

Proposed Commercial Development – Edward Millen Site, East Victoria Park

Waste Management Plan

Rev 4

Prepared for: Blackoak Capital Pty Ltd

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Revision

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Rev 4	5 February 2024	Final	JD	DH

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WASTE MANAGEMENT PLAN FOR

Proposed Commercial Development – Edward Millen Site, East Victoria Park

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1. Introduction

1.1 Background

Stantec has been commissioned by Blackoak Capital Pty Ltd (“the Client”) to prepare a Waste Management Plan (WMP) for the proposed commercial development (the Development) located at the Edward Millen House site, East Victoria Park within the Town of Victoria Park.

The scope of this WMP is limited to the estimation of general waste, recycling, and food organic and garden organic (FOGO) 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 by the Town of Victoria Park and the WALGA’s Commercial and Industrial Waste Management Plan Guidelines.

1.2 Site location

The subject Site is located at 15 Hill View Terrace (Edward Millen Site), East Victoria Park, within the Town of Victoria Park. **Figure 1-1** shows an aerial image of the Site.

Figure 1-1 Aerial Image of Site



Source: MetroMap (2023)

Plans for the Development outlines a single storey building with the majority of its premises dedicated for commercial use, which includes a childcare centre, brewery, bakery & café and bistro. The anticipated development yield for the Development is tabulated in **Table 1-1**.



The proposed Development comprises a childcare centre fronting Baillie Avenue and the commercial tenancies fronting Hill View Terrace. The bin enclosures for the proposed development are located on the ground floor. Architectural plans outlining the usage of floor space are provided in **Appendix A**.

Table 1-1 Development Yield

Type of Premises	Quantity
Childcare Centre	751 sqm
F&B Retail	1404.3 sqm
Non-F&B Retail	58.7 sqm
Office	145.65 sqm

1.3 Waste and Recycling Collection Services

The Development will use the waste collection service provided by a private collector for the collection of general, recycling and FOGO waste. Waste collection for the childcare centre is proposed to be undertaken four times a week, while the commercial tenancies are anticipated to be collected 7 times a week.

General, recycle and FOGO waste collections will be undertaken on-site and arranged to be collected between 10:00am and 2:00pm to minimise disruption to traffic operations as well as minimise any impacts to staff and tenants.

1.4 Bin Enclosure

The Mobile Garbage Bin (MGB) storage for the Development will be in bin enclosures located on the ground floor.

1.4.1 Construction Considerations

The bin enclosures for the Development will be designed with the following considerations:

- The bin enclosures will have concrete slab floor with a graded floor to a waste drain that is connected to sewer. Floors to be even and flat for safe storage of bins.
- Access doors will be self-closing to prevent access to vermin.
- 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.
- A hose cock will also be included to facilitate washout of bins and washout of the area.
- Drainage of wastewater from washing facilities will drain to main sewers.
- Sufficient lighting for the bin enclosure should be provided by motion detected automatic artificial lighting to facilitate access to the bin enclosure.
- Adequate ventilation will be provided to the bin enclosures 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 the drain.
- Bins not to be visible from the property boundary or areas trafficable by the public.
- Any external bin store greater than 20m is to be roofed as per Water Authority requirement; and
- Bins are reasonably secured from theft and vandalism.



2. Waste Generation and Management

To ensure that the waste from Development is properly managed, it was necessary to estimate the volume of waste that is likely to be generated on the premises. The Town of Victoria Park does not have waste generation rates for commercial tenancies and has advised to use WALGA's Commercial and Industrial Waste Management Plan Guidelines. In addition, the WALGA guidelines do not have waste generation rates for a childcare centre. The Council has advised that the waste rates be sourced from the Waste Authority's Waste Calculator. However, the rates from the City of South Perth's childcare centre's waste generation rate were determined to be appropriate for this Site.

Using these generation rates as well as the FOGO generation rates advice provided by the Town of Victoria Park, a broad estimation of daily waste generation for the Development has been calculated.

2.1 Waste Streams

2.1.1 General, Recycling and FOGO

Waste and recyclables will be sorted on-site and as close to source as possible. Sorting will rely on appropriate education of staff, and tenants in addition to adequate signage for bins located in the bin enclosures. 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.
- Food organics and garden organics (FOGO), which includes food and green waste, uncontaminated wood waste, forestry residues and other biodegradable organic residues. The Council will dictate what can be included in these bins.

2.1.2 Other Streams

The Proposed development primarily consists of commercial tenancies and a childcare centre, by the nature of these businesses bulk waste is not expected to be generated.

Liquid waste generated by the food and beverage venues will be collected by a Water Corporation approved grease arrestor. It is anticipated that the Mildred Creak main kitchen will have a grease arrestor and a second grease arrestor will be installed for the café / bakery located in the Rotunda building. The grease arrestors will be cleaned out by a private contractor at frequencies specified by the Water Corporation which is typically once every 8 weeks.

The proposed micro-brewery will have a similar process to the kitchen grease arrestors. The brewery will have a trade waste agreement with the Water Corporation and the brewery will comply with all requirements. Generally speaking, the Water Corporation will require effluent temperature to be below 40 degrees, PH between 6 and 10, a solid settling pit will be required, a flow meter and sampling point for Water Corporation to monitor discharge into the sewer system. The solid waste that accumulates in the settling pit is then periodically removed by a specialist waste removal company. This frequency will be specified by the Water Corporation.

A micro-brewery will generally average 3 – 4 brews per week. The brewing boil will last an average of 1 hour per brew; this equates to 3 – 4 hours per week of brewing boil. The odour created by a brewing boil is a pleasant and sweet malty odour however we understand odour is subjective.

To substantially reduce the odour from a brewing boil the brewery operator will install a vapour condenser on the kettle. This equipment condenses steam rising off the kettle and converts it back into water, this water then discharges as trade waste. This process substantially reduces the odour discharged with the steam of the boil.



2.2 Waste Streams Estimates

The estimate weekly generated waste has been calculated using the waste generation rates detailed in **Table 2-1**. It should be noted that WALGA's waste generation rate does not consider FOGO bins for the restaurant/café. The Town of Victoria Park has advised to use the proportion indicated in Waste Authority's Waste Calculator. Based on this information, the FOGO generation rate was apportioned 20% of the general waste rate. The general waste rate was reduced to 80% of the rates indicated in the WALGA waste management plan guidelines.

Table 2-1 Waste Generation Rates for the Development

Type of Premises	Sources	Quantity (sqm)	Days of Operation	General Waste	Co-mingled Recycling	FOGO
Childcare Centre	City of South Perth (Childcare)	751	5 days	250 L/100sqm/day	120 L/100sqm/day	-
F&B Retail	WALGA (Restaurant)	1404.3	7 days	525 L/100m ² /day	130 L/100m ² /day	135 L/100m ² /day*
Non-F&B Retail	WALGA (Non-F&B Retail)	58.7	7 days	50 L/100m ² /day	25 L/100m ² /day	-
Office	WALGA (Office)	145.65	7 days	10 L/100m ² /day	10 L/100m ² /day	-

* FOGO Waste generation rate is based on the proportion indicated in Waste Authority's Waste Calculator

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

Table 2-2 Weekly Waste (Uncompacted)

Type of Premises	Weekly Waste	Recycling	FOGO
Childcare Centre	9,387.50	4,506.00	-
F&B Retail	51,608.03	12,779.13	13,270.64
Non-F&B Retail	205.45	102.73	-
Office	101.96	101.96	-

The waste volumes presented are estimates only and are representative of the design drawings of the Development provided in October 2023.

2.2.1 Compactors

It is proposed that two Compactors (one each for general and recycle waste) be provided in the communal commercial bin enclosure. A compaction rate of 50% has been used in the bin calculations although a higher compaction ratio could be achieved. It should be noted that Stantec have been advised by ASI JD MacDonald (the waste equipment supplier) that this waste compactor does not crush the recycle material to such an extent that it would inhibit the sorting at the materials recovery facility. The specifications for the waste compactor are included in **Appendix C**.

It is anticipated that the Development operator/Strata Manager will manage the on-site waste compaction process for the proposed development. The estimated compacted general and recycle waste is summarised in **Table 2-3**.

Table 2-3 Compacted Weekly Waste (Compacted)

Type of Premises	Compacted Weekly Waste	Compacted Recycling
F&B Retail	25,809.00	6,391.00
Non-F&B Retail	105.00	56.00



Office	56.00	56.00
Total	25,970.00	6,503.00

2.3 Bin Requirement

A summary of the breakdown of the anticipated MGB requirements for the proposed development, the proposed bin sizes, and the proposed collection frequencies are provided in **Table 2-4** and **Table 2-5**.

Table 2-4 Bin Requirements for Enclosure of Proposed Site (Childcare Centre)

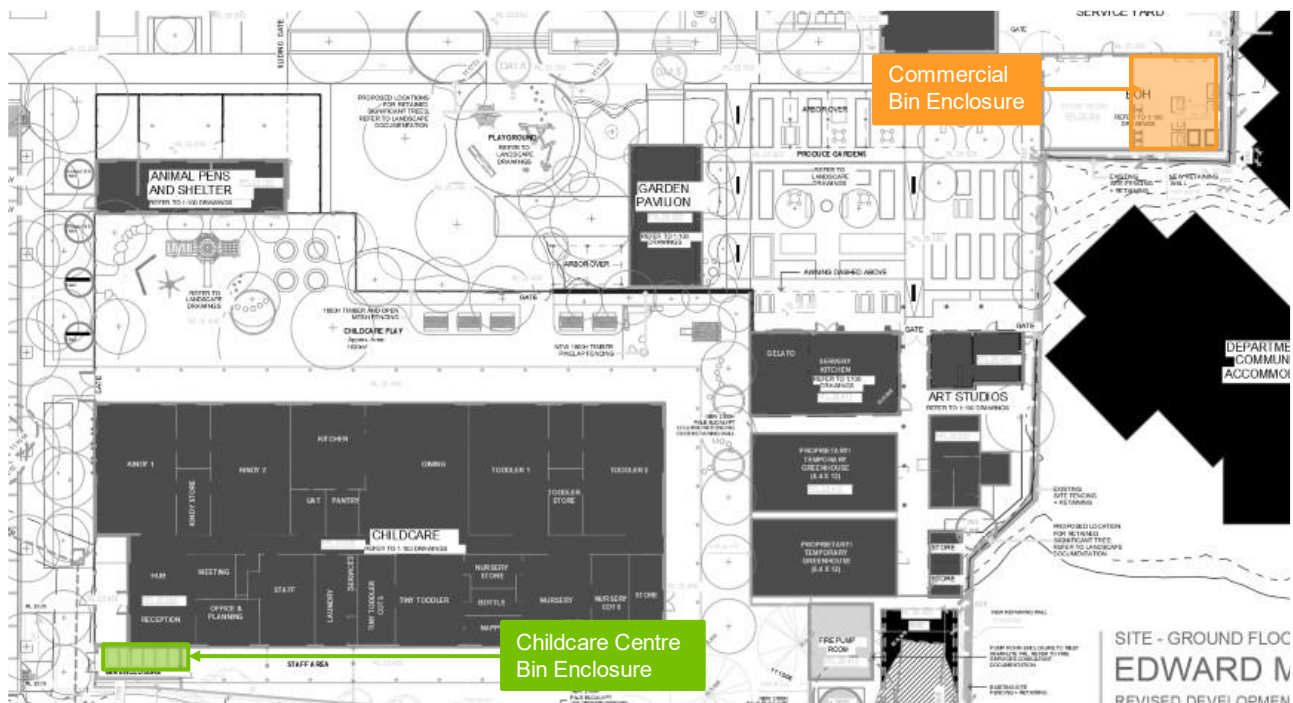
	Size (L)	Collection	No of Bins
General Waste	660	4 times a week	4
Co-mingled Recycling	660	4 times a week	2
Total	6 x660L		

Table 2-5 Bin Requirements for Enclosure of Proposed Site (Commercial)

	Size (L)	Collection	No of Bins
General Waste	1100	7 times a week	4
Co-mingled Recycling	1100	7 times a week	1
FOGO	240	7 times a week	8
Total	5 x1100L and 8 x240L		

A layout of the anticipated bin enclosure is illustrated in **Figure 2-1**. The proposed bin enclosures are adequately sized for the storing and manoeuvring of the bins.

Figure 2-1 Bin Enclosure



Source: Benson Studio (February 2024)

2.4 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 within the development. The waste bins will generally be stored directly abutting the walls of the enclosures.

2.4.1 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 the proposed Development.

Odour

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

Noise

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

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.

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.

Protection from Vandalism

The bin enclosure will be closed off from public access and will use secured doors. No bins will remain or be stored outside of the enclosure.

Regular Washing of Bins and Enclosure

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



2.5 Transfer of Waste and Recycling

2.5.1 Childcare Centre Waste Transfer

A nominated staff member of the proposed childcare Centre will transfer their waste to their dedicated bin enclosure located on the Site as required. This waste will be emptied into their respective bins. It should be noted that Nappies are to be placed in nappy bags and disposed of in the general waste bins.

2.5.2 Commercial Waste Transfer

A nominated staff member of each commercial tenancy will transfer their waste to their dedicated bin enclosure located on the Site as required. This waste will be emptied into their respective bins.

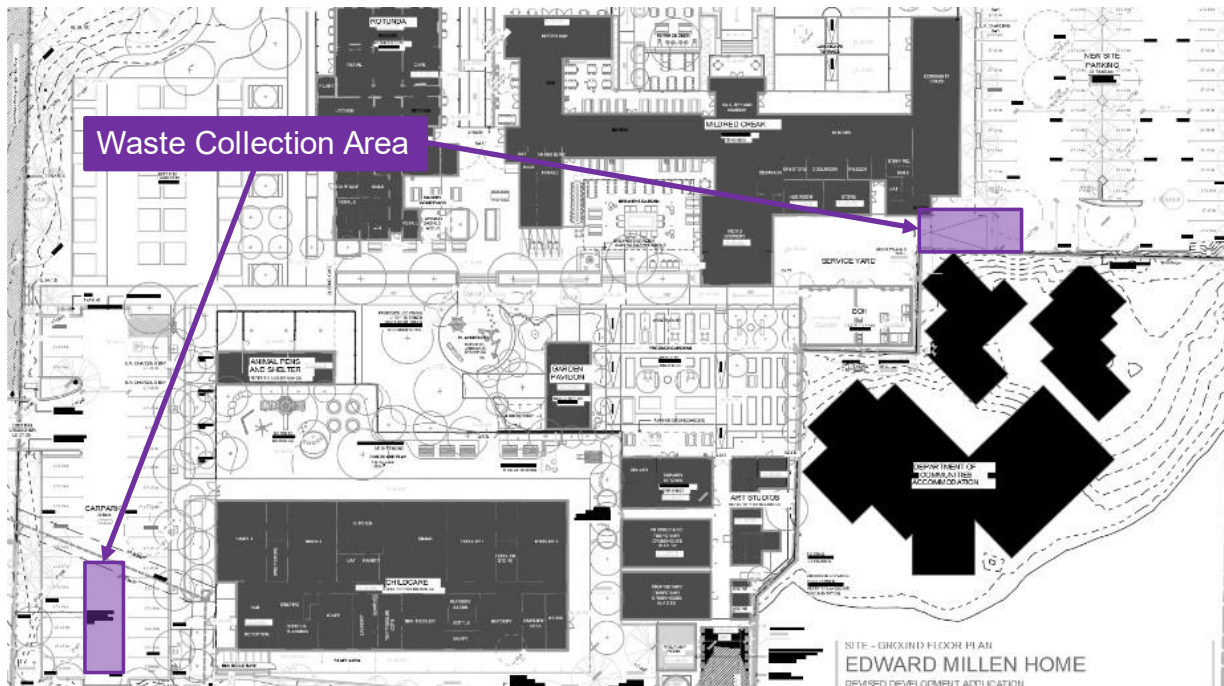


2.6 Collection of Waste and Recycling

2.6.1 Waste Collection

It is envisaged that the general, recycling and FOGO waste will be collected as per the frequencies indicated in **Table 2-4** and **Table 2-5**. Waste collection is proposed to be undertaken on-site near the proposed bin enclosures as illustrated in **Figure 2-2**.

Figure 2-2 Waste Collection Area



Source: Benson Studio (February 2024)

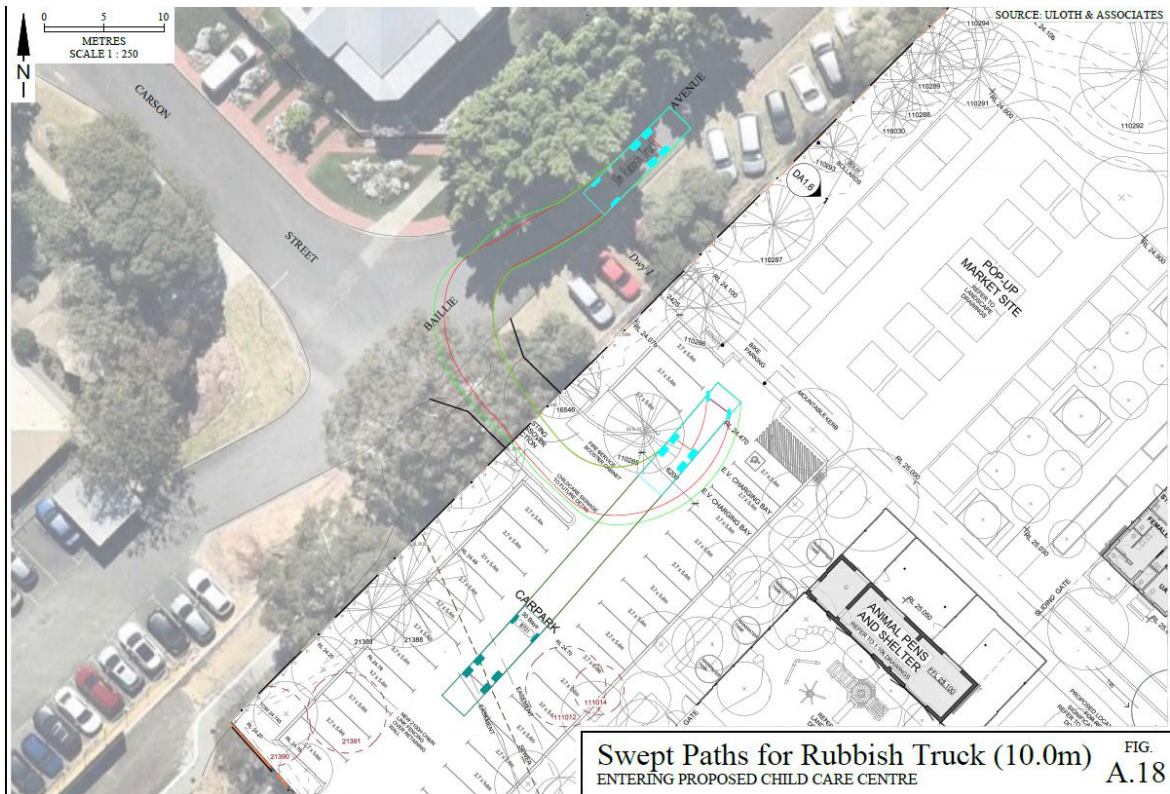
Waste collections will be arranged to occur between 10:00am and 2:00pm to minimise disruption to traffic operations as well as minimise any impacts to staff and tenants. The private waste contractor staff will be provided with a key to access the proposed bin enclosures which will eliminate the need for staff intervention during the waste collection period. The private waste contractor's staff will ferry the loaded 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.

2.6.2 Provision of Service Vehicle

Waste collection is proposed to occur on site at the proposed waste collection areas as shown in **Figure 2-2**. A swept path analysis for a 10.1m waste vehicle was undertaken as illustrated in **Figure 2-3** to **Figure 2-6**.

The swept path analysis for the childcare centre and the commercial tenancies indicates that the private waste collector's truck is able to manoeuvre into the Site in a forward gear, reverse into the proposed waste collection area and exit in a forward gear. It should be noted that the waste collection is anticipated to be undertaken between 10:00am and 2:00pm to minimize disruptions to traffic operations and to reduce any potential impact on staff and visitors.

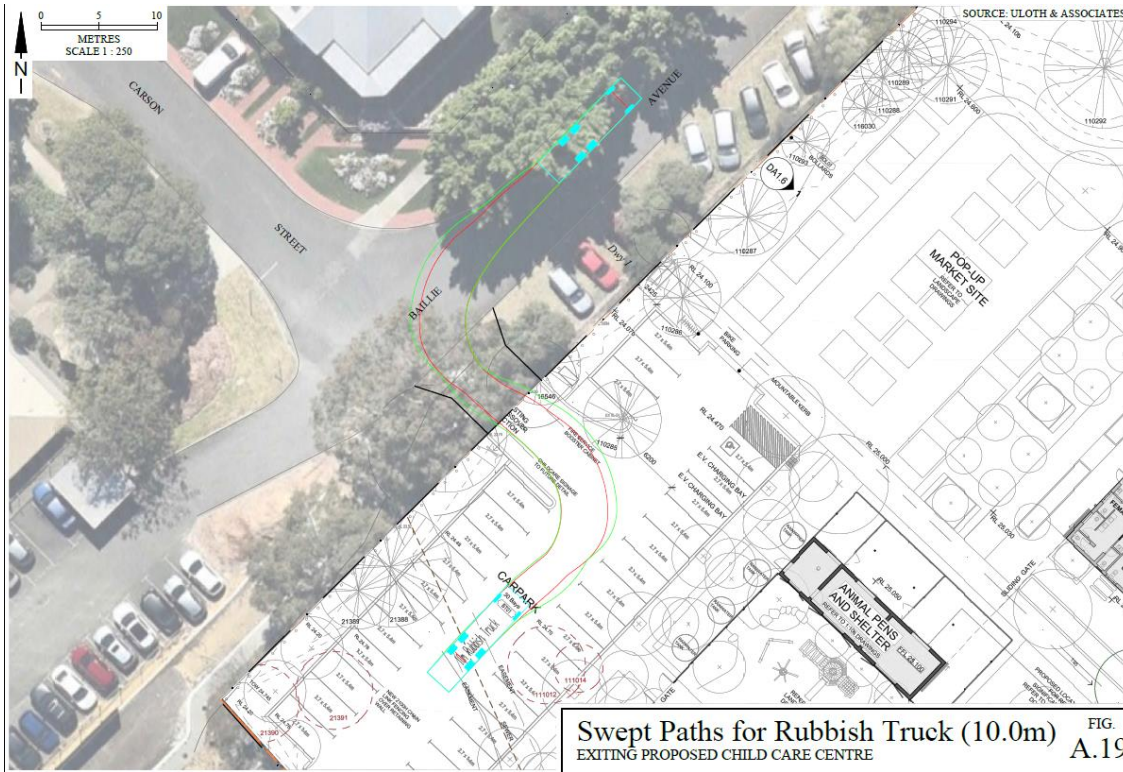
Figure 2-3 Swept Path – Waste Collection (Childcare Centre) - Ingress



Source: Uloth & Associates (February 2024)

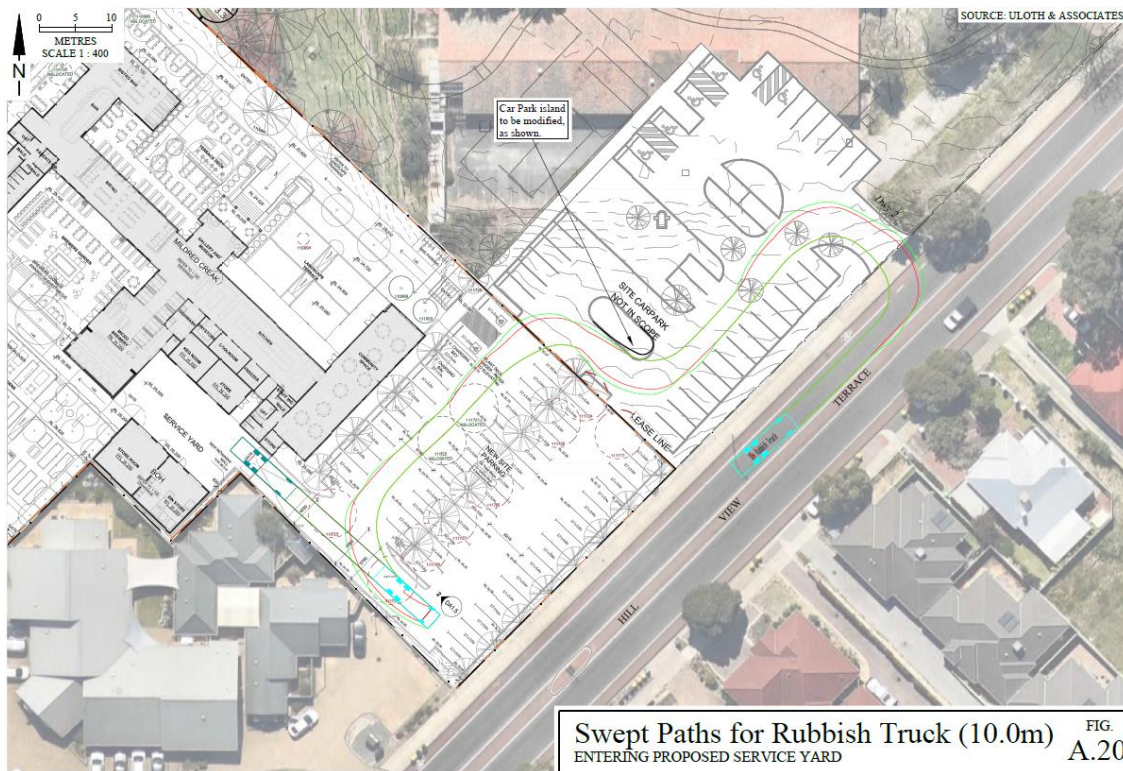


Figure 2-4 Swept Path – Waste Collection (Childcare Centre) – Egress



Source: Uloth & Associates (February 2024)

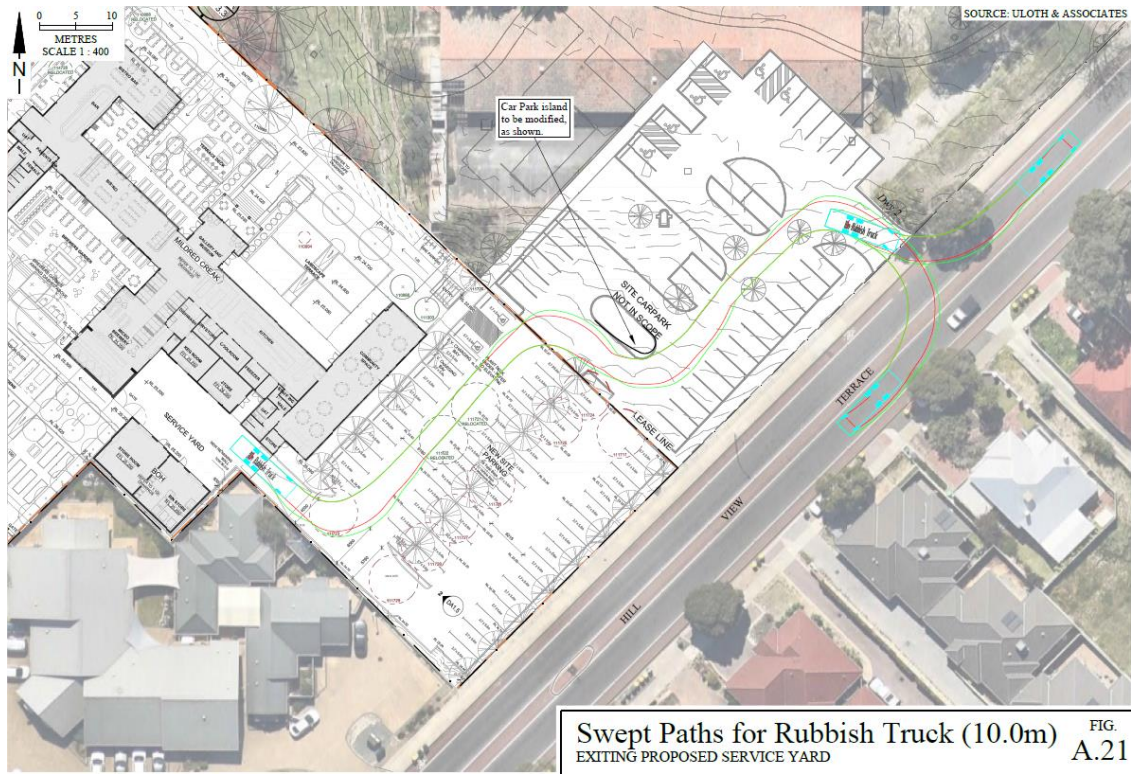
Figure 2-5 Swept Path – Waste Collection (Commercial) – Ingress



Source: Uloth & Associates (February 2024)



Figure 2-6 Swept Path – Waste Collection (Commercial) - Egress

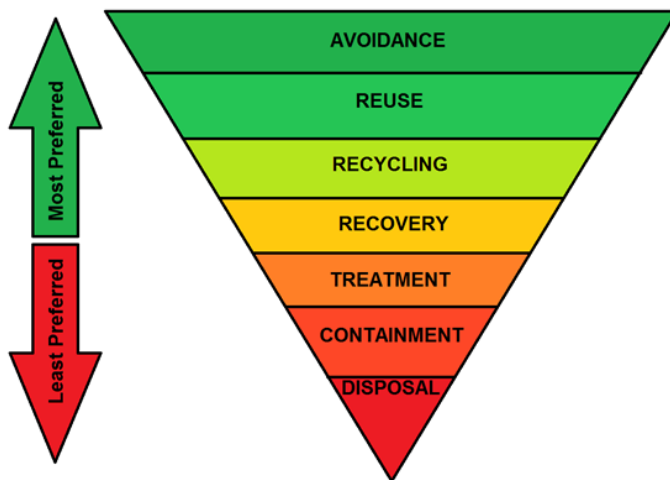


Source: Uloth & Associates (February 2024)

3. Waste Reduction and Management

This waste management plan has been developed with the strategic approach of reducing waste through best practices and education of tenants, staff and visitors. 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 in **Figure 3-1**.

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:

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

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 the tenants and staff of the Development should take place to remind everyone the proper and best practices of waste management. The engagement should include.

- Demonstration of waste management systems pertinent to an individual's role.
- Distribution of waste management strategy documents in relevant locations.
- 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 Facility Manager/nominated staff who will oversee the implementation of the Waste Management Plan should continually monitor and review the waste management plan activities.

The Facility Manager/nominated staff will be responsible for the following:

- Monitoring and maintenance of bins and the bin enclosure area.
- Conduct regular training on waste segregation, reduction, and waste management.
- Conduct regular waste audits to improve waste management.
- Providing access to the bin enclosure area for the waste contractor staff; and
- Engage with the local authority to ensure efficient and effective waste service for the Development.

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



4. Conclusion

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

The collection of general, recyclable and FOGO waste is achieved using:

- 4x 660L general waste bins for childcare centre, to be collected four times a week; and
- 2x 660L recycling waste bins for childcare centre, to be collected four times a week.
- 4x 1100L general waste bins for commercial tenancies, to be collected seven times a week.
- 1x 1100L recycling bins for commercial tenancies, to be collected seven times a week; and
- 8x 240L FOGO bins for commercial tenancies, to be collected seven times a week.

The private waste collector will collect the general, recycling and FOGO bins on site between 10:00am and 2:00pm. The private waste contractor staff will be provided with a key to access the proposed bin enclosures which will eliminate the need for staff intervention during the waste collection period. The private waste contractor's staff will ferry the loaded 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.



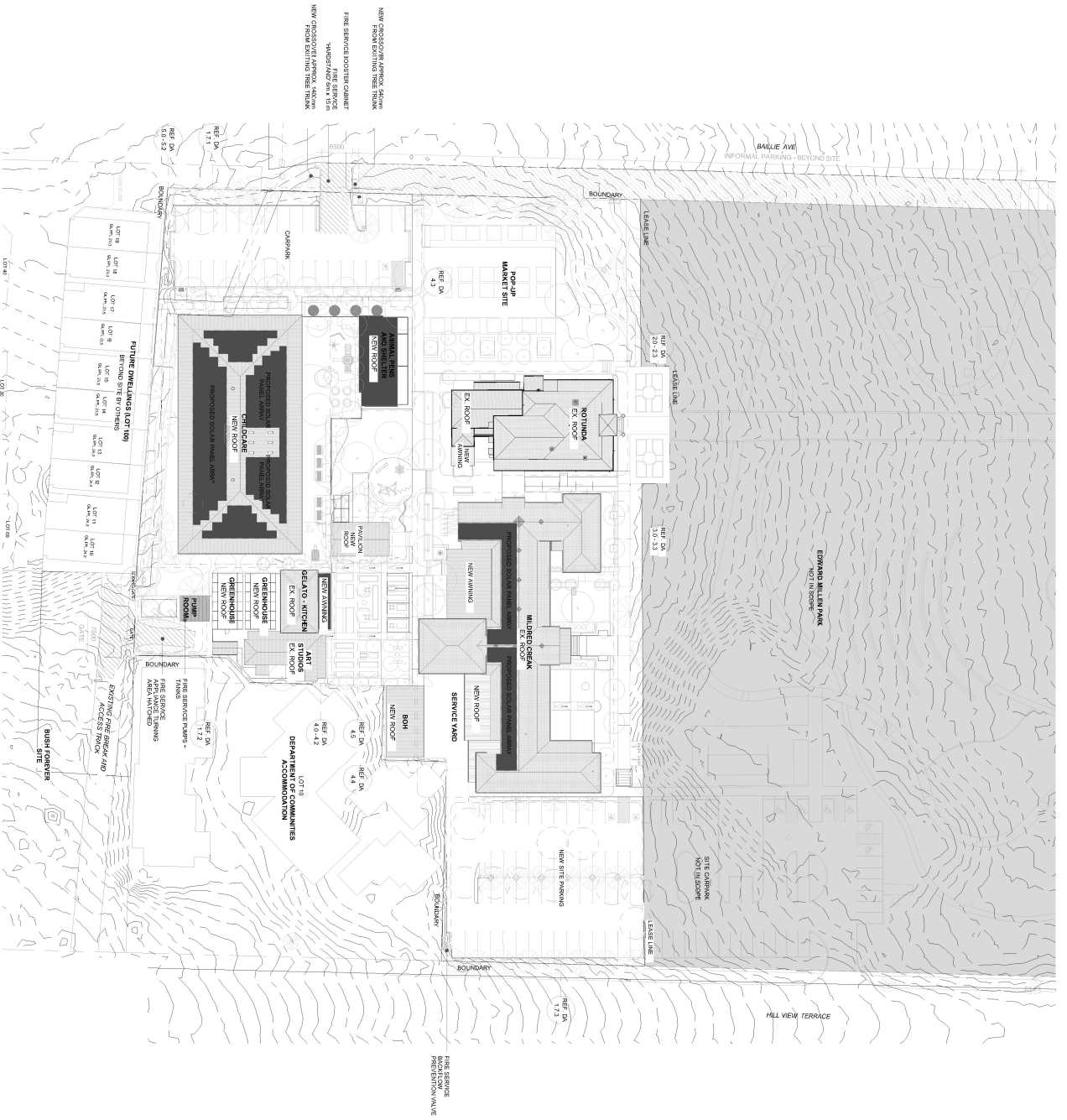
5. References

WALGA (n.d.), *Commercial and Industrial Waste Management Guidelines*, Perth.
City of South Perth (n.d.), *Waste Guidelines for New Developments*, South Perth



Appendix A. Site Plans





SITE PLAN

EDWARD MILLEN HOME
REVISED DEVELOPMENT APPLICATION

1 : 500 @ A1

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DA1.1

Appendix B. Waste Calculations

Childcare Centre General Waste and Recycling Generation Rates

Type of Premises	Sources	General Waste	Co-mingled Recycling
Childcare Centre	City of South Perth (Childcare)	250 L/100sqm/day	120 L/100sqm/day

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

$$\text{Total Weekly Waste Generated (Floor Area} \times \text{Waste Rate)} \times \text{no of days per week}$$

The total number of bins required for the collection of general waste for the proposed childcare centre with four times a week collection was calculated using the following equation:

$$\text{Total Number of General Bins Required} = \frac{\text{Total Weekly Waste Generated}}{660 \text{ L}} \times \frac{1}{4}$$

The total number of bins required for the collection of recycling waste for the proposed childcare centre with four times a week collection was calculated using the following equation:

$$\text{Total Number of Recycling Bins Required} = \frac{\text{Total Weekly Waste Generated}}{660 \text{ L}} \times \frac{1}{4}$$

Commercial General Waste and Recycling Generation Rates

Type of Premises	Sources	General Waste	Co-mingled Recycling	FOGO
F&B Retail	WALGA (Restaurant)	525 L/100m ² /day	130 L/100m ² /day	135 L/100m ² /day
Non-F&B Retail	WALGA (Non-F&B Retail)	50 L/100m ² /day	25 L/100m ² /day	-
Office	WALGA (Office)	10 L/100m ² /day	10 L/100m ² /day	-



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

$$\text{Total Weekly Waste Generated (Floor Area} \times \text{Waste Rate)} \times \text{no of days per week} \times 50\%$$

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

$$\text{Total Number of General Bins Required} = \frac{\text{Total Weekly Waste Generated}}{1100 L} \times \frac{1}{7}$$

The total number of bins required for the collection of recycling waste for the proposed commercial tenancies with seven times a week collection was calculated using the following equation:

$$\text{Total Number of Recycling Bins Required} = \frac{\text{Total Weekly Waste Generated}}{1100 L} \times \frac{1}{7}$$

The total number of bins required for the collection of FOGO waste for the proposed commercial tenancies with seven times a week collection was calculated using the following equation:

$$\text{Total Number of FOGO Bins Required} = \frac{\text{Total Weekly Waste Generated}}{240 L} \times \frac{1}{7}$$



Appendix C. Waste Equipment





Dimensions

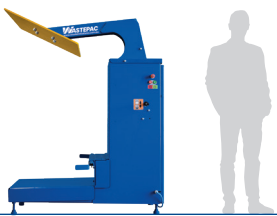
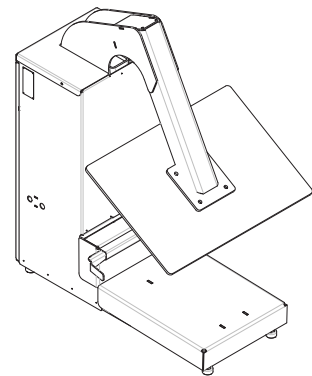
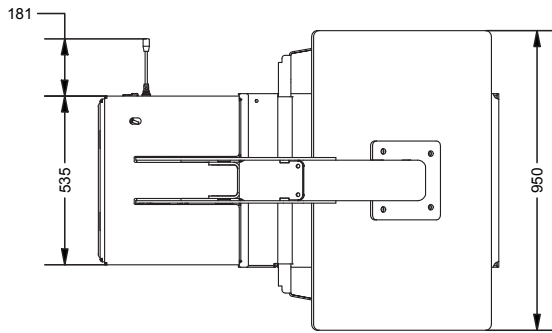
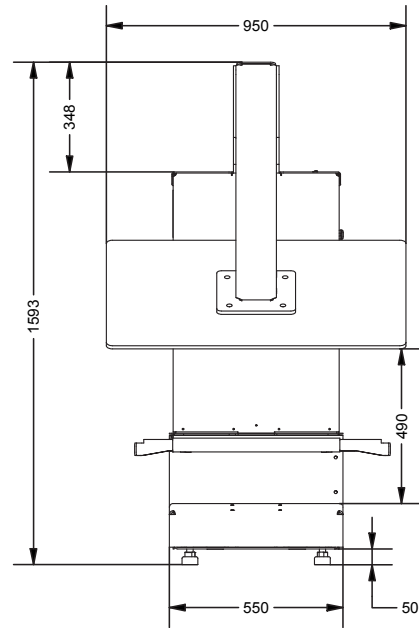
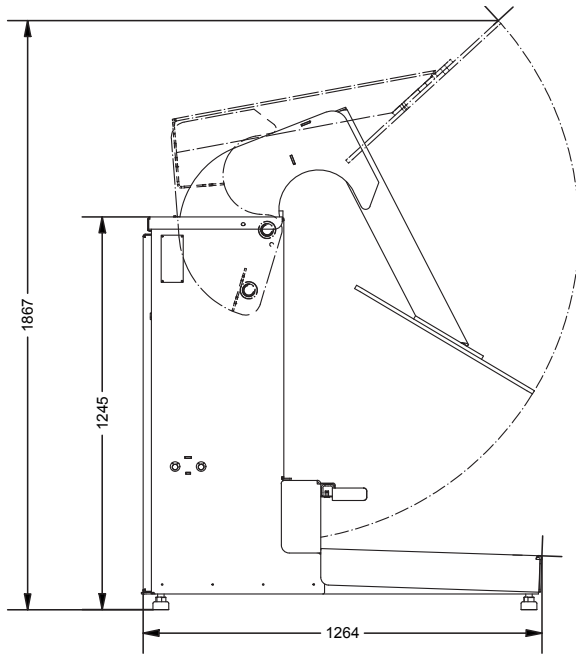
Height	1 867 mm
Width	950 mm
Depth	1 264 mm
Weight	270 kg
Power Supply	240V 1 Phase
Motor	1.5kW 15A
Pressing Force	Up to 3.5T
Noise Level	72 dB
Cycle Times	20 Seconds

Features

- Reduces frequency of daily & weekly waste collections
- A compaction ratio of 3:1 (depending on material used)
- Base lifting plate ensures bin wheels are not damaged during compaction
- Two handed operation makes for a safer working environment
- Adaptor available to compact a 660L bin



Dimensions and technical information without obligation. Subject to change.



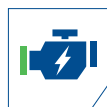
Size Comparison



Compaction Ratio
Up to 3:1



Pressing Force
Up to 3.5 Ton



Motor
1.5kW

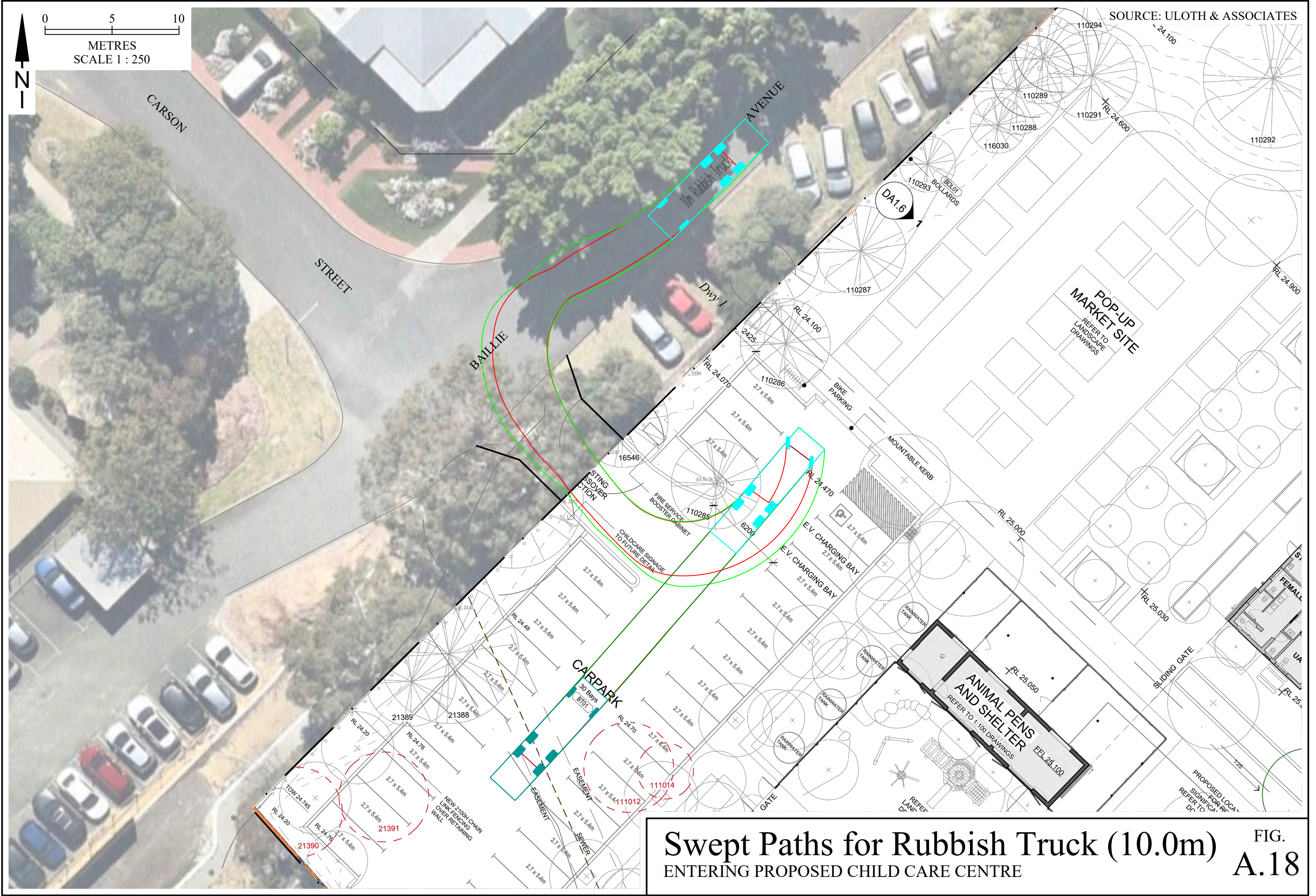
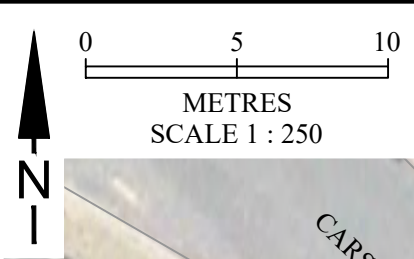


Waste Types
General Waste



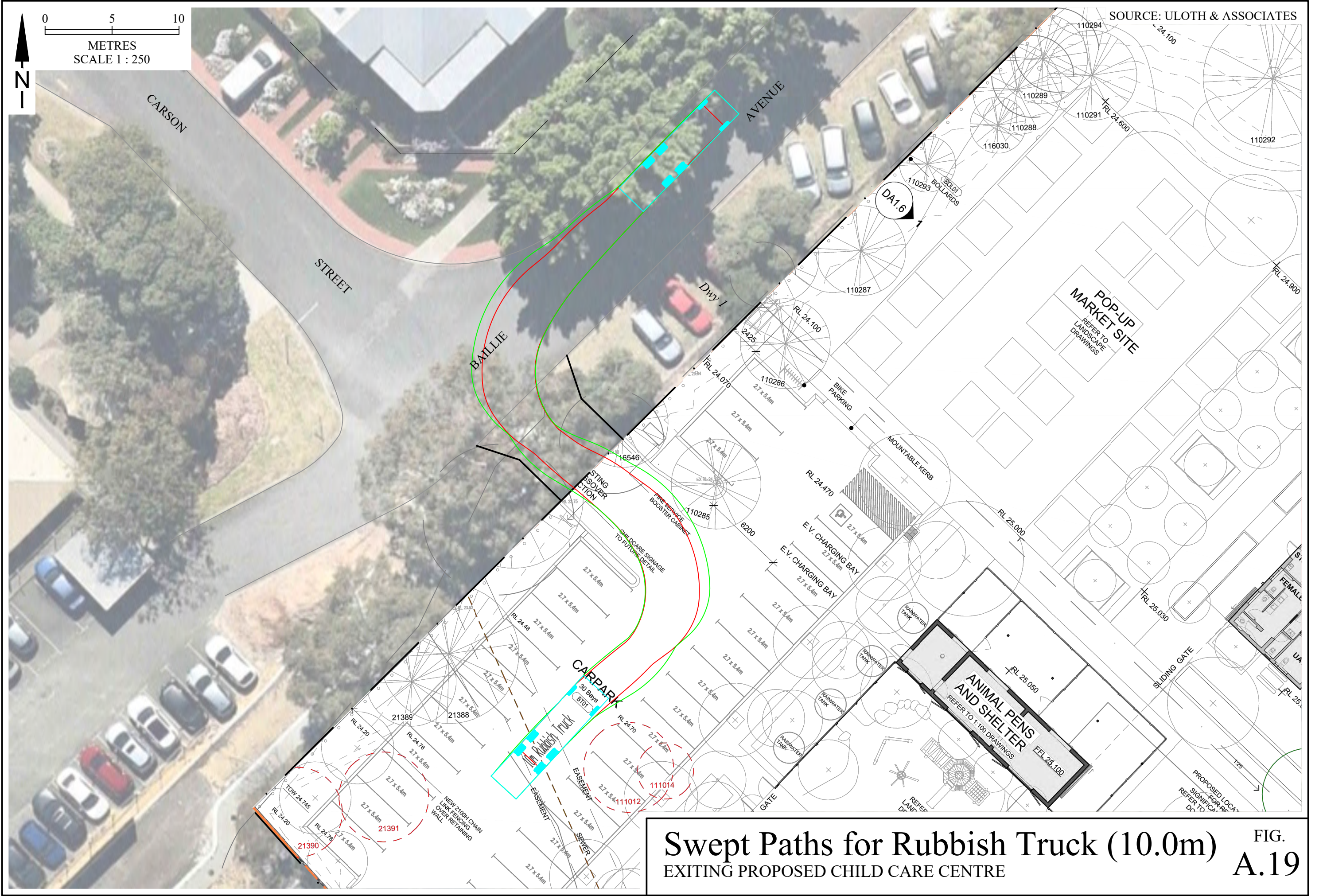
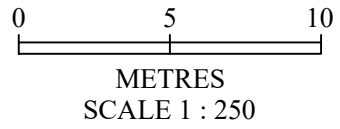
Appendix D. Swept Path





Swept Paths for Rubbish Truck (10.0m)
ENTERING PROPOSED CHILD CARE CENTRE

FIG.
A.18



Swept Paths for Rubbish Truck (10.0m)
EXITING PROPOSED CHILD CARE CENTRE

FIG. **A.19**

0 5 10
METRES
SCALE 1 : 400

Car Park island
to be modified,
as shown.

SITE CARPARK
NOT IN SCOPE

LEASE LINE

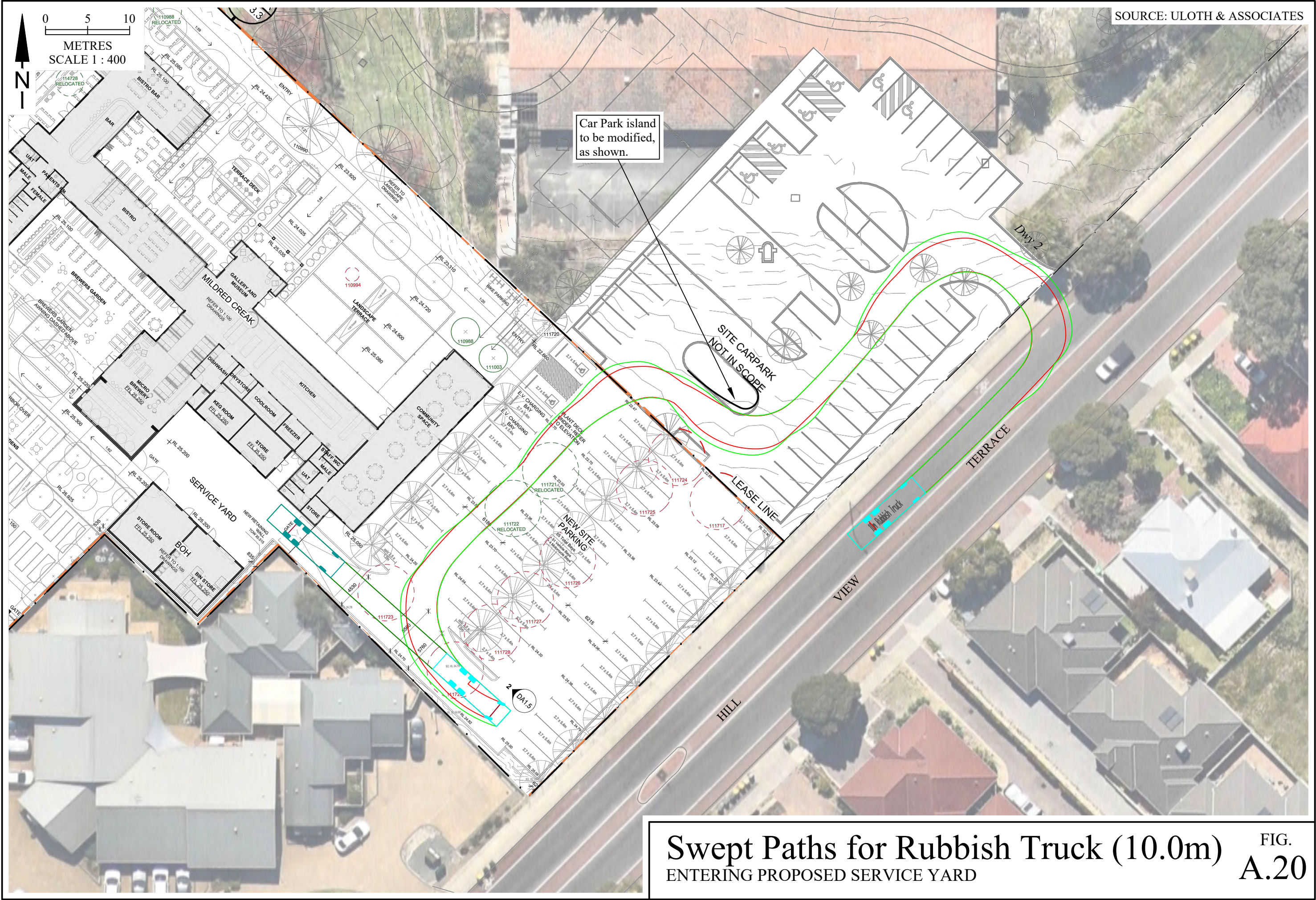
VIEW

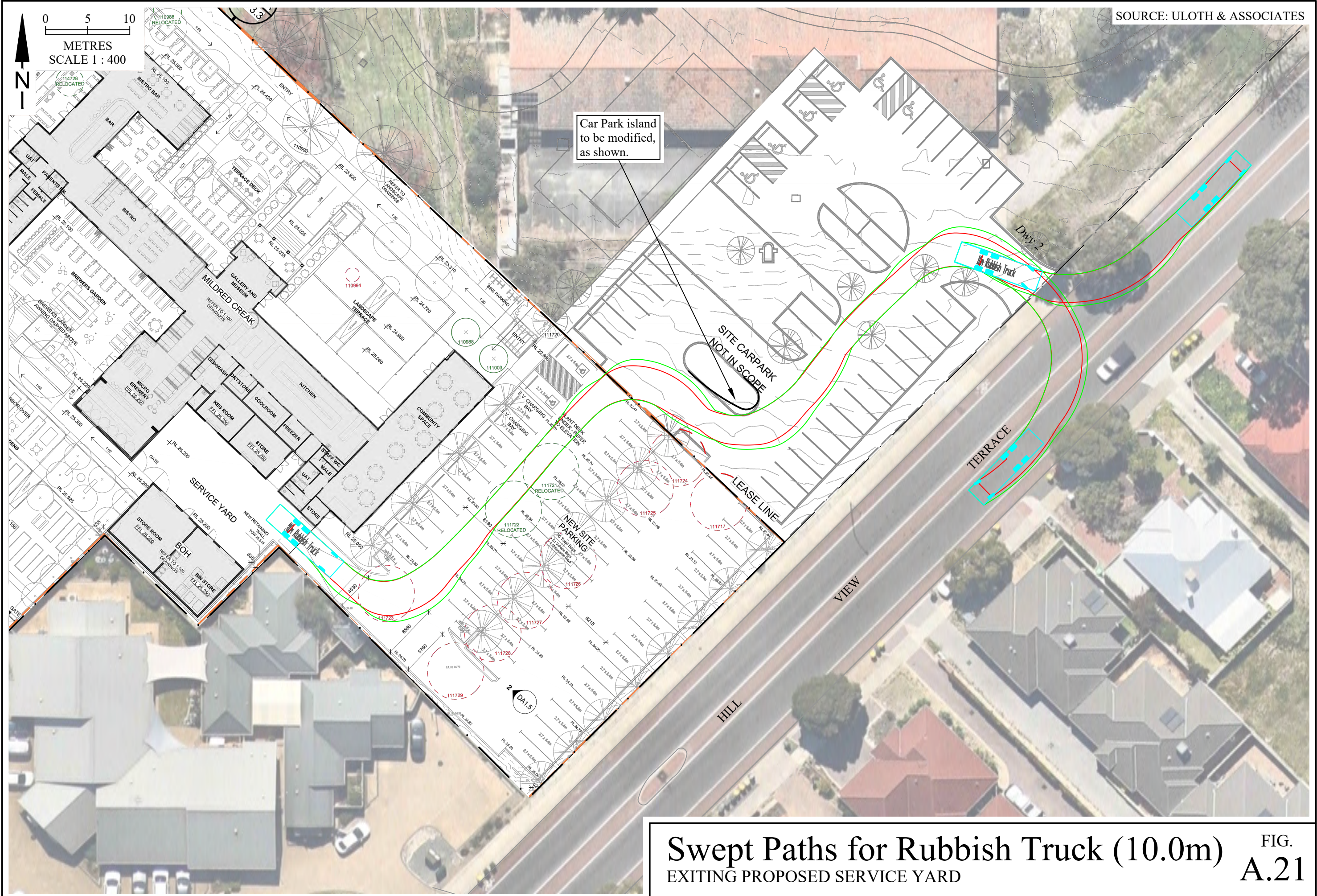
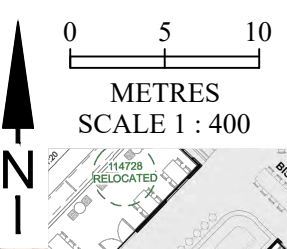
TERRACE

HILL

Swept Paths for Rubbish Truck (10.0m)
ENTERING PROPOSED SERVICE YARD

FIG.
A.20





Car Park island to be modified, as shown.

SITE CARPARK NOT IN SCOPE

LEASE LINE

TERRACE

VIEW

HILL

Dwy 2

Swept Paths for Rubbish Truck (10.0m)
EXITING PROPOSED SERVICE YARD

FIG. A.21

