies. Waste collection is proposed to be undertaken on-site at the dedicated collection area illustrated in **Figure 2-3**. The Strata/Facility Manager or staff will provide access to the proposed residential and commercial bin enclosures. The City of South Perth staff will ferry loaded 660L MGBs from the bin enclosure to the waste truck for disposal on the days of collection and return the empty MGBs back to the respective bin enclosures.

Figure 2-3 Waste Collection Point

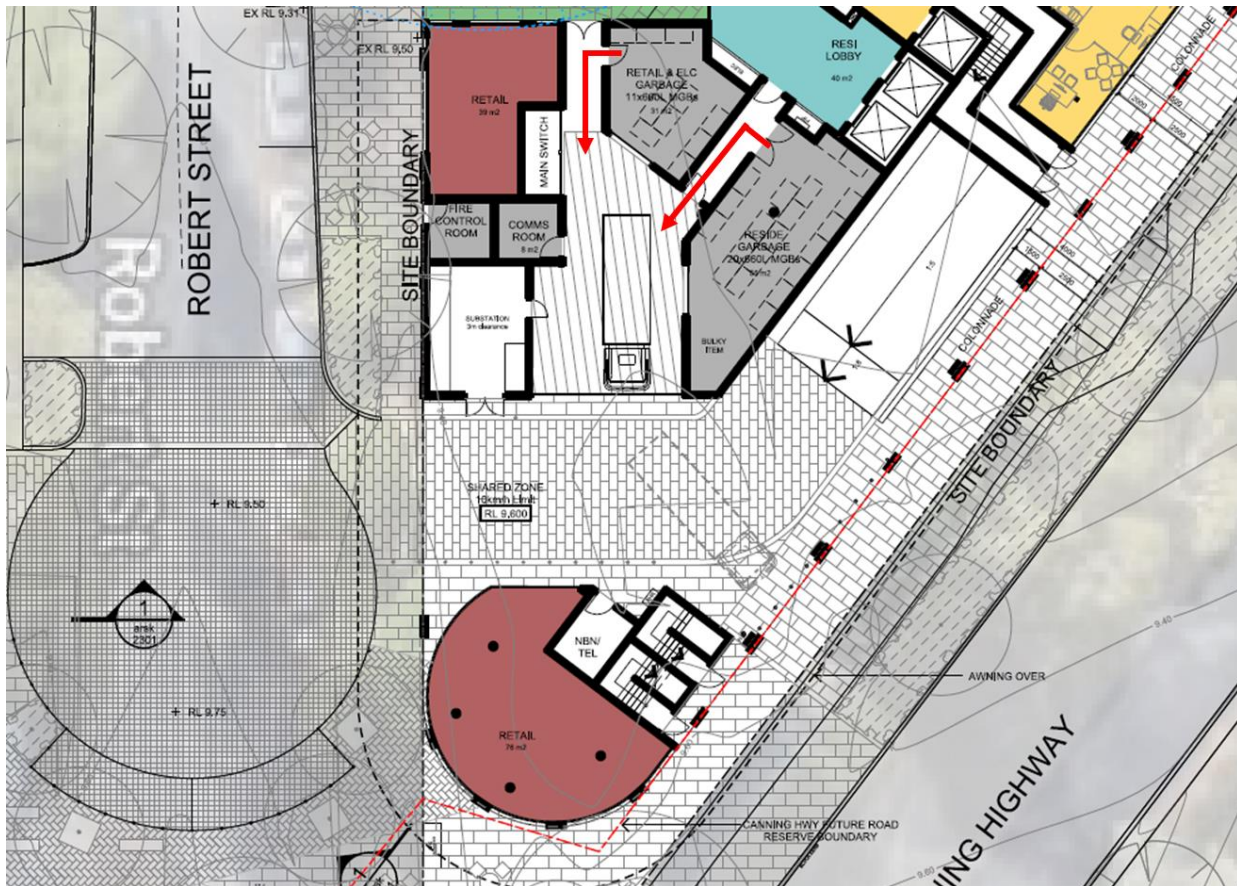


(Source: DEM)



**Figure 2-4** provides details of the anticipated access and pathways for transporting of bins by staff to and from the waste truck on collection days.

Figure 2-4 Access and pathway



## 2.6.2 Waste Collection Frequencies

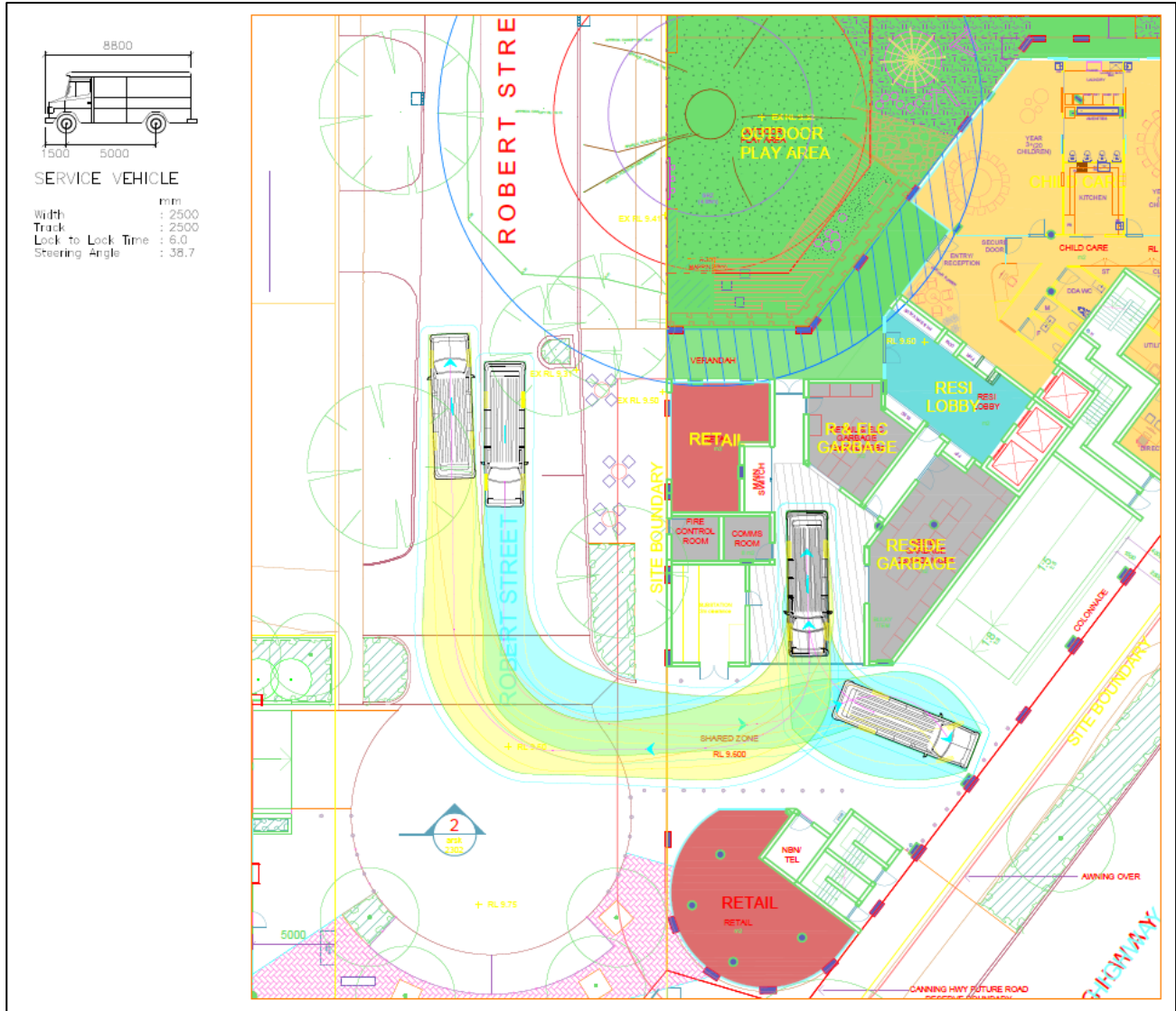
It is anticipated that the residential and commercial waste collection frequencies will be as follows:

- > General waste for the residential is to be collected twice a week by the City of South Perth;
- > Recycle waste for the residential is to be collected once a week by the City of South Perth;
- > General waste for the commercial (café and childcare) is to be collected three times a week by the City of South Perth; and
- > Recycle waste for the commercial (café and childcare) is to be collected twice a week by the City of South Perth.

### 2.6.3 Provision for Service Vehicles

A swept path analysis was undertaken for a Medium Rigid Vehicle (MRV) as shown in **Figure 2-5**. The waste truck is expected to be able to enter into the site and adequately reverse into the waste collection area, collect the waste and exit in a forward direction.

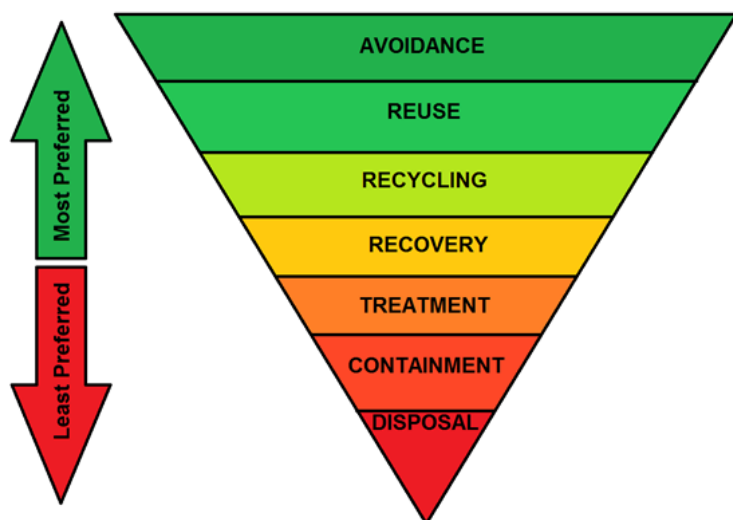
Figure 2-5 Swept Path for MRV



### 3 Waste Reduction and Management Strategy

This waste management plan has been developed with the strategic approach of reducing waste through best practices and education of tenants and staff. Best practices for waste minimisation will optimise the Development's use of the waste minimisation hierarchy, which seeks to encourage sustainable options for waste. The waste hierarchy is demonstrated below.

Figure 3-1 Waste Hierarchy



#### 3.1 Provision of Information

Information dissemination is essential in order to communicate well the best practices of waste management. Suitable types of information which can be provided includes:

- Online information;
- Marketing materials such as posters and leaflets demonstrating procedures of waste segregation and waste collection days; and
- Sufficient labelling of bins, signage of storage areas and equipment to reinforce waste separation.

However, information on its own is not enough and it must be paired with initiatives to be effective.

#### 3.2 Engagement

A regular engagement between all the stakeholders of the development should take place in order to remind the residents, visitors and staff the proper and best practices of waste management. The engagement should include

- Demonstration of waste management systems pertinent to an individual's role;
- An explanation of the benefits of waste separation and recycling; and
- Training on all pertinent equipment related to waste management;

#### 3.3 Monitoring and Review

The Strata/Facility Manager who will oversee the implementation of the Waste Management Plan, should continually monitor and review the waste management plan activities.

The Strata/Facility Manager will be responsible for the following:

- Monitoring and maintenance of bins and the Bin Storage Area;



- Monitor bulk wastes accumulation;
- Assist with ferrying of bins to and from the Bin Storage area and Bin Presentation Area on collection days;
- Monitor residents and tenant's behaviour and identify requirements for further waste segregation and management education
- Engage with new residents and tenant's regarding best practices in waste management
- Engage with the local government to ensure efficient and effective waste service to the development.

In the event that waste generation rates for the Development change, a waste audit may be required by the City or other regulatory bodies. Similarly, should a change to the waste regulations be implemented by the City or other regulatory bodies, a waste audit may be required in addition to further waste stream separation.

## 4 Conclusion

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This Waste Management Plan demonstrates that the proposed development provides a sufficiently sized Bin Storage Area for storage of general and recyclable waste based on the estimated waste generation and a suitable configuration of bins.

The collection of general and recyclable waste is achieved using:

- > 10x660L general waste bins for residential, collection twice each week;
- > 10x660L recycling waste bins for residential, collection once each week;
- > 6x660L general waste bins for café and childcare use, collection three times each week; and
- > 5x660L recycling bins for café and childcare use, collection twice each week

The waste collection vehicle will service the refuse and recycling bins on site. The Strata/Facility Manager or staff will provide access to the proposed residential and commercial bin enclosures. The City of South Perth staff will ferry loaded 660L MGBs from the bin enclosure to the waste truck for disposal on the days of collection and return the empty MGBs back to the respective bin enclosures.

## 5 References

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*City of South Perth (n.d.), Waste Guidelines for New Developments City of South Perth Version 4, South Perth*

*WALGA (n.d.), Multiple Dwelling Waste Management Plan Guidelines: A Resource for Western Australian Local Government and Developers, Perth.*

*WALGA (n.d.), Commercial and Industrial Waste Management Guidelines, Perth.*

Como Baptist Church (East), 469 & 471  
Canning Hwy

## APPENDIX

# A

## ARCHITECTURAL PLANS





DA Submission

Como Baptist Church, 109, 111&113 Robert Street and 469&471 Canning Highway, WA

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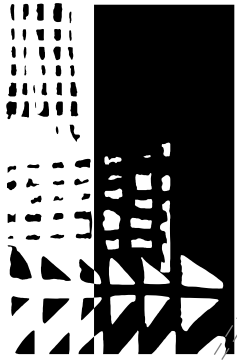
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Master Plan - Combined Sites

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ar-0102

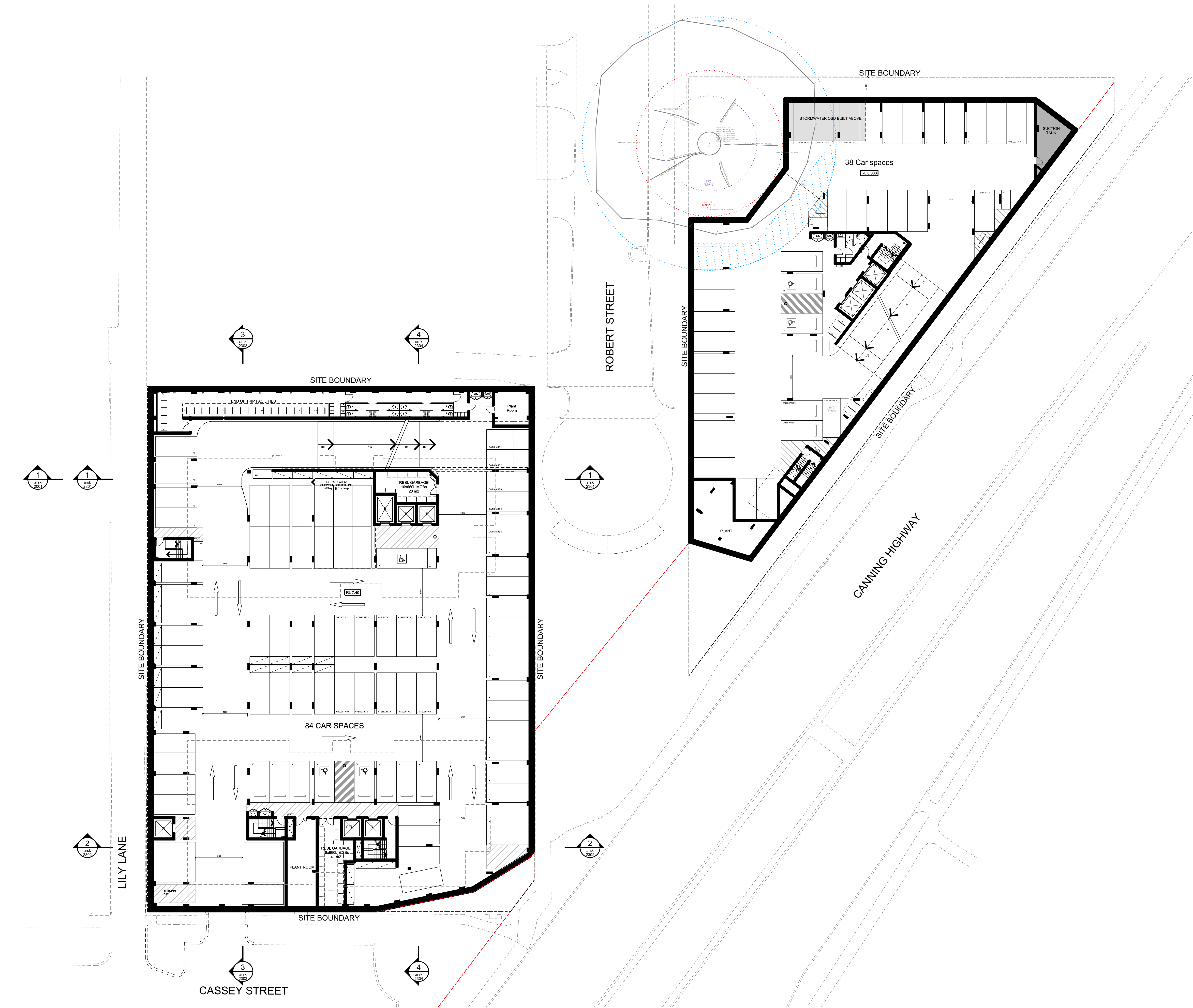
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DA Submission

Como Baptist Church, 109, 111&113 Robert Street and 469&471 Canning Highway, WA

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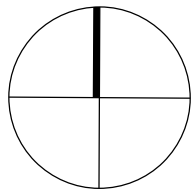
Basement 1 Plan  
Master Plan - Combined Sites

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03/03/21

scale  
1:250  
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ar-0101

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4524-00  
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Como Baptist Church (East), 469 & 471  
Canning Hwy

## APPENDIX

# B

## WASTE CALCULATIONS

## Waste generation rate as per City of South Perth waste management guidelines

Weekly waste estimates are based on the waste and recycling generation rates provided by the City of South Perth which is outlined below.

### General Waste and Recycling Generation Rates

Type of Premises	General Waste (L)	Co-mingled Recycling (L)
1 Bedroom (unit)	80L/100m2/day	80L/100m2/day
2 Bedroom (unit)	160L/100m2/day	120L/100m2/day
3+ Bedroom (unit)	240L/100m2/day	120L/100m2/day
Café	300L/100m2/day	200L/100m2/day
Childcare	250L/100m2/day	120L/100m2/day

The following equation was used to calculate the anticipated weekly waste generation for residential waste in each building:

$$\text{Total Amount of Waste Type} = (\text{Number of Units} \times \text{Waste Rate}) \times 7 \text{ days}$$

The total number of bins required for collection of residential general waste twice a week was calculated using the following equation:

$$\text{Total Number of Bins Required} = \frac{\text{Total Weekly Waste Generated}}{660 \text{ L}} \times \frac{1}{2}$$

The total number of recycling bins required for collection of residential waste once a week was calculated using the following equation:

$$\text{Total Number of Bins Required} = \frac{\text{Total Weekly Waste Generated}}{660 \text{ L}}$$

The following equation was used to calculate the anticipated weekly waste generation for commercial waste for the proposed development:

$$\text{Total Amount of Waste Type} = (\text{Floor Area} \times \text{Waste Rate}) \times \text{days per week}$$

The total number of bins required for the collection of general waste for the proposed commercial development three times a week was calculated using the following equation:

$$\text{Total Number of Bins Required} = \frac{\text{Total Weekly Waste Generated}^1}{660 \text{ L}} \times \frac{1}{3}$$

The total number of bins required for collection of recycling waste for the proposed commercial development twice a week was calculated using the following equation:

$$\text{Total Number of Bins Required} = \frac{\text{Total Weekly Waste Generated}^2}{660 \text{ L}} \times \frac{1}{2}$$

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Como Baptist Church - 109, 111 &  
113 Robert St

CW1115300



Prepared for  
Baptist Development Australia Pty Ltd

9 March 2021



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Desmond Ho  
Senior Consultant

Date Approved 9/03/2021

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Figure 2-3	Waste Collection Point	8
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Figure 2-6	Swept Path at northern end of Lily Lane	10

Figure 3-1 Waste Hierarchy

11

# 1 Introduction

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Estimations of generated volumes of liquid and bulk rubbish are not provided. Specialist contractors will need to be commissioned by the Development operators for the collection and disposal of liquid waste and bulk rubbish, as necessary.

## 1.1 Site Description

The proposed Development is located at 109, 111&113 Robert Street, Como, in the City of South Perth as illustrated in **Figure 1-1**.

Figure 1-1 Site Location



Plans for the proposed development outlines a fifteen-storey building with the majority of its land use dedicated for residential and commercial (retail, office and Church) land use on the ground floor. The anticipated usages generating waste from the proposed Development is tabulated in **Table 1-1**.

The proposed Development will front onto Robert Street on the eastern side and is surrounded by other residential properties. The bin enclosure for the development is located on the ground floor and is accessible from Lily Lane. Architectural plans outlining the usage of floor space are provided in **Appendix A**.

Table 1-1 Proposed Development

Type of Premises	Quantity
1 Bedroom (unit)	29 dwellings
2 Bedroom (unit)	95 dwellings
3+ Bedroom (unit)	13 dwellings
Office	530 sqm
Church	1505 sqm
Retail	310 sqm

## 1.2 Waste and Recycling Collection Services

The Development will use the waste collection services provided by the City of South Perth for the collection of general and recycling waste twice a week for the residential component. Similarly, the collection of general waste three times a week and recycling waste twice a week is proposed for the commercial tenancies.

Waste collection will be undertaken in a dedicated area to be provided on Lily Lane adjacent to the proposed bin enclosure for this development. It is anticipated that the waste collection will occur during off-peak hours to minimise disruption to traffic operations as well as minimise any impacts to residents and tenants.

## 1.3 Refuse Storage Room

The Mobile Garbage Bin (MGB) storage for the Development will be in a refuse room located on the ground floor. Two separate storage rooms are proposed for the storage of residential and commercial bins.

### 1.3.1 Construction Considerations

The refuse rooms for the Development will be designed with the following considerations:

- Floors to be even and flat for safe storage of bins;
- Access doors will be self-closing to prevent access to vermin;
- Doors to bin storage area should be wide enough for bins to fit through;
- Adequate aisle width for easy manoeuvring of bins;
- No double stacking of rows of bins;
- All wall joins will be sealed to a height of 150 mm for ease of washing;
- Walls are to be painted with washable paint;
- Washing facilities with hot and cold taps located at a minimum height of 1.5 m (and no higher than 1.7 m) for washing of bins, equipment and refuse room floors;
- Drainage of waste water from washing facilities will drain to main sewers;
- All electrical outlets will be installed at a height of 1.6 m for ease of use and safety;
- Light switches for the refuse rooms must be installed at a height of 1.6 m to prevent obstruction by bins and equipment;
- Sufficient lighting of the refuse rooms should be provided by motion detected automatic artificial lighting in order to facilitate access to the refuse rooms;
- Adequate ventilation will be provided to the refuse rooms to ensure sufficient turnover of the air mass to prevent odour nuisance;



- Appropriate signage to be provided;
- To be designed to not permit stormwater to enter into the drain;
- Bins not to be visible from the property boundary or areas trafficable by the public; and
- Bins are reasonably secured from theft and vandalism.

## 2 Waste Generation and Management

In order to ensure that the waste from the Development is properly managed, it was necessary to estimate the volume of waste that is likely to be generated on the premises. City of South Perth's Waste Guidelines for new developments provided the generation rates for multiple residential dwellings and retail/commercial developments. Using these generation rates, a broad estimation of daily waste generation for the development has been calculated.

### 2.1 Waste and Recycling Streams

Waste and recyclables will be sorted on-site and as close to source as possible. Sorting will rely on appropriate education of tenants and staff in addition to adequate signage for bins located in the refuse rooms. Waste and recycling will be based on the following streams:

- General Waste.
- Co-mingled Recycling, which includes clean aluminium foil and trays, glass bottles and jars, long-life milk and juice cartons, cardboard, plastic containers, tins and cans.

#### 2.1.1 Other Streams

Storage, handling and collection of liquid wastes are not covered in this WMP. The Development operator will need to source and enter into an agreement with an appropriate registered and accredited waste collection contractor for these wastes.

Storage, handling and collection of bulk wastes, such as mattresses and other hard rubbish and electronic waste such as old batteries, are not covered in this WMP. The City provides services to remove hard waste from residential properties once a year and green waste twice a year.

### 2.2 Waste and Recycling Estimate

A summary of the estimated weekly waste generated for each waste stream by usage is provided in **Table 2-1**. Waste estimates were obtained by way of the calculations outlined in **Appendix B**.

It should be noted that the both the WALGA and City of South Perth Waste Management Guidelines do not provide a waste generation rate for the Church use. The City of South Perth recommended that the rates indicated in the Guidelines for Preparing A Waste Management Plan by the City of Melbourne should be used.

Table 2-1 Weekly Waste Generation Rates for the Development

Type of Premises	Quantity	General Waste (L)	Co-mingled Recycling (L)
1 Bedroom (unit)	29 dwellings	80L/100m <sup>2</sup> /day	80L/100m <sup>2</sup> /day
2 Bedroom (unit)	95 dwellings	160L/100m <sup>2</sup> /day	120L/100m <sup>2</sup> /day
3+ Bedroom (unit)	13 dwellings	240L/100m <sup>2</sup> /day	120L/100m <sup>2</sup> /day
Office	530 sqm	10L/100m <sup>2</sup> /day	10L/100m <sup>2</sup> /day
Church	1505 sqm	50L/100m <sup>2</sup> /day	10L/100m <sup>2</sup> /day
Retail	310 sqm	660L/100m <sup>2</sup> /day	200L/100m <sup>2</sup> /day

The waste volumes presented are estimates only and are representative of the design drawings of the Development provided in March 2021.

#### 2.2.2 Bin Requirement

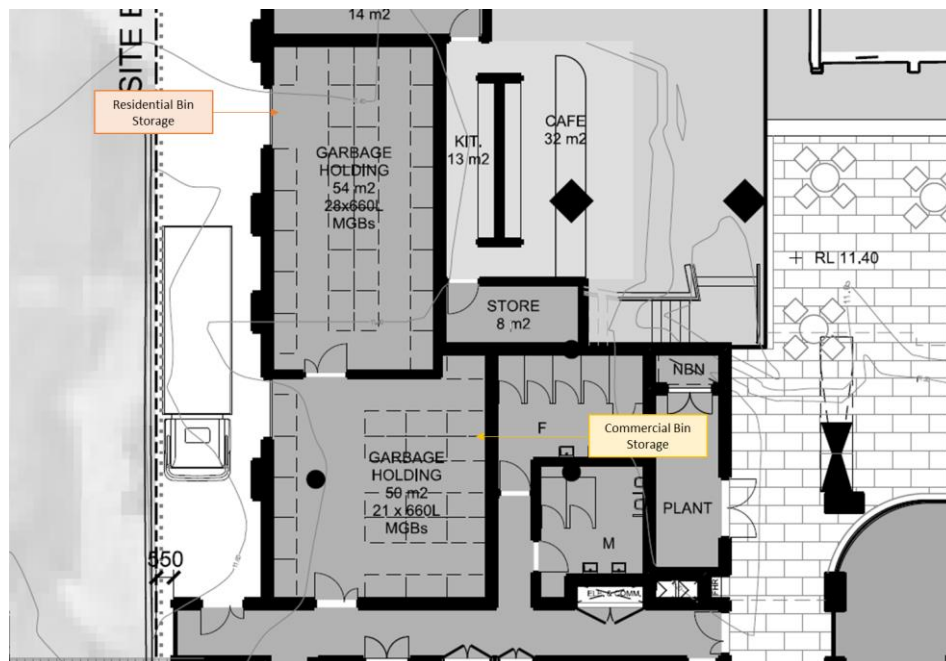
A breakdown of the anticipated MGB requirements and associated storage area minimum requirements are provided below in **Table 2-2**. Please note the estimates are indicative of the area required for the storage of bins exclusively, and does not allow for the movement of bins or access to the bin enclosure. Bin sizes used are as recommended by the City of South Perth.

Table 2-2 Bin Requirements for Enclosure of Proposed Site

Residential				
Floor Item	Depth (mm)	Width (mm)	Quantity	Area Required (m <sup>2</sup> )
Residential				
660 L MGBs for Wastes	850	1370	17	19.80
660 L Co-mingled Recycling Bins	850	1370	11	12.81
<b>Total Area Required</b>				32.61
<b>No of Bins for Residential</b>				<b>28</b>
Commercial				
Floor Item	Depth (mm)	Width (mm)	Quantity	Area Required (m <sup>2</sup> )
Office				
660 L MGBs for Wastes	850	1370	1	1.16
660 L Co-mingled Recycling Bins	850	1370	1	1.16
<b>Total Area Required</b>				2.33
Church				
660 L MGBs for Wastes	850	1370	3	3.49
660 L Co-mingled Recycling Bins	850	1370	1	1.16
<b>Total Area Required</b>				4.66
Retail				
660 L MGBs for Wastes	850	1370	8	9.32
660 L Co-mingled Recycling Bins	850	1370	4	4.66
<b>Total Area Required</b>				13.97
<b>Total Area Required for Commercial</b>				20.96
<b>No of Bins for Commercial</b>				<b>18</b>

A layout of the anticipated bin enclosure is illustrated in **Figure 2-1**.

Figure 2-1 Bin Store



(Source: DEM)

## 2.3 Bin Enclosure Layout

MGBs will be stored in an allocated enclosure within the Ground Floor of the Development and will be easily and safely accessible from the interior of the development. The waste bins will be stored directly abutting the walls of the enclosure.

## 2.4 Design Consideration

A number of problems can arise from inadequate consideration of waste management in developments. Some of these problems include noise, odour, hygiene issues, vermin, negative impacts on the health, safety, environment and security. To avoid these issues, it is vital to consider waste management in the design and planning of multiple dwelling developments.

### 2.4.1 Odour

The enclosure is located away from public areas which will prevent odour nuisance.

### 2.4.2 Noise

The bin enclosure is located away from public areas to limit noise that may otherwise disturb surrounding residents when materials are placed in the bins.

### 2.4.3 Vermin

The use of lidded MGBs will eliminate access by vermin. The use of bait stations will also be considered by the Development operator if required.

### 2.4.4 Washing of Bins and Enclosure

The Strata/Facility Manager will be responsible for the organisation of regular washing of bins and for maintenance of the storage area. The area will have graded floors that drain to sewer which will allow for the cleaning of the store and bins.

### 2.4.5 Aesthetics

The bin enclosure has been designed with the Development and as such will be consistent with the overall aesthetics, avoiding the placement of bins along the external faces of the building.

### 2.4.6 Protection from Vandalism

The bin enclosure will be closed off from public access and will use gates and/or doors to promote a sense of ownership and community in order to deter vandalism and anti-social behaviour. No bins will remain or be stored outside of the enclosure

## 2.5 Transfer of Waste and Recycling

### 2.5.1.1 Waste Transfer

Residents and tenants of commercial developments will transfer to the dedicated refuse stores located on the site as required. These wastes will be emptied into their respective bins within the associated bin stores.

### 2.5.1.2 Co-mingled Recycling Transfer

Residents and tenants of commercial developments will transfer recycling to the dedicated refuse stores located on the ground floor as required. Recycling will be emptied into their respective bins within the associated bin stores.

## 2.6 Collection of Waste and Recycling

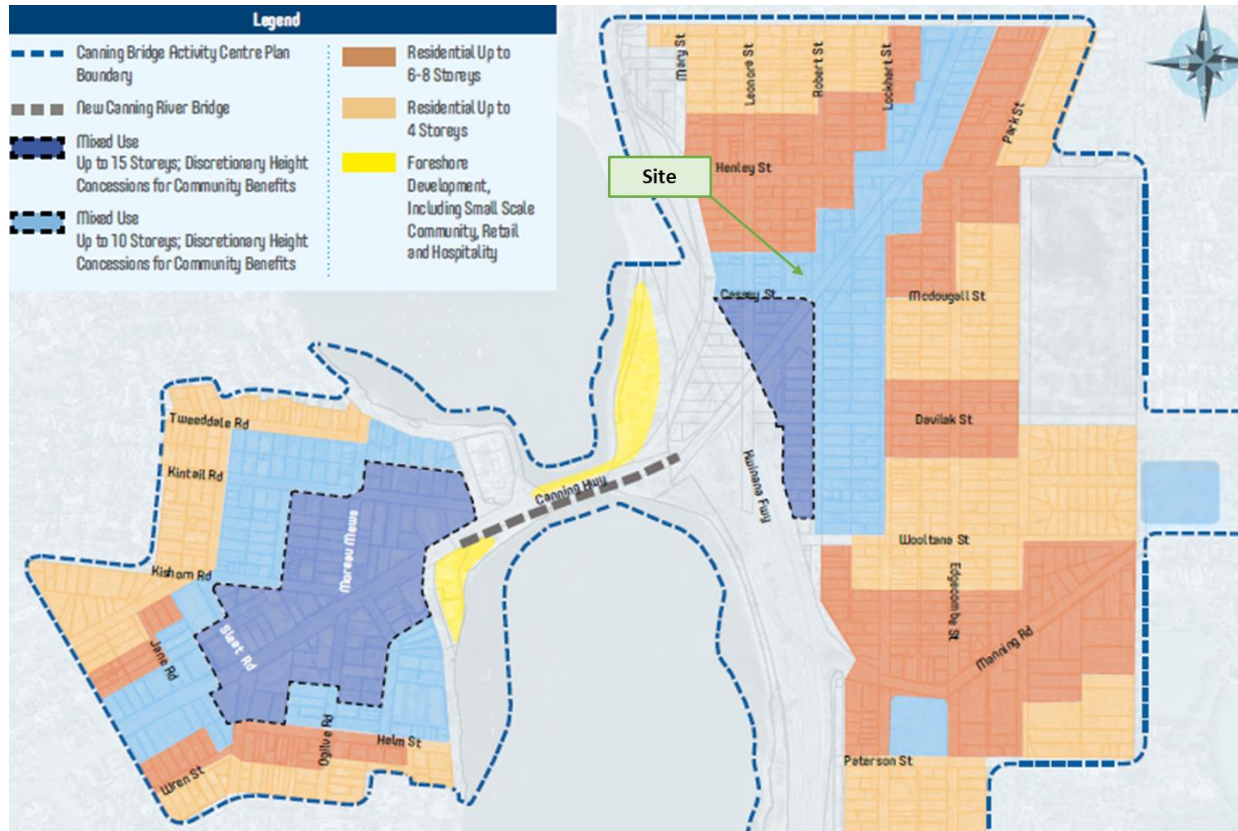
The Site falls under the M10 zone within the Canning Bridge Activity Centre Plan as indicated in **Figure 2-2**.

This document states that:

“Developments within the M15, M10 and H8 Zones shall provide for all management of waste wholly within the development site, including the ability for service vehicles to circulate within the development. No on-street waste collection areas are permitted within the M15, M10 and H8 Zones.”

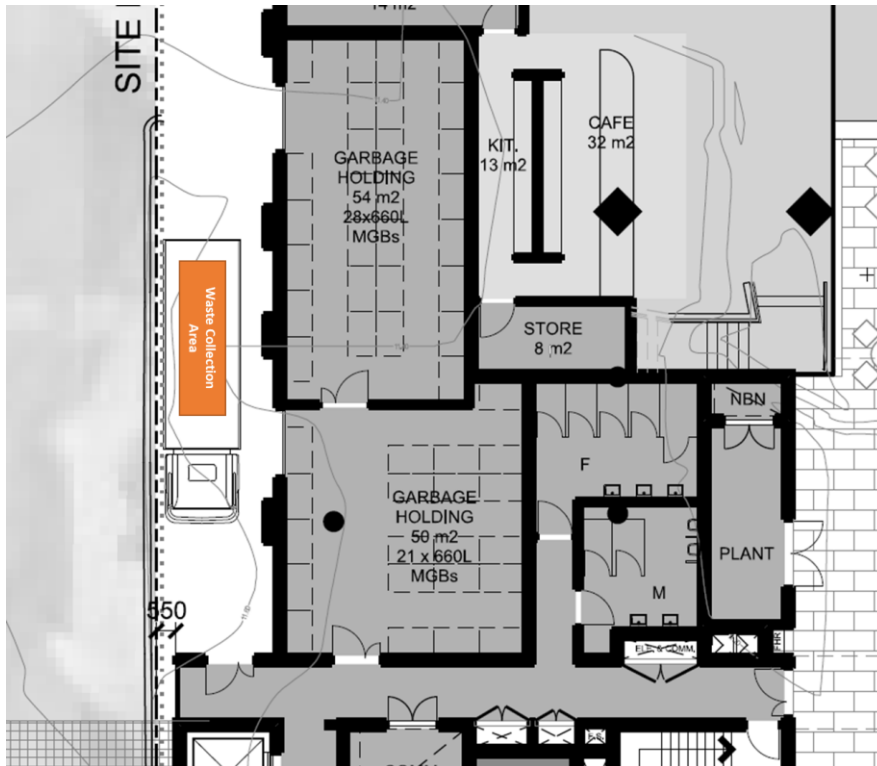


Figure 2-2 Canning Bridge Activity Centre Plan Land Use



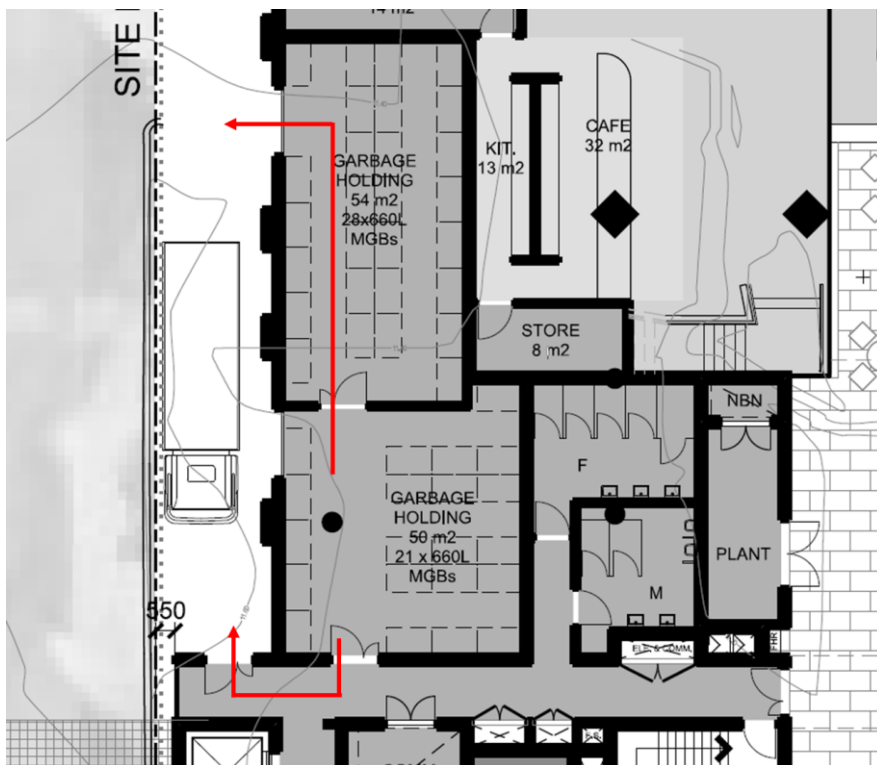
The proposed development is to be serviced by the City of South Perth by providing 29 x 660L bins for general waste and 17 x 660L bins for recyclable waste for the residential and commercial tenancies. Waste collection will be undertaken in a dedicated area to be provided on Lily Lane adjacent to the proposed bin enclosure for this development as illustrated in **Figure 2-3**. The Strata/Facility Manager or staff will provide access to the proposed residential and commercial bin enclosures. The City of South Perth staff will ferry loaded 660L MGBs from the bin enclosure to the waste truck for disposal on the days of collection and return the empty MGBs back to the respective bin enclosures.

Figure 2-3 Waste Collection Point



**Figure 2-4** provides details of the anticipated access and pathways for transporting of bins by City of South Perth staff/contractor to and from the waste truck on collection days.

Figure 2-4 Access and pathway



## 2.6.2 Waste Collection Frequencies

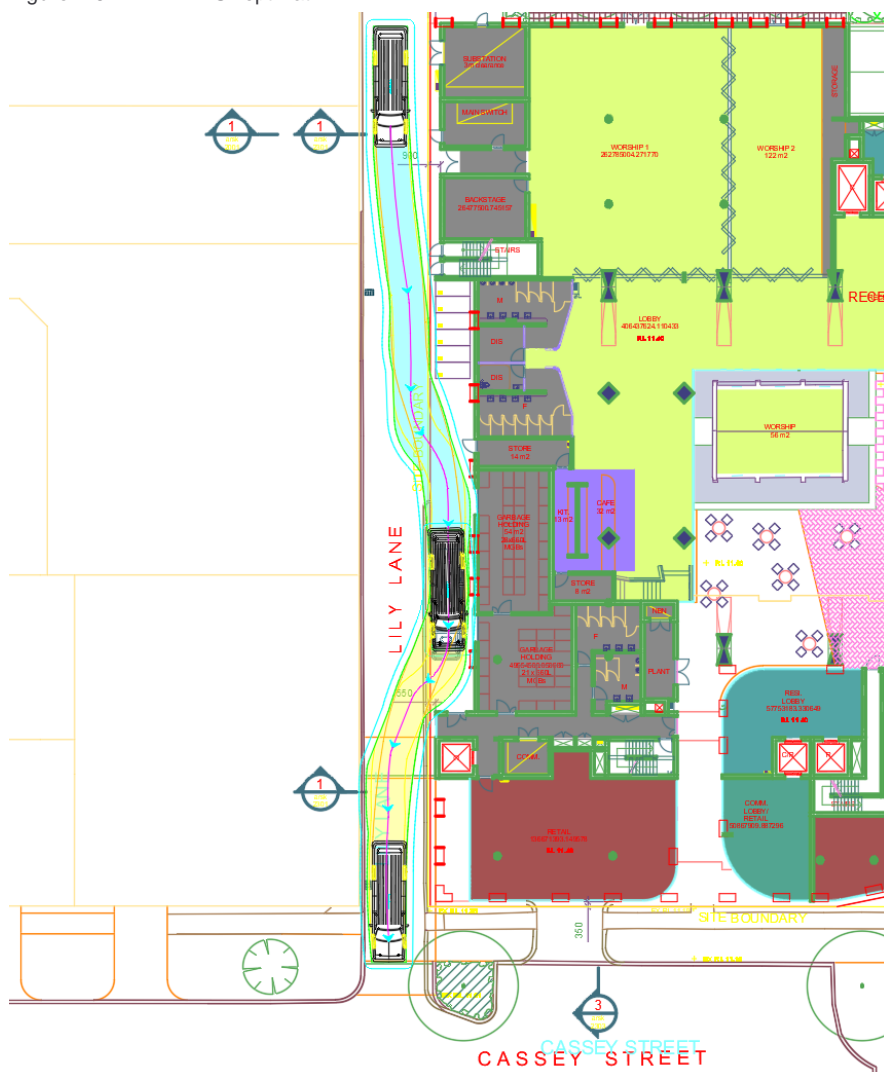
It is anticipated that the commercial waste collection frequencies will be as follows:

- > General and recyclable wastes for the residential is to be collected twice a week by the City of South Perth;
- > General waste for the commercial (office, church and retail), is to be collected three times a week by the City of South Perth; and
- > Recycle waste for the commercial (office, church and retail) is to be collected twice a week by the City of South Perth.

## 2.6.3 Provision for Service Vehicles

A swept path analysis was undertaken for a Medium Rigid Vehicle (MRV) as shown in **Figure 2-5**. The waste truck is expected to traverse along Lily Lane to reach the dedicated service bay to be provided on the western boundary of the development adjacent to the proposed bin enclosures. The waste truck is expected to easily travel southbound along Lily Lane without any difficulty, park in the dedicated service bay along Lily Lane and then continue southwards on Lily Lane on completion of the waste collection.

Figure 2-5 MRV Swept Path

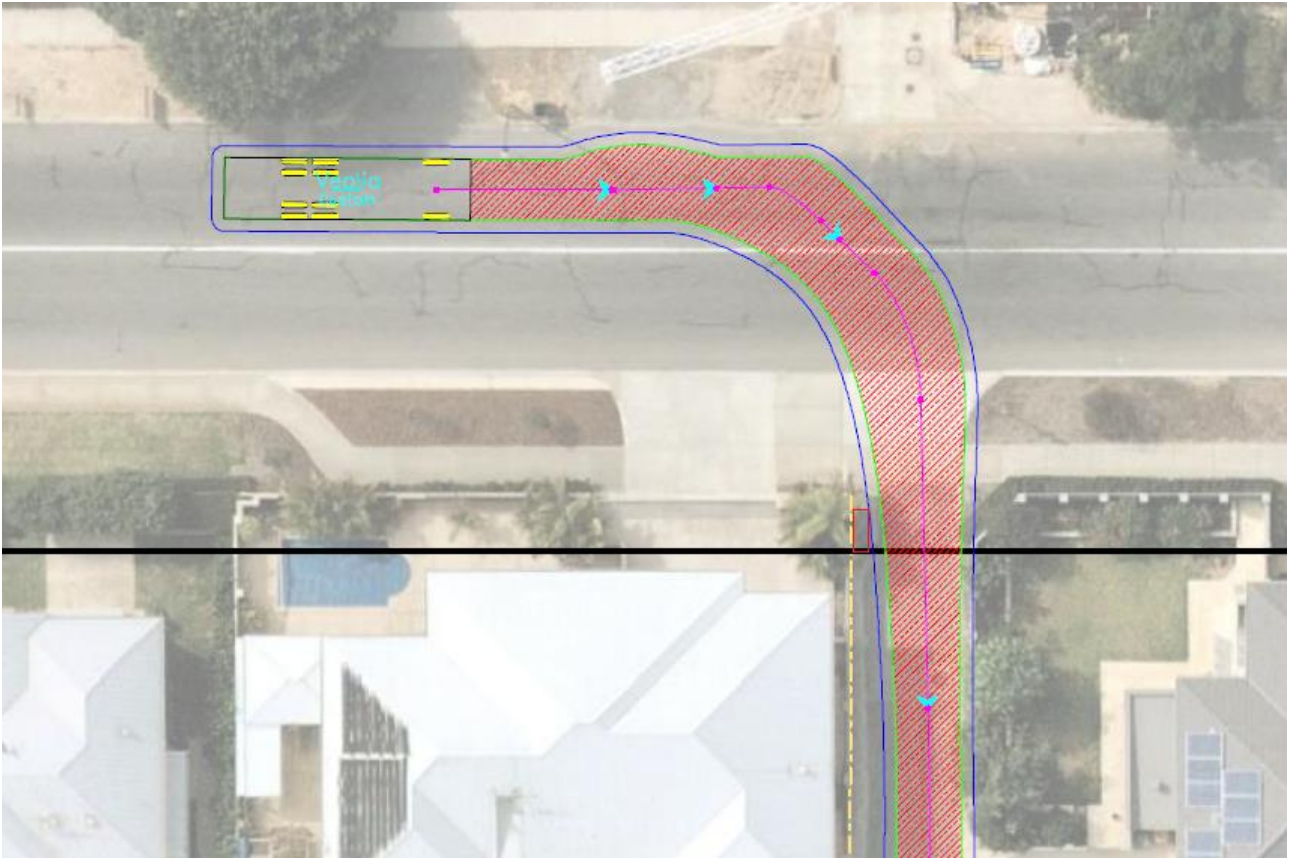


It should be noted that currently, the City's waste services vehicles access Lily Lane with a truck size larger than or equal to vehicles required to service the site. Due to this, it is not expected that there will be any vehicle access concerns created by the development within Lily Lane.

A swept path check was undertaken at the northern end of Lily Lane where, due to the placement of a western power transformer, the lane width is at its narrowest. **Figure 2-6** illustrates that the lane is able to accommodate the swept path of a 10.1m waste vehicle.

Hence no modifications are required to specifically allow servicing of the development via Lily Lane.

Figure 2-6 Swept Path at northern end of Lily Lane

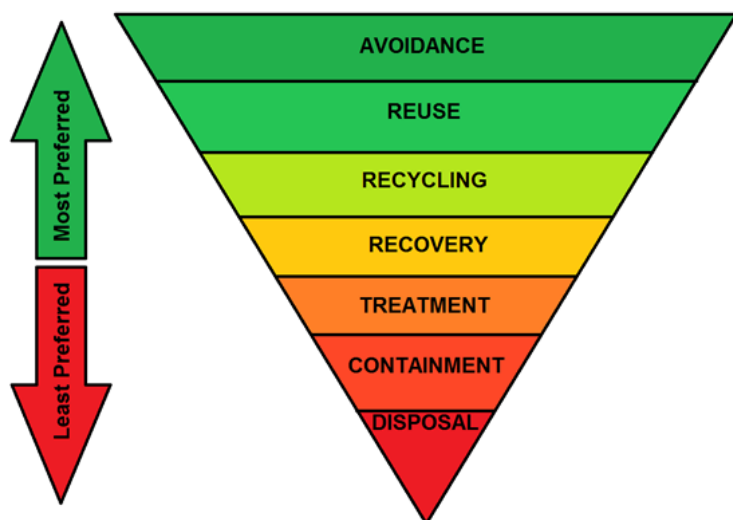




### 3 Waste Reduction and Management Strategy

This waste management plan has been developed with the strategic approach of reducing waste through best practices and education of tenants and staff. Best practices for waste minimisation will optimise the Development's use of the waste minimisation hierarchy, which seeks to encourage sustainable options for waste. The waste hierarchy is demonstrated below.

Figure 3-1 Waste Hierarchy



#### 3.1 Provision of Information

Information dissemination is essential in order to communicate well the best practices of waste management. Suitable types of information which can be provided includes:

- Online information;
- Marketing materials such as posters and leaflets demonstrating procedures of waste segregation and waste collection days; and
- Sufficient labelling of bins, signage of storage areas and equipment to reinforce waste separation.

However, information on its own is not enough and it must be paired with initiatives to be effective.

#### 3.2 Engagement

A regular engagement between all the stakeholders of the development should take place in order to remind the residents, visitors and staff the proper and best practices of waste management. The engagement should include

- Demonstration of waste management systems pertinent to an individual's role;
- An explanation of the benefits of waste separation and recycling; and
- Training on all pertinent equipment related to waste management;

#### 3.3 Monitoring and Review

The Strata/Facility Manager who will oversee the implementation of the Waste Management Plan should continually monitor and review the waste management plan activities.

The Strata/Facility Manager will be responsible for the following:

- Monitoring and maintenance of bins and the Bin Storage Area;

- Monitor bulk wastes accumulation;
- Assist with ferrying of bins to and from the Bin Storage area and Bin Presentation Area on collection days;
- Monitor residents and tenant's behaviour and identify requirements for further waste segregation and management education
- Engage with new residents, and tenant's regarding best practices in waste management
- Engage with the local government to ensure efficient and effective waste service to the development.

In the event that waste generation rates for the Development change, a waste audit may be required by the City or other regulatory bodies. Similarly, should a change to the waste regulations be implemented by the City or other regulatory bodies, a waste audit may be required in addition to further waste stream separation.

## 4 Conclusion

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This Waste Management Plan demonstrates that the proposed development provides a sufficiently sized Bin Storage Area for storage of general and recyclable waste based on the estimated waste generation and a suitable configuration of bins.

The collection of general and recyclable waste is achieved using:

- > 28x660L general and recycling waste bins for residential, collection twice each week;
- > 12x660L general waste bins for office, church and retail use, collection three times each week; and
- > 6x660L recycling bins for office, church and retail use, collection twice each week

The waste collection vehicle will service the refuse and recycling bins from a dedicated area to be provided on Lily Lane adjacent to the proposed bin enclosures. The Strata/Facility Manager or staff will provide access to the proposed residential and commercial bin enclosures. The City of South Perth staff will ferry loaded 660L MGBs from the bin enclosure to the waste truck for disposal on the days of collection and return the empty MGBs back to the respective bin enclosures.

## 5 References

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*City of South Perth (n.d.), Waste Guidelines for New Developments City of South Perth Version 4, South Perth*

*City of Melbourne (2014), Guidelines for Preparing a Waste Management Plan, City of Melbourne*

*WALGA (n.d.), Multiple Dwelling Waste Management Plan Guidelines: A Resource for Western Australian Local Government and Developers, Perth.*

*WALGA (n.d.), Commercial and Industrial Waste Management Guidelines, Perth.*

Como Baptist Church - 109, 111 & 113  
Robert St

## APPENDIX

# A

## ARCHITECTURAL PLANS





DA Submission

Como Baptist Church, 109, 111&113 Robert Street and 469&471 Canning Highway, WA

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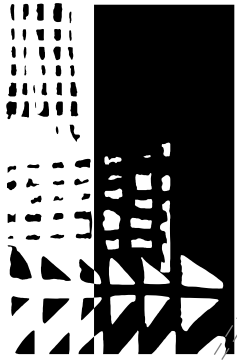
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Master Plan - Combined Sites

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ar-0102

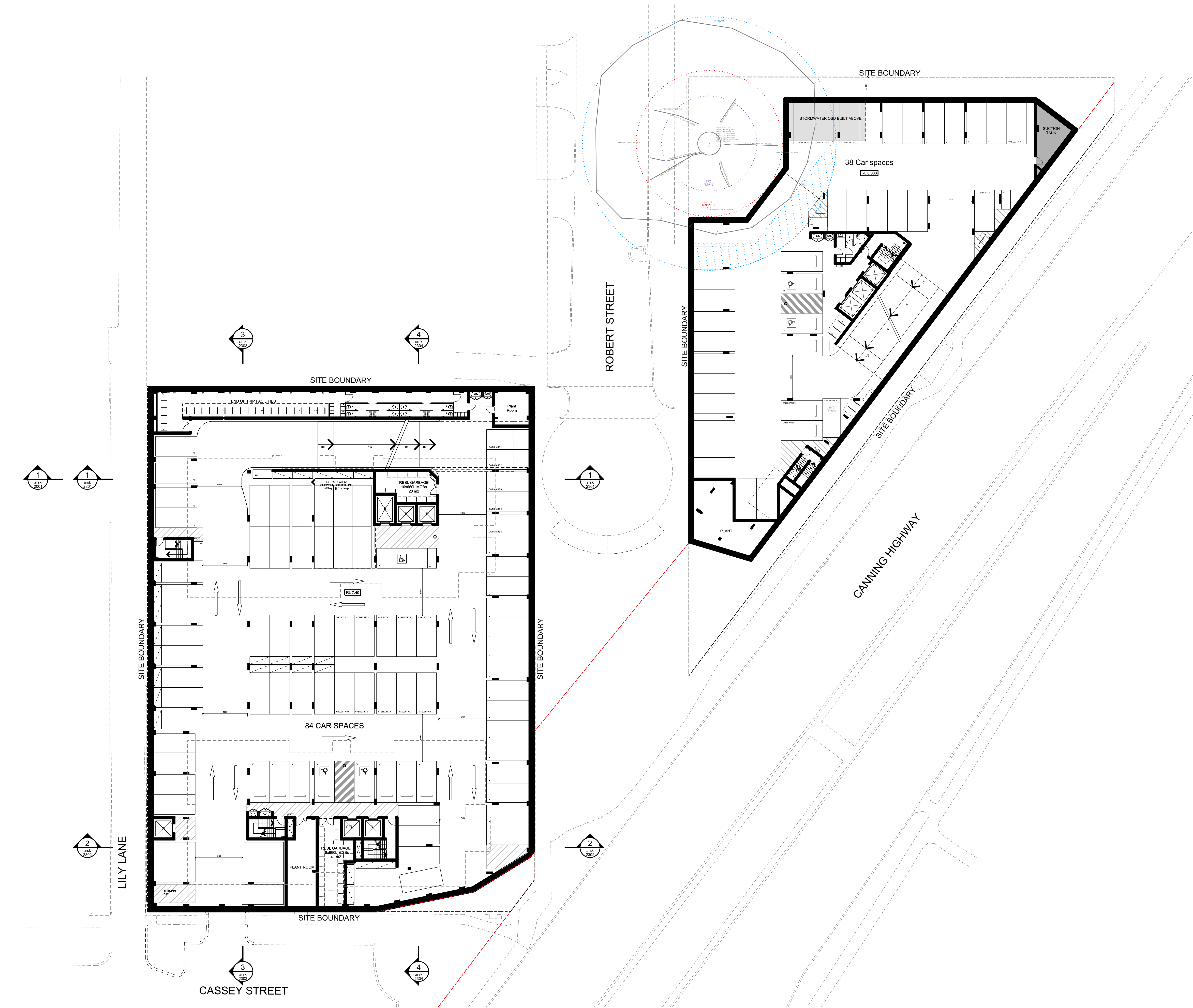
proj no.  
4524-00  
rev no.  
b01

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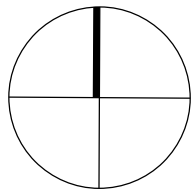
Basement 1 Plan  
Master Plan - Combined Sites

date  
03/03/21

scale  
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ar-0101

proj no.  
4524-00  
rev no.  
b01

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Como Baptist Church - 109, 111 & 113  
Robert St

## APPENDIX

# B

## WASTE CALCULATIONS

## Waste generation rate as per City of South Perth Waste Management Guidelines

Weekly waste estimates are based on the waste and recycling generation rates provided by the City of South Perth which is outlined below.

### General Waste and Recycling Generation Rates

Type of Premises	General Waste (L)	Co-mingled Recycling (L)
1 Bedroom (unit)	80L/100m2/day	80L/100m2/day
2 Bedroom (unit)	160L/100m2/day	120L/100m2/day
3+ Bedroom (unit)	240L/100m2/day	120L/100m2/day
Office	10L/100m2/day	10L/100m2/day
Church	50L/100m2/day	10L/100m2/day
Retail	660L/100m2/day	200L/100m2/day

The following equation was used to calculate the anticipated weekly waste generation for residential waste in each building:

$$\text{Total Amount of Waste Type} = (\text{Number of Units} \times \text{Waste Rate}) \times 7 \text{ days}$$

The total number of bins required for collection of general and recycling waste twice a week for the residential development was calculated using the following equation:

$$\text{Total Number of Bins Required} = \frac{\text{Total Weekly Waste Generated}}{660 \text{ L}} \times 0.5$$

The following equation was used to calculate the anticipated weekly waste generation for commercial waste for the proposed development:

$$\text{Total Amount of Waste Type} = (\text{Floor Area} \times \text{Waste Rate}) \times \text{days per week}$$

The total number of bins required for the collection of general waste for the proposed commercial development three times a week was calculated using the following equation:

$$\text{Total Number of Bins Required} = \frac{\text{Total Weekly Waste Generated}^1}{660 \text{ L}} \times \frac{1}{3}$$

The total number of bins required for collection of recycling waste for the proposed commercial development twice a week was calculated using the following equation:

$$\text{Total Number of Bins Required} = \frac{\text{Total Weekly Waste Generated}^2}{660 \text{ L}} \times 0.5$$



