



Waste Management

Proposed Residential Flat Building and Townhouses

25-27 Warriewood Rd, Warriewood

J & G Knowles & Associates Pty Ltd



About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

T: (02) 9418 3033

F: (02) 9418 3112

E: ttmnsw@ttmgroup.com.au



Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	A. Stamatou	S. Galluzzi	Draft DA Report	27/07/17
2.	A. Stamatou	S. Galluzzi	DA Report	31/07/17
3.	E. Atkins	A. Stamatou	Revised DA Report	14/08/18
4.	E. Atkins	A. Stamatou	Amendments to townhouse bin storage	10/09/18
5.	E. Atkins		Markup revision	14/09/18

Contents

1	Introduction.....	6
1.1.	Background	6
1.2.	Site Location.....	7
1.3.	Development Refuse Profile.....	7
2.	Residential Apartments Refuse Management	9
2.1.	Refuse Disposal, Transfer and Storage Process	9
2.2.	Alternate Refuse Disposal	10
2.3.	Specialised Waste Disposal	10
3.	Residential Townhouse Refuse Management	11
3.1.	Refuse Disposal, Transfer and Storage Process	11
3.2.	Alternate Refuse Disposal	11
3.3.	Specialised Waste Disposal	12
4.	Refuse Collections.....	13
4.1.	Refuse Vehicle Access and Loading	13
4.1.1.	Residential Apartments	13
4.1.2.	Townhouse Dwellings.....	13
4.2.	Collection Frequency.....	13
4.2.1.	Residential Apartments	13
4.2.2.	Townhouse Dwellings/Dwelling House	13
5.	Recommended Operational Requirements	14
5.1.	On-going Management	14
5.2.	Waste Minimisation	14
5.2.1.	Education	14
5.2.2.	Monitoring and Review	14
5.2.3.	Signage	15
5.3.	Safety	15
5.4.	Operational Equipment Summary	15
5.5.	Controls.....	16
5.5.1.	Apartment Refuse Rooms	16
5.5.2.	Apartment Temporary Bin Store	16

5.5.3. Storm Water Prevention and Litter Reduction	18
5.5.4. Ventilation	18
Appendix A Detailed Information.....	19
A.1 –Refuse Calculations	20
A.2 – Apartments - Ground Floor Plan	21
A.3 – Townhouse Wheelie Bin Storage Locations	22
A.4 – Bulky Waste Storage Location	23
Appendix B Systems and Specifications	24
B.1 Apartment Bins	25
B.2 Waste Reduction Equipment	26
B.3 Waste Transfer Equipment (if required)	27
Appendix C Refuse Signage.....	28

Table Index

Table 1.1: Apartment Refuse Summary	7
Table 1.2: Townhouse Refuse Summary	8
Table 5.1: Operations Equipment	15
Table A.1: Residential Generation Rates	17
Table A.2: Residential Apartment Calculations	17
Table A.3: Residential Townhouse Calculations	17

Figure Index

Figure 1.1: Site location	7
---------------------------------	---

Glossary

In this waste management plan unless the subject matter otherwise indicates, a term has the following meaning:

TERM	DEFINITION
Baler	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by wire ties and strapping.
Bin Storage Area	An enclosed area designated for storing on-site refuse bins or a refuse compactor within the property.
Bulk Bin	A galvanised or steel bin receptacle that is greater than 360L in capacity generally ranging from 1.0m ³ to 4.50m ³ used for the storage of refuse that is used for on-site refuse collection.
Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 0.66m ³ to 1.10m ³ used for the storage of refuse that is used for on-site refuse collection.
Collection Point	The identified position where refuse bins are storage for collection and emptying. the collection point could be the bin storage area for bulk bins.
Compactor	A machine for compressing waste into disposable or reusable containers.
Composter	A container/machine used for composting specific food scraps.
Green Waste	All vegetated organic material such as small branches leaves and grass clippings, tree and shrub pruning, plants and flowers.
Liquid Waste	Non-hazardous liquid waste generated by commercial premises that is supposed to be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
Mobile Garbage Bins	Plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste	The component of the waste stream liable to become putrid. Usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling	All material suitable re-manufacture or re-use; Glass bottles and jars – PET, HDPE and PVC plastics; aluminum aerosol and steel cans; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines.
Refuse	Material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse Bin	A receptacle (mobile garbage (wheelie) bin, bulk MGB or bulk bin) used for the storage of refuse.
Refuse Compactor	A receptacle that provides for the mechanical compaction and temporary storage of refuse, to reduce bin numbers and collection frequency.
Refuse Collection Vehicle (RCV)	A vehicle that is specifically designed for collecting and emptying refuse bins and refuse compactors.
Refuse Storage Room	An area identified for storing on-site mobile garbage bins or bulk bins within the property.
Regulated Waste	Waste generated from non-domestic sources.
Waste General	Refuse material with the exclusion of recycling, green waste, hazardous waste special waste,

liquid waste and restricted solid waste.

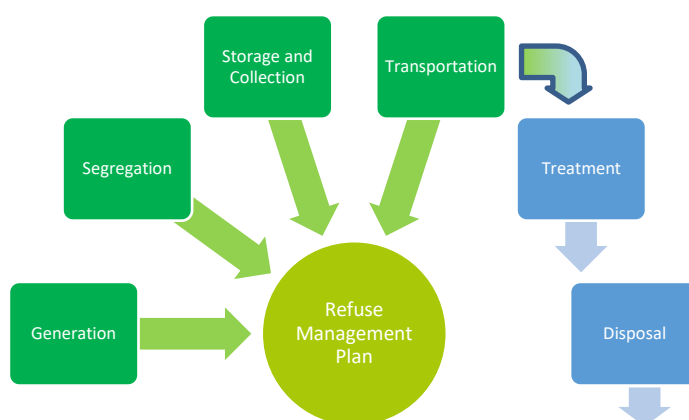
1 Introduction

1.1. Background

TTM Consulting has been engaged by J & G Knowles & Associates Pty Ltd to prepare a refuse management plan to support the proposed residential development at 25-27 Warriewood Road, Warriewood. The assessment and associated recommendations include:

- identification of refuse streams produced within the development
- estimated volumes generated
- appropriate segregation methods for each refuse stream
- internal systems and equipment requirements
- refuse storage, collection and loading facilities design
- refuse collection vehicle (RCV) access and manoeuvrability
- operational and safety requirements
- pollution prevention
- waste minimisation

Refuse Life Cycle



Information contained within the report is based on local government authority requirements related to the Northern Beaches Council and the associated waste services department. The recommendations provided are designed to comply with Council's Waste Management Guidelines.

The recommendations for refuse collection relate to the operational phase of the development only and do not include additional requirements during or after demolition or construction phases.

1.2. Site Location

The site is located at 25-27 Warriewood Road, Warriewood, as shown in Figure 1.1. It has road frontages to Warriewood Road, Macpherson Street and Hill Street. The site is currently undeveloped and will contain a new road with a proposed name of Lorikeet Grove.

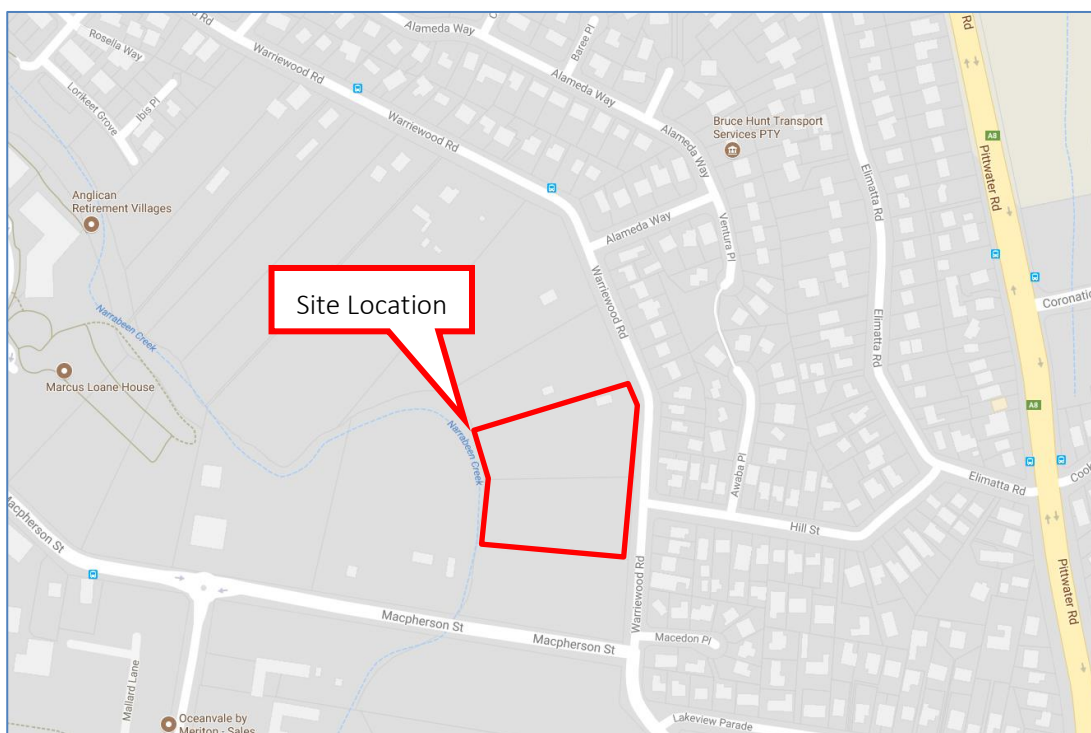


Figure 1.1: Site location

1.3. Development Refuse Profile

The development consists of eleven townhouses (with three adaptable townhouses), 32 apartments built over three levels and two basement levels and a separate standalone townhouse which, for the purposes of this report, is deemed a “dwelling house”. The tables below summarise the residential refuse profiles.

Table 1.1: Apartment Refuse Summary

<i>Description</i>	<i># Units</i>	<i>Generated Waste (L/week)</i>	<i>Generated Recycling (L/week)</i>
1 Bedroom	4	480	480
2 Bedroom	22	2640	2640
3 Bedroom	6	720	720
Total	32	3,840	3,840

Table 1.2: Townhouse Refuse Summary

<i>Description</i>	<i># Units</i>	<i>Generated Waste (L/week)</i>	<i>Generated Recycling (L/fortnight)</i>
Townhouse	11	2,640	2,640
Total	11	2,640	2,640

The dwelling house will utilise 240L wheelie bins to be collected by Council via kerbside collection.

Detailed calculations and equipment requirements are based on the unit schedules and associated waste generation rates as outlined in the detailed information in Appendix A.1. Site drawings can be found in Appendix A.2 and Appendix A.3.

2. Residential Apartments Refuse Management

The residential apartments waste streams may consist of the following:

- General waste
- Recycling (glass, aluminium, paper/cardboard)
- Green waste
- Organic waste
- Hazardous/e-waste

Waste should be collected in a dedicated receptacle within the allotted space and bagged or wrapped prior to disposal. Operationally, general waste should be bagged, weigh approximately 3kg or less and not exceed the dimensions of the receptacles.

Recycling must not be bagged and should be collected in a dedicated receptacle to ensure separation from the waste material.

Green waste is not typically produced from multi-unit dwellings other than from surrounding building landscaped areas and is removed by a designated maintenance contractor.

Hard waste may be stored in the refuse area prior to collection.

Space is allocated within the basement for temporary storage and collection of **bulky goods** (refer Appendix A.4). Residents must coordinate all bulky goods movements and storage with building management. It is prohibited for residents to stack or pile bulky goods items on the footpaths, in driveways, or in carparks. Unless otherwise instructed by council, charitable organisations may be contacted by building management as a mode for collections. Additional storage space can be utilised within the temporary bin store.

2.1. Refuse Disposal, Transfer and Storage Process

Residents will be supplied with adequate space for storage of one full day accumulation of refuse within each unit. Residents will dispose their refuse directly into the appropriately labelled 240L wheelie bins in the refuse rooms. Bins will be shared between residents.

The refuse rooms are located on the ground floor within each tower adjacent to the lifts (refer to Appendix A.2). Spare bins for change over will be stored within the temporary bin store or storage rooms within the basement and will be exchanged by building management as required (possibly daily). The refuse rooms have capacity to store the required number of bins for each day, with sufficient volume capacity for two days (see Appendix A.1).

All refuse bins will be transferred by a building manager to the temporary bin store located on the north eastern property boundary for collection by Council. Further detail is outlined in section 4. There are a number of safe and appropriate bin carting routes that may be utilised by building management, each of

which do not have stairs, steep gradients and depending on the number of bins to be transferred on any one day, a vehicle and trailer may be utilised to move a larger number of bins. Otherwise bins will be walked throughout the site between the refuse room and temporary bin store as required.

2.2. Alternate Refuse Disposal

An alternate refuse disposal method, such as composting for **organic waste**, may be used to reduce the total amount of general waste produced. Apartment style equipment is available for use where practical and space allows. Composting should be arranged with the building manager/caretaker and further information can be found in Appendix B.2.

2.3. Specialised Waste Disposal

The building manager will assist in the coordination of disposal or recycling of electronic, liquid waste and any hazardous materials such as paint/chemicals where required, due to safety and environmental reasons. Alternatively residents should be directed to Council's website for more details for appropriate waste and disposal.

3. Residential Townhouse Refuse Management

The waste streams for the townhouses and dwelling house may consist of the following:

- General waste
- Recycling (glass, aluminium, paper/cardboard etc)
- Green waste
- Organic waste
- Hazardous/e-waste

Waste should be collected in a dedicated receptacle within the allotted space and bagged or wrapped prior to disposal. Operationally, general waste should be bagged and weigh approximately 3kg or less and not exceed the dimensions of the waste receptacles.

Recycling must not be bagged. Recyclables should be collected in a dedicated receptacle to ensure separation from the waste material.

Green waste is typically removed by a designated maintenance contractor.

Hard waste will be collected by Council twice a year from the kerbside. Unless otherwise instructed by Council, charitable organisations may be contacted the residents as a mode for collections. Residents should be directed to Council's website for more details and information on collection items etc.

3.1. Refuse Disposal, Transfer and Storage Process

Residents will be supplied with adequate space for storage of one full day accumulation of refuse within each dwelling. Each townhouse will have their own set of waste and recycling 240L wheelie bins. For the group of 11 townhouses, each will have wheelie bins stored on the southern property boundary fronting Warriewood Road, in a dedicated bin and mail box custom built enclosure (refer Appendix A.3). These enclosures and bins will not be shared and are for the sole use of each townhouse. On or before collection day, residents will take their bins out to the kerbside on Warriewood Road for collection by Council.

The dwelling house will store their wheelie bins within the yard and will place bins on Lorikeet Drive adjacent to the driveway for servicing. This property is deemed similar to a single unit dwelling.

3.2. Alternate Refuse Disposal

An alternate refuse disposal method, such as composting for **organic waste**, may be used to reduce the total amount of general waste produced. Residents should be directed to Council's website for more details.

3.3. Specialised Waste Disposal

Residents will coordinate the disposal or recycling of electronic, liquid waste and any detox such as paint/chemicals where required, due to safety and environmental reasons. Residents should be directed to Council's website for more details for appropriate waste and disposal.

4. Refuse Collections

4.1. Refuse Vehicle Access and Loading

The proposed redevelopment will have vehicle access from Warriewood Drive via Lorikeet Grove. A temporary turn around will be provided until through access is developed along Lorikeet Grove in the future.

4.1.1. Residential Apartments

The temporary bin store is located on the north eastern property boundary. It is proposed that the waste collection vehicle travel along Lorikeet Grove and turn around in the temporary turn around east of the property. The truck will stop in the area lining up with the pram ramp as indicated in Appendix A.2 and the driver will exit the vehicle and collect the bins from the temporary bin store, service the bins and then return them to the bin store.

4.1.2. Townhouse Dwellings

On or before collection day, townhouse residents will take their bins out to the Warriewood Road kerbside for collection by Council. The dwelling house will present their bin to Lorikeet Grove for servicing on the kerb immediately adjacent to their driveway.

4.2. Collection Frequency

4.2.1. Residential Apartments

Refuse bin quantities have been based on collection cycles of two days per week for waste and one day per week for recycling. The building manager or caretaker will consult with council to finalise service days and frequency prior to the time of occupancy.

4.2.2. Townhouse Dwellings/Dwelling House

Refuse bin quantities have been based on collection cycles of one day per week for waste and one day per fortnight for recycling. Council will advise new tenants of the service days.

5. Recommended Operational Requirements

5.1. On-going Management

All refuse equipment movements are to be managed by the residents (townhouses) and building manager/caretaker or cleaners (apartments) at all times. The building manager/cleaner duties include, but are not limited to the following:

- organising, maintaining and cleaning the general and recycled waste holding areas (frequency will depend on waste generation and will be determined based upon building operation);
- transporting and decanting (recycling) of bins as required;
- organising both garbage and recycled waste pick-ups as required;
- cleaning and exchanging all bins;
- organising and coordinating bulky goods collections;
- ensuring site safety for residents, children, visitors, staff and contractors;
- abiding by all relevant OH&S legislation, regulations, and guidelines;
- assessing any manual handling risks and preparing a manual handling control plan for waste and bin transfers;
- providing to staff/contractors' equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities;
- continual monitoring of equipment uses and scheduling to ensure best operational outcomes.

***NOTE:** As waste volumes may vary according to the development occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation.*

5.2. Waste Minimisation

Waste minimisation is an important part of any site operation. At a minimum, the following should be implemented.

5.2.1. Education

On-going education and signage is important to ensure people continue to use the facilities as originally intended. Leasing arrangements should contain direction on expectations and waste management services.

5.2.2. Monitoring and Review

Regular monitoring and inspections of waste and related equipment and facilities from the development should be conducted by building management/designated staff for maintenance and sustainability, including but not limited to bin volumes, refuse storage areas and stormwater management.

Waste minimisation requires regular reviewing to ensure operational sustainability of refuse volumes and equipment and economic feasibility. It is recommended that refuse weights and movements are recorded and reviewed. An external review is usually conducted 12 to 18 months after the implementation of the plan.

5.2.3. Signage

All receptacles and bins should have adequate signage and labelling, which is clear and easy to read. Standard signage should be provided in and around waste collection and storage areas (See *Appendix D*).

5.3. Safety

Note that transferring refuse bins is considered a hazardous manual task and therefore contractors must ensure a full risk assessment of equipment, surfaces and related gradients is complete. The contractor must provide procedural documentation to appropriate personnel prior to delivery of equipment and occupancy of the development.

5.4. Operational Equipment Summary

Equipment required or suitable for use as part of the operational phase of the development is outlined in Table 5.1 below. It should be noted that all collection receptacles and bins should be branded with the appropriate stickers and the use of the Mobius loop or similar identifying recycling equipment.

Table 5.1: Operations Equipment

Component	Description	Quantity	Notes
Residential	<i>Residential Apartments Recycling Bins</i>	16	240L MGB's
	<i>Residential Apartments Waste Bins</i>	16	
	<i>Residential Townhouse Recycling Bins</i>	12	
	<i>Residential Townhouse Waste Bins</i>	12	
	<i>Green Waste</i>	7	
		<i>Organics- Receptacles for use in centralised composting / worm farm or electronic composting bins.</i>	Supplied as and if required See Appendix B.2

5.5. Controls

5.5.1. Apartment Refuse Rooms

The waste rooms will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make them user-friendly and safe areas:

- Fire rated and ventilated in accordance with the National Construction Code- Building Code of Australia
- Have adequate artificial lighting
- Will accommodate Council's allocated number of waste and recycling containers plus have room for additional storage of waste bins;
- Has a minimum wall height of 1600mm;
- Be roofed with a minimum ceiling height of 2100mm throughout and clear of any obstructions;
- Has a practical layout, be free of obstructions and have only 90 degree angle corners;
- Graded and drained to a Sydney Water approved drainage system;
- Be serviced by an easily accessible water tap which will not obstruct aisles, access ways and placement of bins;
- Be cement rendered and coved at the floor and wall intersections;
- Be clear of any service and utilities infrastructure and related activities;
- Be capable of being kept clean and tidy at all times;
- Is further than 3m from any dwelling openings;
- Doors will be:
 - A minimum of 1200mm wide;
 - Able to be latched in an open position;
 - Unobstructed by any locks and security devices;
 - Openable in an outward direction.

5.5.2. Apartment Temporary Bin Store

The temporary bin store for the housing of spare bins and full bins ready for servicing will be located within 6.5m of the north eastern property boundary. It will have the following features:

- Will accommodate Council's allocated number of waste and recycling containers plus have room for additional storage of waste bins;
- Has a minimum wall height of 1600mm;

- Be roofed with a minimum ceiling height of 2100mm throughout and clear of any obstructions;
- Be screened from the street frontage in a manner that improves the streetscape appearance of the facility;
- Has a practical layout, be free of obstructions and have only 90 degree angle corners;
- Graded and drained to a Sydney Water approved drainage system;
- Be serviced by an easily accessible water tap which will not obstruct aisles, access ways and placement of bins;
- Be cement rendered and coved at the floor and wall intersections;
- Be clear of any service and utilities infrastructure and related activities;
- Be capable of being kept clean and tidy at all times;
- Be architecturally designed to reflect the design style of the proposed building and not detract from the visual amenity and streetscape character in the immediate area;
- Be in accordance with the Building Code of Australia, relevant Australian Standards and legislation in Chapter xii of the Waste Management Guidelines;
- Will be at street level and permit easy, direct and convenient access for Council and Council's waste contractors;
- Clear of any obstructions and security devices;
- Incorporated entirely within the site boundary and not placed on any Council land;
- Is further than 3m from any dwelling openings;
- Clear of any entry points to stormwater systems and prevent waste water from entering any stormwater system;
- Doors will be:
 - A minimum of 1200mm wide;
 - Able to be latched in an open position;
 - Unobstructed by any locks and security devices;
 - Openable in an outward direction.

The pathway and access from the temporary bin storage area and collection point will be:

- Solid, concrete, continuous, non-slip and clear of any obstructions and steps;
- A maximum ramp gradient of 1 in 8;

- Hazard free and not via a pathway with vehicular traffic;
- A minimum width of 1200mm.

5.5.3. Storm Water Prevention and Litter Reduction

Designated personnel/ cleaners are responsible for on-site storm water pollution and litter reduction. To limit the impact on the environment and site, the following measures should be considered:

- providing adequate signage to promote litter control
- providing sufficient refuse bins in appropriate areas
- preventing unauthorised entry to waste areas
- monitoring waste and prevent waste overflow
- promoting best practices for waste minimisation
- installing litter traps in car parks for any unwanted discharge

5.5.4. Ventilation

Natural (unobstructed, permanent openings direct to external air no less than one-twentieth (1/20) of floor area) or mechanical ventilation (minimum rate of 100 L/s and 5L/m² exhausting rate) must be provided to waste storage areas unless refrigerated below four degrees Celsius.

Appendix A Detailed Information

A.1 –Refuse Calculations

The generation rates used for the calculation of refuse produced uses rates recommended by Council's Waste Management Guidelines.

Waste and recycling volumes indicated do not include compaction.

Table A.1: Residential Generation Rates

Unit Type	Waste	Recycling
Townhouse	240 Litres/unit/week	240 Litres/unit/fortnight
1, 2 & 3 Bedroom Apartment	120 Litres/unit/week	120 Litres/unit/week

Each townhouse will be provided with their own set of waste and recycling wheelie bins which residents will manage themselves.

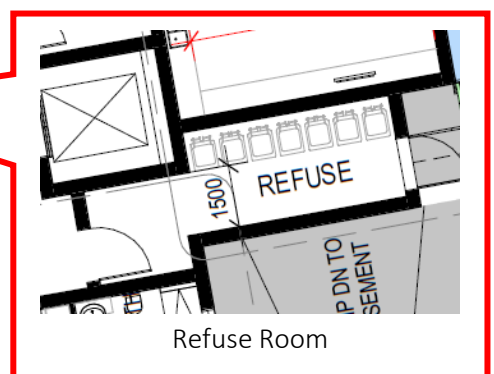
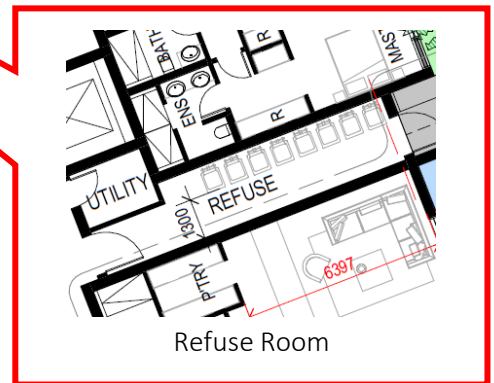
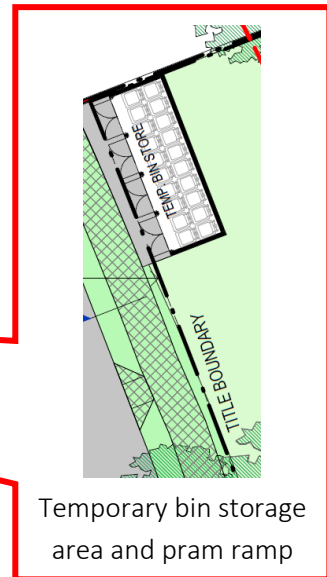
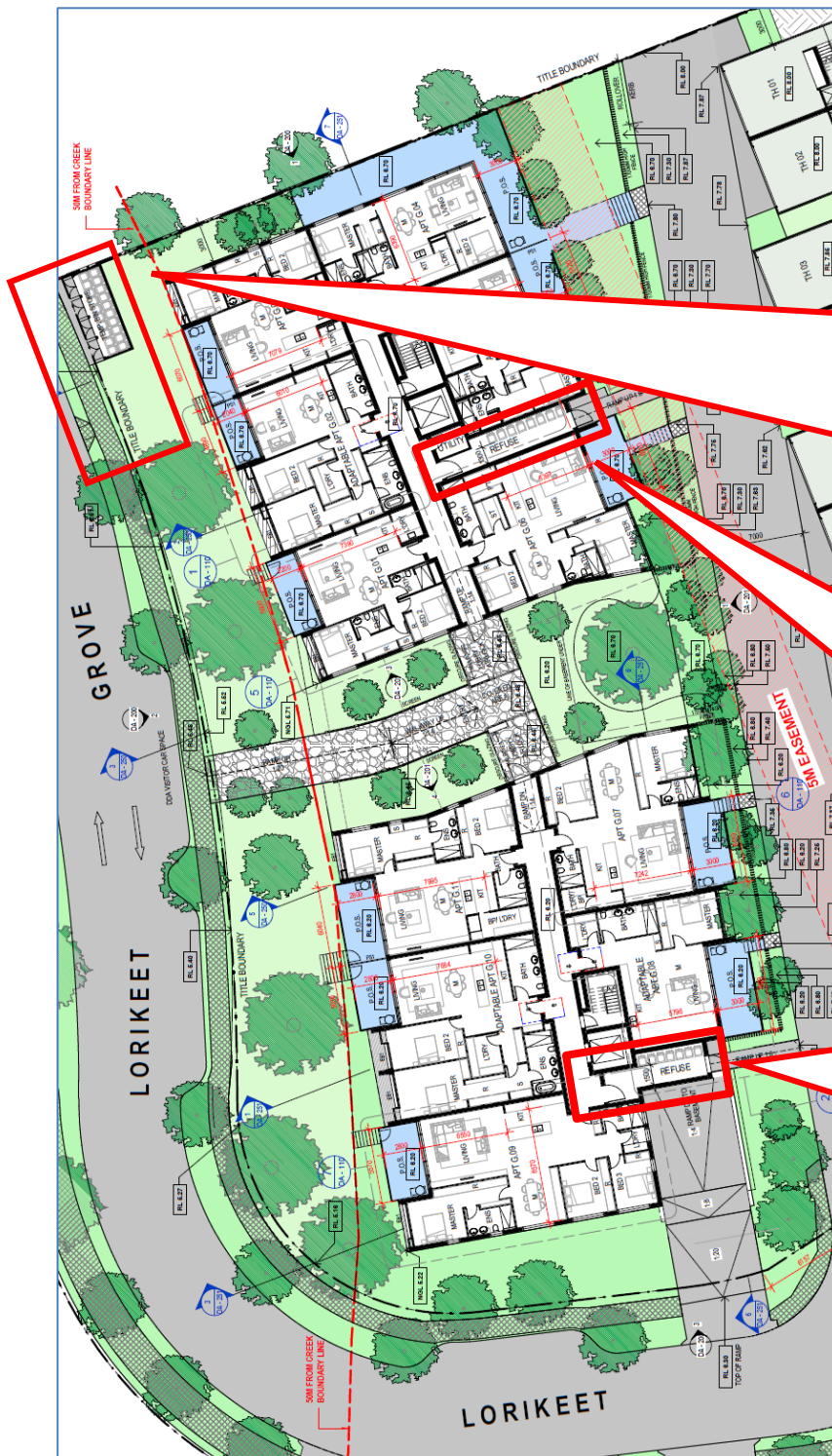
Residents from the apartments will be required to share wheelie bins located within the ground floor refuse storage rooms. The bins outlined below will be split across the two refuse rooms.

Table A.2: Residential Apartment Calculations

Description	# Units	Generated Waste (L/week)	Generated Recycling (L/week)
1 Bedroom	4	480	480
2 Bedroom	22	2640	2640
3 Bedroom	6	720	720
Total	32	3840	3840
Refuse per day	-	549	549
Collections and Equipment	Bin Size (L)	240	240
	Collections per Week	2	1
	No Bins Required	8	16
	Raw Bin Area	16 m ²	
	Refuse Room		
	Bulky Goods Store	6 m ²	

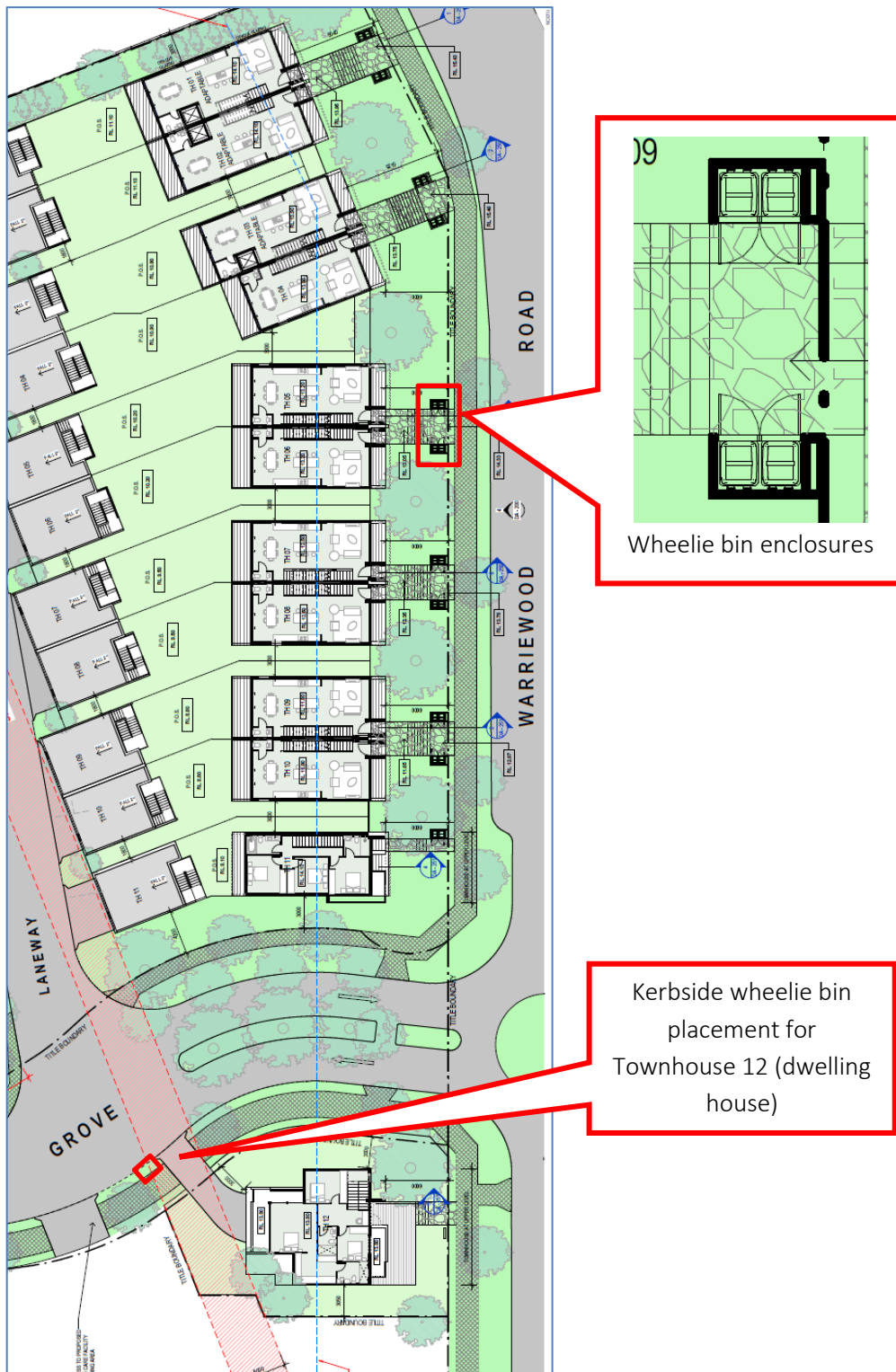
Landscaped Open Space – there is approximately 1377m² of landscaped open space so therefore 7 x 240L wheelie bins will be provided and stored strategically throughout the site.

A.2 – Apartments - Ground Floor Plan



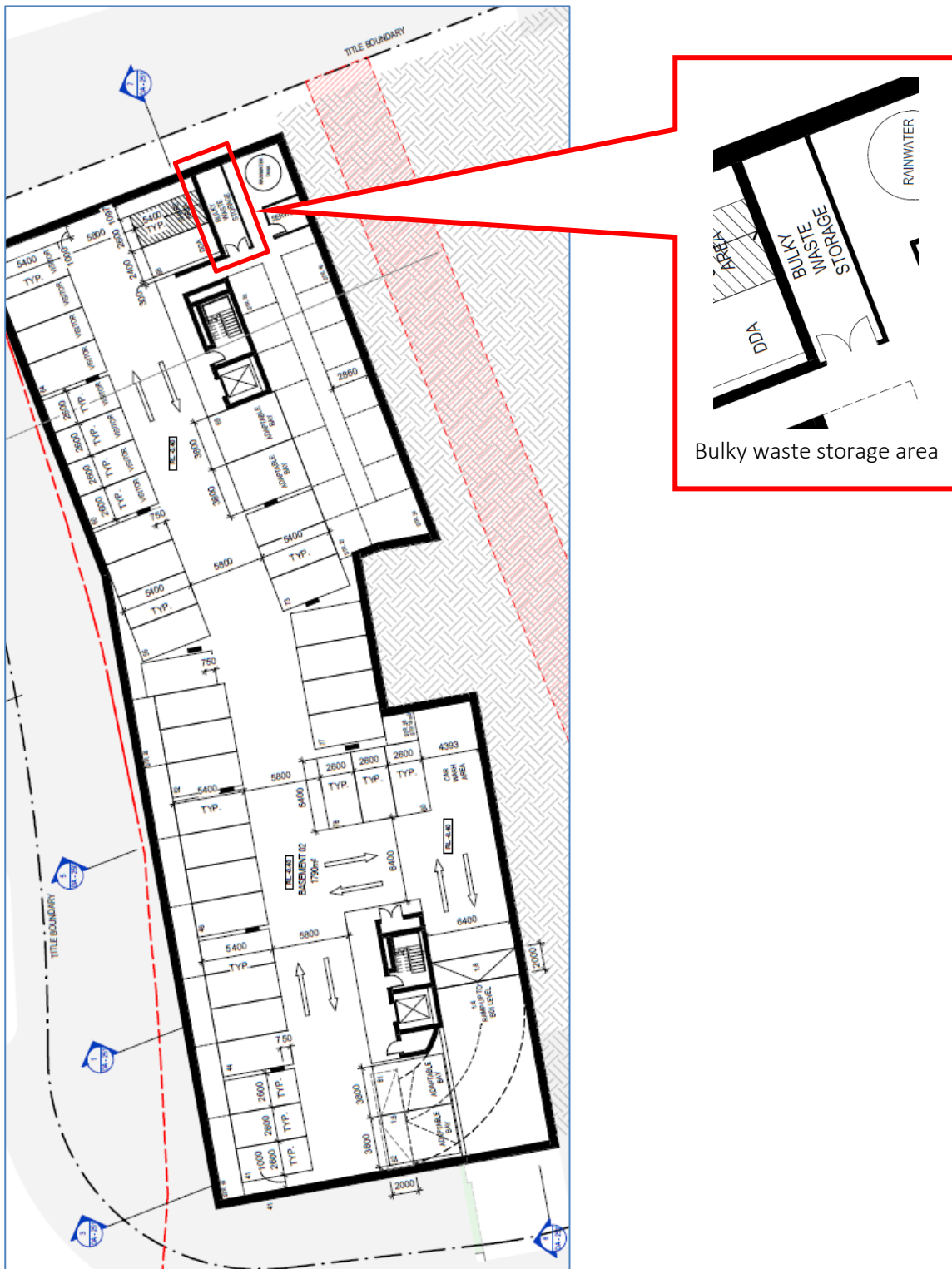
Source: VIA Architects- drawing no DA - 100, rev H, dated 03/09/18- Proposed Apartment Ground Floor Plan/Townhouse Garage Lower Level Floor

A.3 – Townhouse Wheelie Bin Storage Locations



Source: VIA Architects- drawing no DA - 102, rev G, dated 03/09/18- Proposed Apartment Second Floor Plan/Townhouse Mid-Level Floor Plan

A.4 – Bulky Waste Storage Location

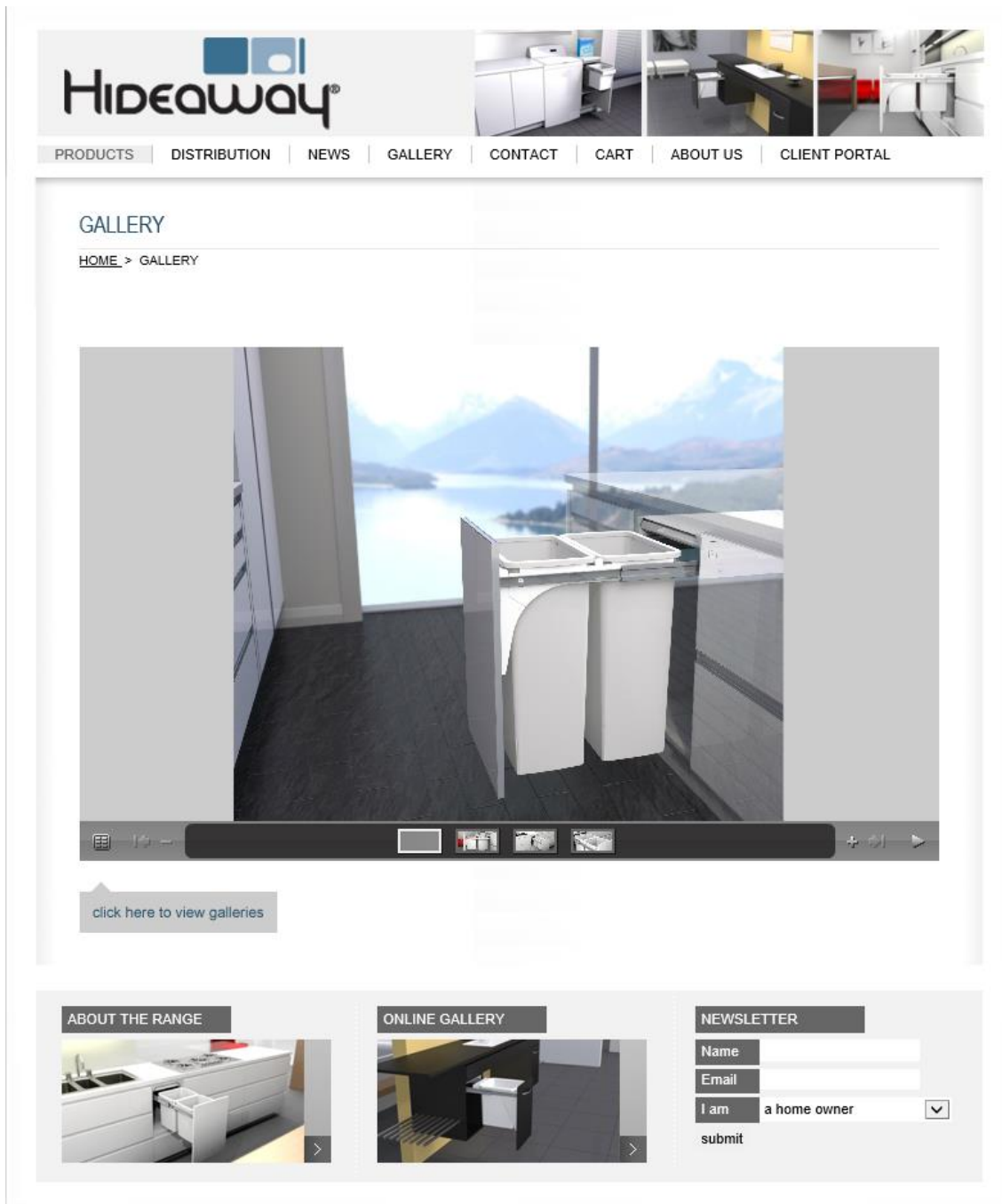


Source: VIA Architects- drawing no DA - 106, rev F, dated 01/08/18- Proposed Basement 02 Plan

Appendix B Systems and Specifications

B.1 Apartment Bins

Typical Apartment receptacles for refuse storage



B.2 Waste Reduction Equipment

Residential Composting

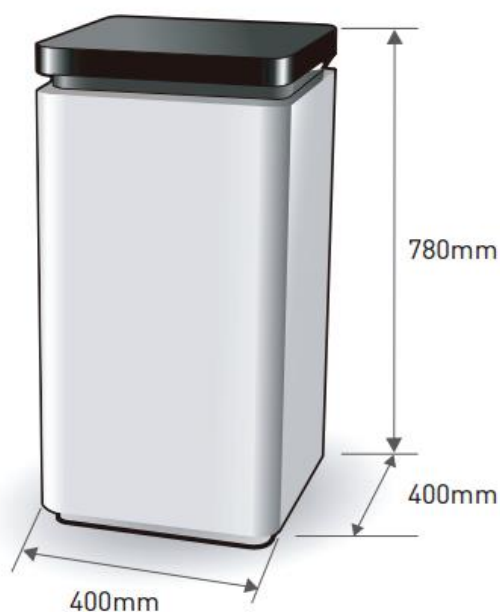


Product Specifications

Decomposition Method	Fermentation by microorganisms
Decomposition Capacity	2 metric tonnes per year* (4 kg per day*)
Rating	220–240 V 50/60 Hz – 1.1 A
Decomposition Time	24 hrs
Operating Temperature	0C and 40C.**
Deodorisation Method	Nano-Filter system
Maximum Power	210 W
Power Usage	Average 1 kwh per day
Weight	21 kgs
External Dimensions	w 400 mm d 400 mm h 780 mm

* Food Waste Handling Capacity – based on an optimal operating environment.

** Ambient temperature range of area where unit may be installed.



See Link below for product video

<http://www.closedloop.com.au/domestic-composter>

B.3 Waste Transfer Equipment (if required)

Tel: 1300 188 098
AUSTRALIA
sales@alitrak.com.au

Watch Us On

Effective Sept 2014

Replaces All Previous Versions

TT-600 Ultra Terrain Tug

Click here to see the video

Made in Europe

Ultra Terrain Off-Road Use

The TT-600 is a three wheeled ZERO emission electric drive pedestrian Tug ergonomically designed to easily move trailers, caravans, wagons on all surfaces.

The Tug Trak reduces the manual effort required to perform repetitive tasks thereby improving productivity and reducing the chance of work related injuries.

The TT-600 has a pulling and pushing capacity of 2000kgs and a loading capacity of 300kgs.

With 2 x 75 A/H traction batteries, it has an autonomy of up to 8 hours of continuous operation.

The Large 405mm diameter driving wheels ensure maximum traction even on rough surfaces

For slippery surfaces, ballast can be added easily.

- ✓ Adjustable height handle to suit all operators
- ✓ Folding handle to reduce transport size and costs.
- ✓ The compact size of the TT-600 means that it is easily manoeuvred and can be used in small spaces.
- ✓ The design allows for pushing or pulling and comes with a standard centre connection post
- ✓ With the addition of the optional front pin attachment, trailer ball accessory or the waste container connector, the TT-600 can handle many tasks.
- ✓ Other options are solid, non-marking tires and Flashing Safety Lights.

24/7 Sales & Service Agent

SPACEPAC INDUSTRIES Pty. Ltd.

1300 763 444

www.spacepac.com.au

PERFORMANCE	
Pulling Capacity	2 Tonnes (On castors) 8 Tonnes (On rails)
Loading capacity	300 kg
Motor Power	24V 600W
Pulling speed	max 4.5 km/h
Pushing speed	max 2.5 km/h
Battery charger	On board
Battery Autonomy	approx 8 hrs

DIMENSIONS	
Lead Acid Traction Batteries	2 x 75 AH 24 Volt @ 5 h
2000 Charge-Life-cycle. Optional Gel Batteries 1000 Charge-Life-cycle	
Battery recharging time	5 to 8 hours
Parking brake	Electromagnetic with the possibility of release
Machine Weight	130 kg
Driving Wheels Diameter	405 x 100 mm
Part Number	# TT-600 (see page 2 for options)

Tel: 1300 188 098
AUSTRALIA
sales@alitrak.com.au

Watch Us On

Effective Sept 2014

Replaces All Previous Versions

Alitrak TT600 - Options

TT600 complete with optional Front Hook and Anti Dumping Wheels & 240 litre bin attachment and

TT600 complete with optional Non Marking Wheels and optional Front Hook and Anti Dumping Wheels

TT600 complete with optional Front Hook and Anti Dumping Wheels & 240 litre bin attachment and

TT600 complete with optional ballast holder and ballasts

Pictures	Part Number	Descriptions
#	TT600	Tug Trak 600
#	TTRAR	Options ... Front Hook and Anti Dumping Wheels
#	TTHTC	Options ... Hook for 240 & 120 Litre Wheelie Bins
#	BAGM84A	Options ... Battery Gel (2 pieces)
#	TTNMW	Options ... Non Marking Wheels
#	TTOLOR	Options ... Operation Light
#	TTTRBM	Options ... Trailer Mount and Ball - Centre Mount
#	TTBH-600	Options ... BALLAST HOLDER (SET2) FOR TT600
#	TTBAL	Options ... BALLAST (SET2) FOR TT600/TT900 (2x7kg)14kg

Tel: 1300 188 098
AUSTRALIA
sales@alitrak.com.au

Watch Us On

Effective Sept 2014

Replaces All Previous Versions



Appendix C Refuse Signage

Refuse Signage Resource

Gold Coast City Council recommended. Free signage is available from the Qld Government site using the link below.

http://www.ehp.qld.gov.au/waste/recycling/awareness_raising_materials_for_public_place_recycling.html

Example bin or wall signage



Example Public Place Signage



Example Oil Storage



Example Safety Signage

Safety Signs are required for refuse discharge and storage rooms / areas and must comply with Australian standards “AS 1319 Safety signs for the occupational environment”. Additional state or local government requirements may also apply. Following are examples of typical signs used around a waste storage area. It should be noted however that an assessment must be completed by a qualified fire and safety consultant, prior to occupancy, to determine the correct signage to be used.

Fire Management



Refuse Room Management

Do not overfill bin



Lid must be closed

