Waste Management Plan

Prepared for: Meriton Apartments

Project Site: 131-138 Killeaton Street St Ives NSW

Date of Issue: 8th December 2010 rev1

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1. INTRODUCTION

Wastech Services Pty Ltd was commissioned by commissioned by Meriton Apartments to prepare a waste and recycling plan associated with a proposed development to be located at 131-138 Killeaton Street St Ives New South Wales.

The project consists of:

- Six (6) Residential Apartment Buildings incorporating;
- 57 Residential Units to Building A
- 72 Residential Units to Building B
- 28 Residential Units to Building C
- 81 Residential Units to Building D
- 36 Residential Units to Building E
- 24 Residential Units to Building F

Scope: Wastech Services will review the building layout drawings and apartment details and provide a Waste Management Plan including the following:

- Calculation of weekly waste and recyclable volumes
- Provide recommendations for compaction, storage and transportation of waste and recyclables within the building
- Highlight relevant design issues that may affect the handling and movement of Waste and Recyclables within the development
- Include technical brochures and drawings for recommended equipment
- Provide recommendation for collection vehicle type
- Reference collection companies and/or council collection/disposal services
- Provide a bound, hard copy and electronic version of the report

All recommendations and equipment shall be in compliance with council codes, BCA, Australian Standards, and statutory requirements.

The results of the above analyses are outlined in the following sections.

2. SUMMARY

- Residents will be responsible for disposing of bagged garbage into the garbage chutes
- Residents will separate recyclable waste into paper/cardboard and containers for disposal into crates at each apartment level
- The building manager will collect recycling crates from each apartment level for emptying into the 240 litre paper/cardboard and container recycling collection bins located in the carpark level refuse rooms
- The building manager will be responsible for monitoring garbage bin levels ensuring clean empty bins are available to receive waste from the chutes
- The building manager will be responsible for transferring all full bins for collection from the refuse rooms to the collection point and return to the refuse rooms upon completion of collection
- All garbage and recycling waste collections shall be performed weekly by Ku-ring-gai Council. Collections shall be conducted at the carpark level loading dock with entry off Killeaton Street

3. WASTE MANAGEMENT PLAN

This waste management plan is based on the following conditions

3.1 Inclusions

- On-going use of the premises. Does not include demolition or construction stages.
- Figures and calculations are based on drawings and information supplied by Meriton Apartments.
- Waste volume figures are estimates only and will be influenced by the tenant, resident and operator's disposition toward waste disposal and recycling, and by the development's occupancy rate. Refer to the enclosed tables for rates and assumptions.

3.2 Exclusions

- Hard rubbish and green/garden wastes. Disposal shall be arranged by the building manager via appropriate contractors.

3.3 REFUSE ROOM DIMENSIONS

The residential refuse rooms, as shown on drawings DA 15 rev B and DA 16 rev B, are sufficient to accommodate the garbage equipment and bins specified within this report.

The bin holding room/collection zone at the loading dock collection point, as shown on drawing DA 16 rev B, is sufficient to accommodate the quantity of bins presented for collection.

BUILDING A REFUSE ROOM DIMENSIONS				
Bin Type	Length (mm)	Width (mm)	Quantity	Area Required (m²)
660 litre	1370	850	4	4.66
240 litre	585	730	30	12.81
		(above figures do not allow for bin movements)		
Ecopack compactor over 660 litre bin			1	2.50
		TOTAL AREA REQUIRED		**19.97**
		TOTAL AREA PROVIDED		**27.80**

BUILDING B REFUSE ROOM DIMENSIONS				
Bin Type	Length (mm)	Width (mm)	Quantity	Area Required (m²)
660 litre	1370	850	5	5.82
240 litre	585	730	36	15.37
		(above figures do not allow for bin movements)		
Ecopack compactor over 660 litre bin			1	2.50
		TOTAL AREA REQUIRED		**23.70**
		TOTAL AREA PROVIDED		**29.70**

BUILDING C REFUSE ROOM DIMENSIONS				
Bin Type	Length (mm)	Width (mm)	Quantity	Area Required (m²)
660 litre	1370	850	2	2.33
240 litre	585	730	14	5.98
		(above figures do not allow for bin movements)		
Ecopack compactor over 660 litre bin			1	2.50
		TOTAL AREA REQUIRED		**10.81**
		TOTAL AREA PROVIDED		**39.20**

BUILDING D REFUSE ROOM DIMENSIONS					
Bin Type		Length (mm)	Width (mm)	Quantity	Area Required (m²)
660	litre	1370	850	5	5.82
240	litre	585	730	42	17.94
			(above figures do not allow for bin movements)		
	Ecopack compactor over 660 litre bin			1	2.50
			TOTAL AREA REQUIRED		**26.26**
			TOTAL AREA PROVIDED		**37.70**

BUILDING E REFUSE ROOM DIMENSIONS					
Bin Type		Length (mm)	Width (mm)	Quantity	Area Required (m²)
660	litre	1370	850	3	3.49
240	litre	585	730	18	7.69
			(above figures do not allow for bin movements)		
	Ecopack compactor over 660 litre bin			1	2.50
			TOTAL AREA REQUIRED		**13.68**
			TOTAL AREA PROVIDED		**27.10**

BUILDING F REFUSE ROOM DIMENSIONS					
Bin Type		Length (mm)	Width (mm)	Quantity	Area Required (m²)
660	litre	1370	850	2	2.33
240	litre	585	730	12	5.12
			(above figures do not allow for bin movements)		
	Ecopack compactor over 660 litre bin			1	2.50
			TOTAL AREA REQUIRED		**9.95**
			TOTAL AREA PROVIDED		**27.80**

BIN HOLDING ROOM / COLLECTION ZONE DIMENSIONS					
Bin Type		Length (mm)	Width (mm)	Quantity	Area Required (m²)
660	litre	1370	850	16	18.63
240	litre	585	730	152	64.91
			(above figures do not allow for bin movements)		
			TOTAL AREA REQUIRED		**83.54**
			TOTAL AREA PROVIDED		**114.00**

4. GENERATED WASTE VOLUME ESTIMATE

The enclosed waste estimates, expressed in uncompacted cubic metres per week, are summarised as follows;

Refer to the enclosed waste generation calculations for further detail.

RESIDENTIAL WASTE	Garbage	Paper/Cardboard Recycling	Container Recycling
Building A Residential Apartments	6.84	3.42	3.42
Building B Residential Apartments	8.64	4.32	4.32
Building C Residential Apartments	3.36	1.68	1.68
Building D Residential Apartments	9.72	4.86	4.86
Building E Residential Apartments	4.32	2.16	2.16
Building F Residential Apartments	2.88	1.44	1.44
Total (m^3/wk uncompacted)	**35.76**	**17.88**	**17.88**
Bin	660 litre bins	240 litre bins	240 litre bins

5. RESIDENTIAL WASTE MANAGEMENT

The following is recommended:

5.1 Waste Streams

Residential waste shall be sorted on-site by the residents into the following streams and associated bins:

- Garbage;
- Paper/Cardboard Recycling; and
- Container Recycling (PET, aluminium, steel, HDPE)

5.2 Residential Garbage Disposal

Residential apartments shall be furnished with plastic lined under bench storage bins, with a minimum capacity of 15 litres, for the temporary holding of garbage waste. Residents shall transfer bagged garbage to the garbage chutes for disposal. Each chute shall serve all apartment levels and discharge into a compactor with 660 litre bin at the carpark level refuse rooms. The building manager shall replace full bins with clean, empty ones as required.

5.3 Residential Recyclable Disposal

Residents shall transfer recyclables into the 120 or 240 litre bins located within the chute airlock at each apartment level for disposal. Cardboard shall be flattened and containers rinsed and cleaned prior to disposal.

Residential apartments shall be furnished with under bench storage bins for the temporary holding of recyclable waste with a minimum capacity of 10 litres. Residents shall sort recyclables into paper/cardboard and containers for disposal into crates located within the chute air lock / loading room at each apartment level. Residents shall flatten cardboard and rinse and clean containers prior to disposal.

The building manager shall collect crates, as required, from each apartment level and transfer recyclables to the 240 litre paper/cardboard and container recycling collection bins located in the carpark level refuse rooms. Note: recycling items must be separated into paper/cardboard and recyclable containers as per council requirements.

5.4 Residential Garbage & Recycling Collection

The building manager shall make 240 and 660 litre bin transfers between the refuse rooms and the bin store room/holding zone in building C at carpark level. The building manager shall prepare bins for collection and coordinate with collection vehicle arrivals so that bins do not impede vehicle access into the loading dock or carpark entry at building C. Full bins only are to be transferred to the bin store room/bin holding zone on day of collection, utilising a bin trailer/bin tug or similar, and returned to the refuse rooms upon completion of collection.

Weekly garbage and recycling collections are envisaged for all buildings.

The collection of waste and recycling bins is to be performed by Ku-ring-gai Council, to be confirmed by Meriton Apartments, from the designated collection point at the carpark level loading dock with entry off Killeaton Street. All collections shall be performed in accordance with local law requirements. The collection contractor shall transfer bins for collection from the bin store room/holding zone to the collection vehicle and return emptied bins to the bin store room/holding zone upon completion of collection.

The minimum overhead clearance height for a rear lift garbage collection truck is 2.5m. An overhead clearance height of 2.8m is provided at the carpark level loading dock and for the collection vehicle path of travel.

Attached drawings SP1 and SP2, provided by Transport and Traffic Planning Associates, and DA 16 rev B provided by Meriton Apartments, confirms sufficient area is provided for the collection vehicle turning circle and swept path from Killeaton Street to the loading dock collection point within the carpark level of building C.

6. RESIDENTIAL WASTE HANDLING EQUIPMENT

The following waste handling equipment is recommended:

Garbage Chute: 530mm diameter galvanised steel or Smoothubes® chute serving all apartment levels, as supplied by Wastech Engineering (or equivalent).

Quantity required five (5); one per building

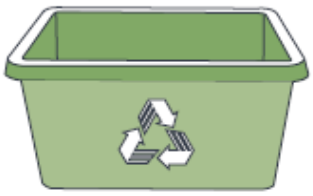
Garbage Compactor*:* Automated EcoPack garbage-chute compactor to suit discharge into a single 660 litre bin, as supplied by Wastech Services (or equivalent).

Quantity required = five (5); one per building

Note: the Ecopack compactor does not compact waste into the collection bin. All compaction forces are contained within the compactor itself with waste then deposited into the collection bin below. Ku-Ring-Gai Council policy does not allow for compaction of garbage waste directly into collection bins. See attached diagram indicating compaction method for the Ecopack compactor.

Crates

Bin Type	50L Crate	70L Crate	90L Crate
Height	320 mm	395 mm	420 mm
Length	575 mm	575 mm	450 mm
Width	445 mm	445 mm	450 mm



* Crate type to be confirmed by building management. Minimum 1 crate per apartment level per building for paper/cardboard disposal and 1 crate per apartment level per building for container recycling collection. Crates to be emptied into 240 litre collection bins by the building manager. Crates are to be used for recyclables collection at the apartment levels to prevent less than full bins being transferred to the collection point. The building manager shall systematically empty recyclables into the 240 collection bins so that full bins only are presented for collection.

6.1 Residential Waste Calculations

Building A - 131-138 Killeaton Street St Ives		
GARBAGE		
Weekly Garbage Volume (Uncompacted)	6.84	cubic metres
Weekly Garbage Volume (Compacted 3:1)	2.28	cubic metres
Bin Type	660	litre
Frequency of collection	1	per week
Bins required for collection (volume / bin capacity)	3	
Spare Bins required	1	
Garbage Total bins required	4	

PAPER / CARDBOARD RECYCLING		
Weekly Paper/Cardboard Volume	3.42	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	15	
Paper/Cardboard Total bins required	15	

CONTAINER RECYCLING		
Weekly Container Volume	3.42	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	15	
Container Total bins required	15	

Building B - 131-138 Killeaton Street St Ives		
GARBAGE		
Weekly Garbage Volume (Uncompacted)	8.64	cubic metres
Weekly Garbage Volume (Compacted 3:1)	2.88	cubic metres
Bin Type	660	litre
Frequency of collection	1	per week
Bins required for collection (volume / bin capacity)	4	
Spare Bins required	1	
Garbage Total bins required	5	

PAPER / CARDBOARD RECYCLING		
Weekly Paper/Cardboard Volume	4.32	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	18	
Paper/Cardboard Total bins required	18	

CONTAINER RECYCLING		
Weekly Container Volume	4.32	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	18	
Container Total bins required	18	

Building C - 131-138 Killeaton Street St Ives		
GARBAGE		
Weekly Garbage Volume (Uncompacted)	3.36	cubic metres
Weekly Garbage Volume (Compacted 3:1)	1.12	cubic metres
Bin Type	660	litre
Frequency of collection	1	per week
Bins required for collection (volume / bin capacity)	1	
Spare Bins required	1	
Garbage Total bins required	2	

PAPER / CARDBOARD RECYCLING		
Weekly Paper/Cardboard Volume	1.68	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	7	
Paper/Cardboard Total bins required	7	

CONTAINER RECYCLING		
Weekly Container Volume	1.68	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	7	
Container Total bins required	7	

Building D - 131-138 Killeaton Street St Ives		
GARBAGE		
Weekly Garbage Volume (Uncompacted)	9.72	cubic metres
Weekly Garbage Volume (Compacted 3:1)	3.24	cubic metres
Bin Type	660	litre
Frequency of collection	1	per week
Bins required for collection (volume / bin capacity)	4	
Spare Bins required	1	
Garbage Total bins required	5	

PAPER / CARDBOARD RECYCLING		
Weekly Paper/Cardboard Volume	4.86	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	21	
Paper/Cardboard Total bins required	21	

CONTAINER RECYCLING		
Weekly Container Volume	4.86	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	21	
Container Total bins required	21	

Building E - 131-138 Killeaton Street St Ives		
GARBAGE		
Weekly Garbage Volume (Uncompacted)	4.32	cubic metres
Weekly Garbage Volume (Compacted 3:1)	1.44	cubic metres
Bin Type	660	litre
Frequency of collection	1	per week
Bins required for collection (volume / bin capacity)	2	
Spare Bins required	1	
Garbage Total bins required	3	

PAPER / CARDBOARD RECYCLING		
Weekly Paper/Cardboard Volume	2.16	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	9	
Paper/Cardboard Total bins required	9	

CONTAINER RECYCLING		
Weekly Container Volume	2.16	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	9	
Container Total bins required	9	

Building F - 131-138 Killeaton Street St Ives		
GARBAGE		
Weekly Garbage Volume (Uncompacted)	2.88	cubic metres
Weekly Garbage Volume (Compacted 3:1)	0.96	cubic metres
Bin Type	660	litre
Frequency of collection	1	per week
Bins required for collection (volume / bin capacity)	2	
Spare Bins required	1	
Garbage Total bins required	3	

PAPER / CARDBOARD RECYCLING		
Weekly Paper/Cardboard Volume	1.44	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	6	
Paper/Cardboard Total bins required	6	

CONTAINER RECYCLING		
Weekly Container Volume	1.44	cubic metres
Bin Type	240	litre
Frequency of collection	1	per week
Bins required for collection	6	
Container Total bins required	6	

7. BIN SUMMARY

7.1 Residential Refuse Rooms

Building A Refuse Room

660 litre Garbage bins	3
Spare 660 litre Garbage bins	1
240 litre Paper/Cardboard bins	15
240 litre Container bins	15
TOTAL BINS REQUIRED	**19**

Building B Refuse Room

660 litre Garbage bins	4
Spare 660 litre Garbage bins	1
240 litre Paper/Cardboard bins	18
240 litre Container bins	18
TOTAL BINS REQUIRED	**23**

Building C Refuse Room

660 litre Garbage bins	1
Spare 660 litre Garbage bins	1
240 litre Paper/Cardboard bins	7
240 litre Container bins	7
TOTAL BINS REQUIRED	**16**

Building D Refuse Room

660 litre Garbage bins	4
Spare 660 litre Garbage bins	1
240 litre Paper/Cardboard bins	21
240 litre Container bins	21
TOTAL BINS REQUIRED	**47**

Building E Refuse Room

660 litre Garbage bins	2
Spare 660 litre Garbage bins	1
240 litre Paper/Cardboard bins	9
240 litre Container bins	9
TOTAL BINS REQUIRED	**21**

Building F Refuse Room

660 litre Garbage bins	**2**
Spare 660 litre Garbage bins	**1**
240 litre Paper/Cardboard bins	**6**
240 litre Container bins	**6**
TOTAL BINS REQUIRED	**15**

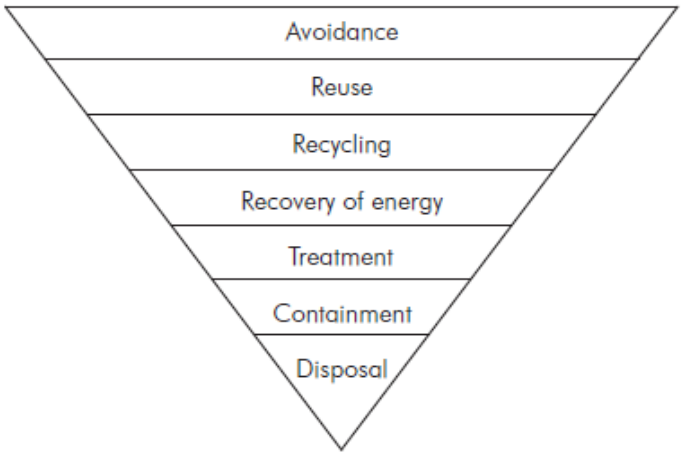
7.2 Bins Presented For Collection

Buildings A B C D E and F

660 litre Garbage bins	**16**
240 litre Paper/Cardboard bins	**76**
240 litre Container bins	**76**
TOTAL BINS PRESENTED	**168**

8. WASTE MINIMISATION STRATEGIES

The operator (Body Corporate) will be responsible for the education of residential tenants in the practices of waste reduction/minimisation to divert waste from landfill. This will be achieved by the following:



- Document and distribute details of the waste management system that is in place on site to all residents
- Distribution of notices to all residents encouraging waste separation
- All bins to be labelled and colour coded stating types of waste that can be deposited i.e. paper/cardboard bins, container recycling bins, garbage bins
- Residents will be provided with a manual, upon residency, detailing items that can be disposed of via the garbage chute in accordance with the manufacturers recommendations
- Any future change to regulatory requirements or to the developments' waste generation rates will require the operator to conduct a waste audit and revise the waste management system that is in place accordingly

9. ADDITIONAL WASTE MANAGEMENT INFORMATION

As bins would be "wheeled" throughout the building, any ramps would require a maximum gradient of 1:14 to meet regulatory requirements. Steps are not permitted.

Items unsuitable for disposal via garbage or recycling bins would need to be disposed of with the assistance of the building manager. This would include: large, heavy, and liquid waste items.

To minimise security, vandalism, odour/visual impact, and health/safety issues, the following shall be implemented:

- Transferring waste and shifting bins shall require the minimum possible manual handling. The operator will assess manual handling risks as per regulatory requirements and provide appropriate documentation to the building manager;
- Signage and usage labels for the garbage and recycling bins will be provided by the operator;
- Bin stores will be secure and vermin proof and ventilated in accordance with Australian Standard AS 1668.2;
- A bin wash area comprising hot and cold water taps and floor drain with trap and sewer connection will be located within each bin store;
- The building manager shall keep clean the bin stores, keep bin lids closed and wash bins regularly;
- The operator shall consider providing 660 litre charity/donation bins for the collection of clothing, whitegoods etc to divert waste from landfill. Donation bins would be maintained and collected by the charity organisation;
- Keys to the security gates at the basement entry point, which shall be keyed alike to Ku-Ring-Gai Council's master key, are to be provided to Ku-Ring-Gai council by the operator to ensure the collection vehicle has access to the collection point;
- A designated hard rubbish collection point shall be provided with a minimum footprint of 2m² to each building for residents to place hard rubbish for collection on specified days;
- The building manager will ensure prompt return of empty bins to the refuse rooms once collection has occurred;
- Use of the private road through the development results in indemnity issues for the collection providers. Indemnity resolution is required prior to waste collections being performed on site;
- The Body Corporate of the proposed development shall source and enter into service agreements for waste collection services. The Body Corporate will be responsible for all payments and costs associated with the waste collection service provided by Ku-Ring-Gai Council;
- The building manager shall prepare operational instructions and an operational health and safety procedure for site staff; and
- A traffic management plan and collection-vehicle safe operation procedure shall be prepared by the operator of the development in consultation with Ku-Ring-Gai Council prior to collections being performed on site.

10. CONTACT INFORMATION

Ku-ring-gai Council
818 Pacific Highway, Gordon NSW 2072
Locked Bag 1056, Pymble NSW 2073
Ph: 9424 0000
Fax: 9424 0001
E-mail: kmc@kmc.nsw.gov.au

SITA Environmental Solutions
(private waste collector)
201-205 Newton Road, Wetherill Park, NSW 2164
Ph: 9725 3255

Veolia Environmental Services
(private waste collector)
Cnr Unwin and Shirley Streets, Rosehill NSW 2142
Ph: 132 955

VISY Waste Management Integrated Solutions
(private waste collector)
6 Herbert Place, Smithfield, NSW 2164
Ph: 9794 3188

Electrodrive Pty Ltd
(tug manufacturer)
C/o Wastech Engineering

Eco-Safe Technologies
(odour control equipment supplier)
C/o Wastech Engineering

Wastech Engineering Pty. Ltd.
Waste Equipment Designer & Manufacturer
Valerie Collins
National Sales Executive
33 Wedgewood Road, Hallam VIC 3803
Ph 03 8787 1600
valerie@wastech.com.au

WASTECH SERVICES Pty Ltd.

WASTE ESTIMATE
Residential

Job:	Building A - 131-138 Killeaton Street St Ives		Date:	7-Dec-10
No. OF RESIDENTIAL APARTMENTS	**57**			
Garbage (m^3/week uncompacted):	6.84	(Rate/apartment)[1]:		0.120
Paper/Cardboard Recycling (m^3/week uncompacted):	3.42	(Rate/apartment)[1]:		0.060
Container Recycling (m^3/week uncompacted):	3.42	(Rate/apartment)[1]:		0.060

TOTAL RESIDENTIAL APARTMENT WASTE BLOCK A	
Garbage (m^3/week uncompacted):	**6.84**
Paper/Cardboard Recycling (m^3/week uncompacted):	**3.42**
Container Recycling (m^3/week uncompacted):	**3.42**

COMPACTOR DETAILS (garbage only - via refuse chute)

Bin Size (litres)	Compaction Ratio	No. of Bins under compactor		No. of Bins Filled per Week
660	0.33	1		3.5

COLLECTIONS	**Collections Per Week**	**No. of Bins Collected**
Garbage Disposal	1 per week (660 litre bins)	3.5
Paper/Cardboard Recyc.	1 per week (240 litre bins)	14.3
Container Recyc.	1 per week (240 litre bins)	14.3

References/Notes:

1) Ku-Ring-Gai Council Development Control Plan (Town Centres) 2010

WASTECH SERVICES Pty Ltd.

WASTE ESTIMATE
Residential

Job:	Building B - 131-138 Killeaton Street St Ives		Date:	7-Dec-10
No. OF 1 BEDROOM RESIDENTIAL APARTMENTS	**72**			
Garbage (m^3/week uncompacted):	8.64	(Rate/apartment)[1]:		0.120
Paper/Cardboard Recycling (m^3/week uncompacted):	4.32	(Rate/apartment)[1]:		0.060
Container Recycling (m^3/week uncompacted):	4.32	(Rate/apartment)[1]:		0.060

TOTAL RESIDENTIAL APARTMENT WASTE BLOCK B	
Garbage (m^3/week uncompacted):	**8.64**
Paper/Cardboard Recycling (m^3/week uncompacted):	**4.32**
Container Recycling (m^3/week uncompacted):	**4.32**

COMPACTOR DETAILS (garbage only - via refuse chute)

Bin Size (litres)	Compaction Ratio	No. of Bins in Rotofeed		No. of Bins Filled per Week
660	0.33	1		4.4

COLLECTIONS	**Collections Per Week**	**No. of Bins Collected**
Garbage Disposal	1 per week (660 litre bins)	4.4
Paper/Cardboard Recyc.	1 per week (240 litre bins)	18.0
Container Recyc.	1 per week (240 litre bins)	18.0

References/Notes:

1) Ku-Ring-Gai Council Development Control Plan (Town Centres) 2010

WASTECH SERVICES Pty Ltd.

WASTE ESTIMATE

Residential

Job:	Building C - 131-138 Killeaton Street St Ives		Date: 7-Dec-10
No. OF RESIDENTIAL APARTMENTS	**28**		
Garbage (m^3/week uncompacted):	3.36	(Rate/apartment)[1]:	0.120
Paper/Cardboard Recycling (m^3/week uncompacted):	1.68	(Rate/apartment)[1]:	0.060
Container Recycling (m^3/week uncompacted):	1.68	(Rate/apartment)[1]:	0.060

TOTAL RESIDENTIAL APARTMENT WASTE BLOCK C			
Garbage (m^3/week uncompacted):	**3.36**	-	-
Paper/Cardboard Recycling (m^3/week uncompacted):	**1.68**		
Container Recycling (m^3/week uncompacted):	**1.68**		

COMPACTOR DETAILS (garbage only - via refuse chute)				
Bin Size (litres)	Compaction Ratio	No. of Bins under compactor		No. of Bins Filled per Week
660	0.33	1		1.7

References/Notes:

COLLECTIONS	**Collections Per Week**	**No. of Bins Collected**
Garbage Disposal	1 per week (660 litre bins)	1.7
Paper/Cardboard Recyc.	1 per week (240 litre bins)	7.0
Container Recyc.	1 per week (240 litre bins)	7.0

References/Notes:

1) Ku-Ring-Gai Council Development Control Plan (Town Centres) 2010

WASTE ESTIMATE

Residential

Job:	Building D - 131-138 Killeaton Street St Ives		Date:	7-Dec-10
No. OF 1 BEDROOM RESIDENTIAL APARTMENTS	**81**			
Garbage (m^3/week uncompacted):	9.72	(Rate/apartment)[1]:		0.120
Paper/Cardboard Recycling (m^3/week uncompacted):	4.86	(Rate/apartment)[1]:		0.060
Container Recycling (m^3/week uncompacted):	4.86	(Rate/apartment)[1]:		0.060
-	-	-		
TOTAL RESIDENTIAL APARTMENT WASTE BLOCK D				
Garbage (m^3/week uncompacted):	**9.72**	-		-
Paper/Cardboard Recycling (m^3/week uncompacted):	**4.86**			
Container Recycling (m^3/week uncompacted):	**4.86**			

COMPACTOR DETAILS (garbage only - via refuse chute)				
Bin Size (litres)	Compaction Ratio	No. of Bins under compactor		No. of Bins Filled per Week
660	0.33	1		4.9

References/Notes:

COLLECTIONS	**Collections Per Week**	**No. of Bins Collected**
Garbage Disposal	1 per week (660 litre bins)	4.9
Paper/Cardboard Recyc.	1 per week (240 litre bins)	20.3
Container Recyc.	1 per week (240 litre bins)	20.3

References/Notes:

1) Ku-Ring-Gai Council Development Control Plan (Town Centres) 2010

WASTECH SERVICES Pty Ltd.

WASTE ESTIMATE

Residential

Job:	Building E - 131-138 Killeaton Street St Ives		Date:	7-Dec-10
No. OF RESIDENTIAL APARTMENTS	**36**			
Garbage (m^3/week uncompacted):	4.32	(Rate/apartment)[1]:		0.120
Paper/Cardboard Recycling (m^3/week uncompacted):	2.16	(Rate/apartment)[1]:		0.060
Container Recycling (m^3/week uncompacted):	2.16	(Rate/apartment)[1]:		0.060

TOTAL RESIDENTIAL APARTMENT WASTE BLOCK E	
Garbage (m^3/week uncompacted):	**4.32**
Paper/Cardboard Recycling (m^3/week uncompacted):	**2.16**
Container Recycling (m^3/week uncompacted):	**2.16**

COMPACTOR DETAILS (garbage only - via refuse chute)

Bin Size (litres)	Compaction Ratio	No. of Bins under compactor		No. of Bins Filled per Week
660	0.33	1		2.2

References/Notes:

COLLECTIONS	**Collections Per Week**	**No. of Bins Collected**
Garbage Disposal	1 per week (660 litre bins)	2.2
Paper/Cardboard Recyc.	1 per week (240 litre bins)	9.0
Container Recyc.	1 per week (240 litre bins)	9.0

References/Notes:

1) Ku-Ring-Gai Council Development Control Plan (Town Centres) 2010

WASTE ESTIMATE

Residential

Job:	Building F - 131-138 Killeaton Street St Ives		Date:	7-Dec-10
No. OF RESIDENTIAL APARTMENTS	**24**			
Garbage (m^3/week uncompacted):	2.88	(Rate/apartment)[1]:		0.120
Paper/Cardboard Recycling (m^3/week uncompacted):	1.44	(Rate/apartment)[1]:		0.060
Container Recycling (m^3/week uncompacted):	1.44	(Rate/apartment)[1]:		0.060

TOTAL RESIDENTIAL APARTMENT WASTE BLOCK F	
Garbage (m^3/week uncompacted):	**2.88**
Paper/Cardboard Recycling (m^3/week uncompacted):	**1.44**
Container Recycling (m^3/week uncompacted):	**1.44**

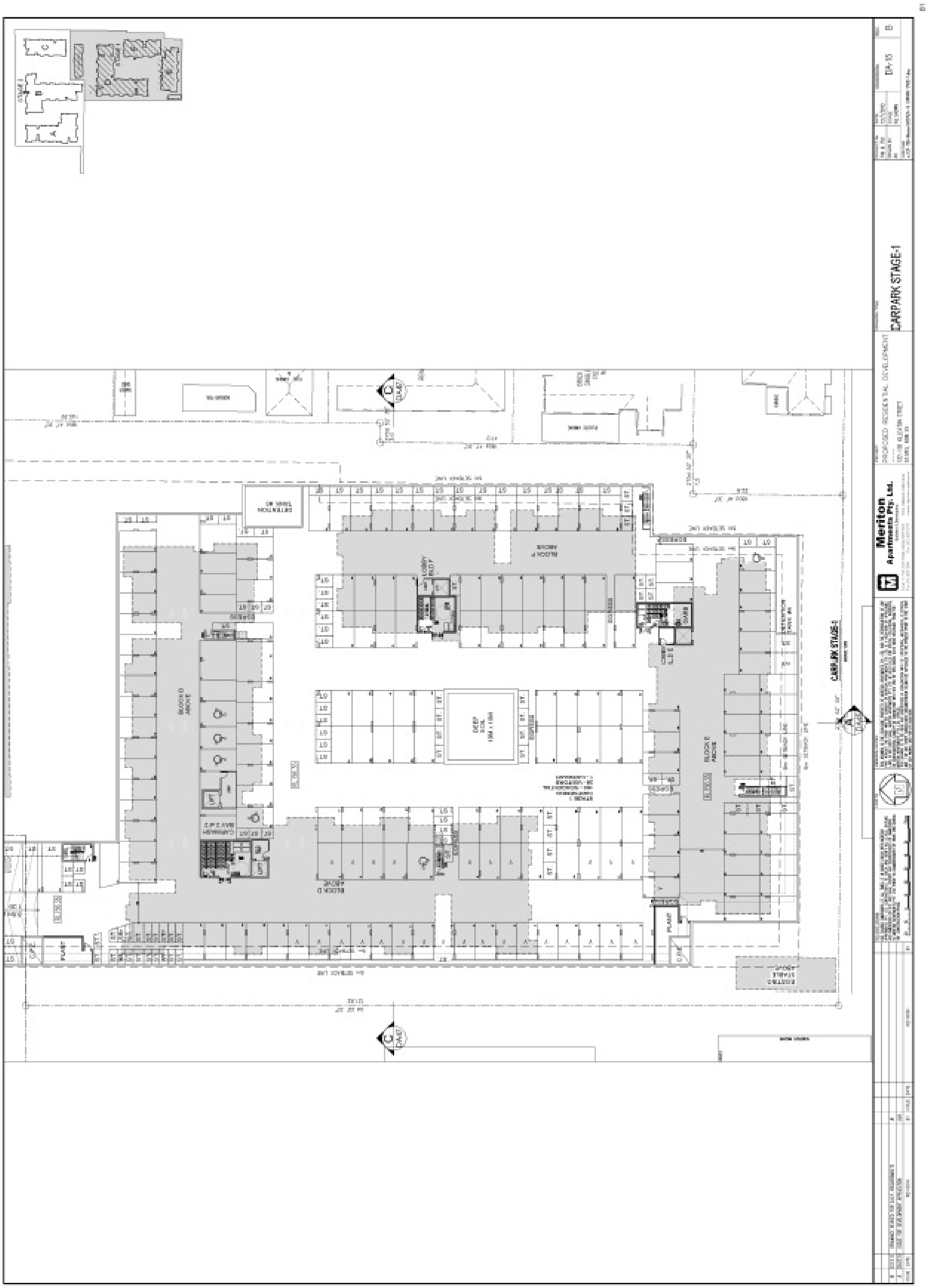
COMPACTOR DETAILS (garbage only - via refuse chute)				
Bin Size (litres)	Compaction Ratio	No. of Bins under compactor		No. of Bins Filled per Week
660	0.33	1		1.5

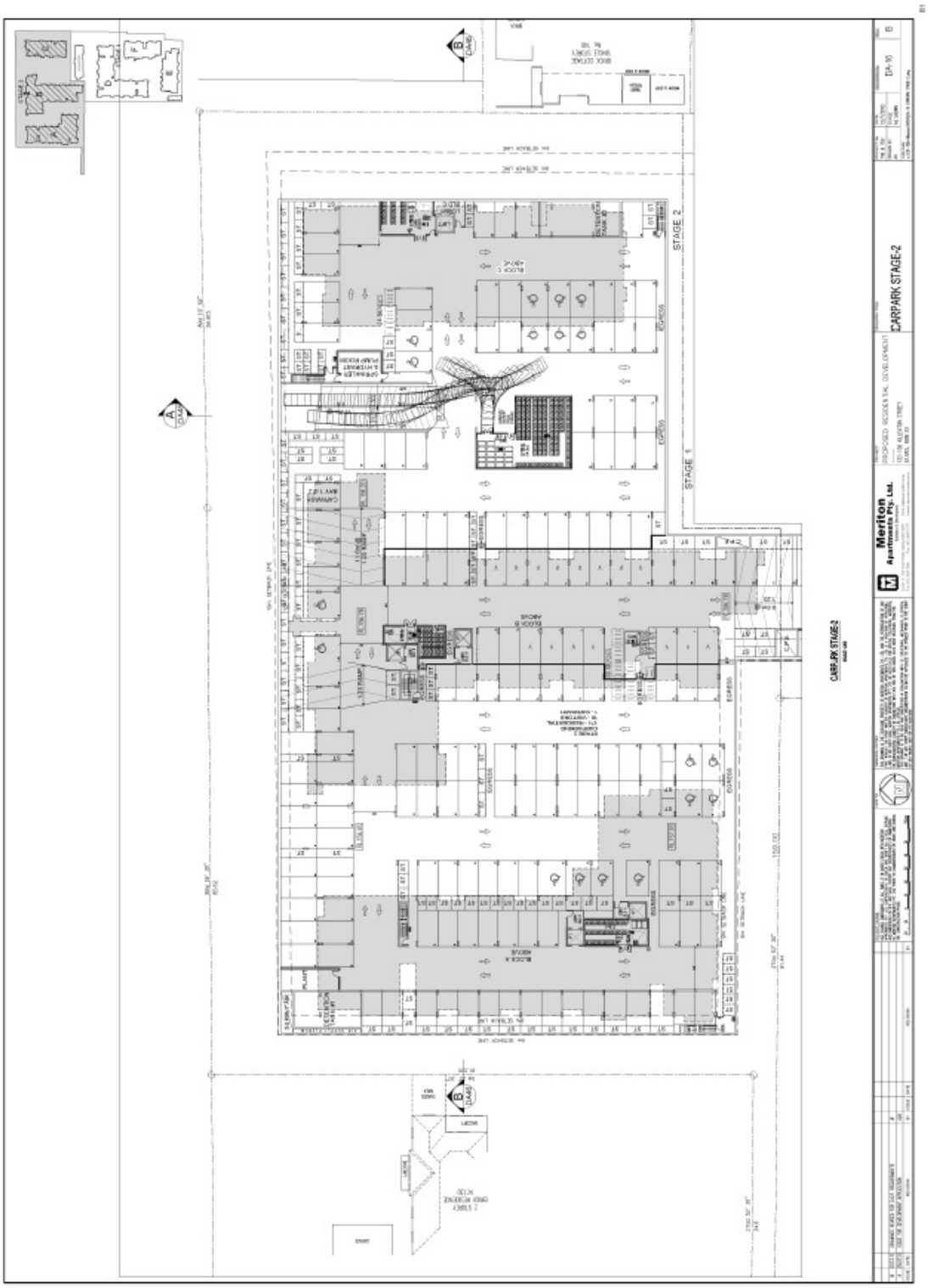
References/Notes:

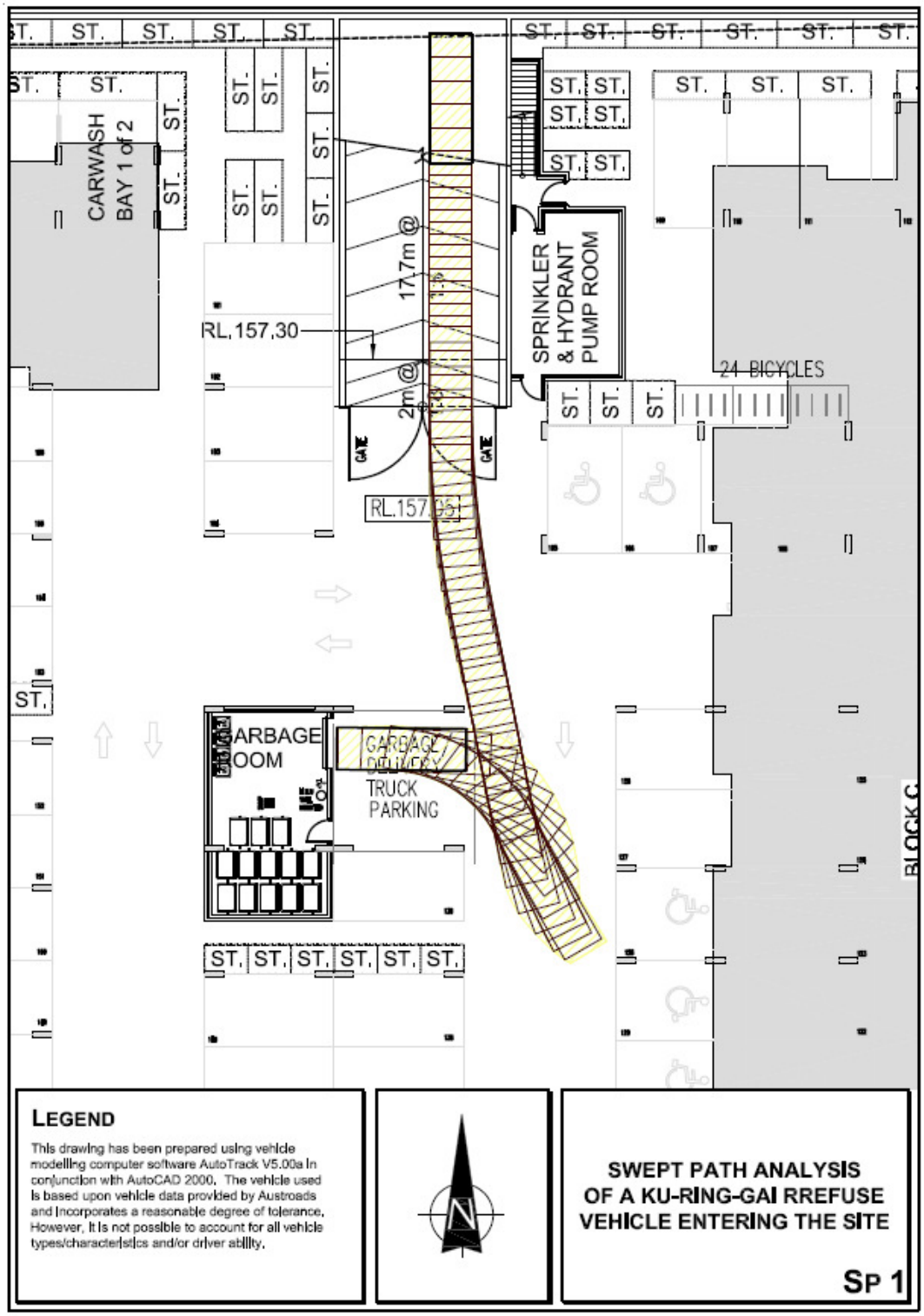
COLLECTIONS	**Collections Per Week**	**No. of Bins Collected**
Garbage Disposal	1 per week (660 litre bins)	1.5
Paper/Cardboard Recyc.	1 per week (240 litre bins)	6.0
Container Recyc.	1 per week (240 litre bins)	6.0

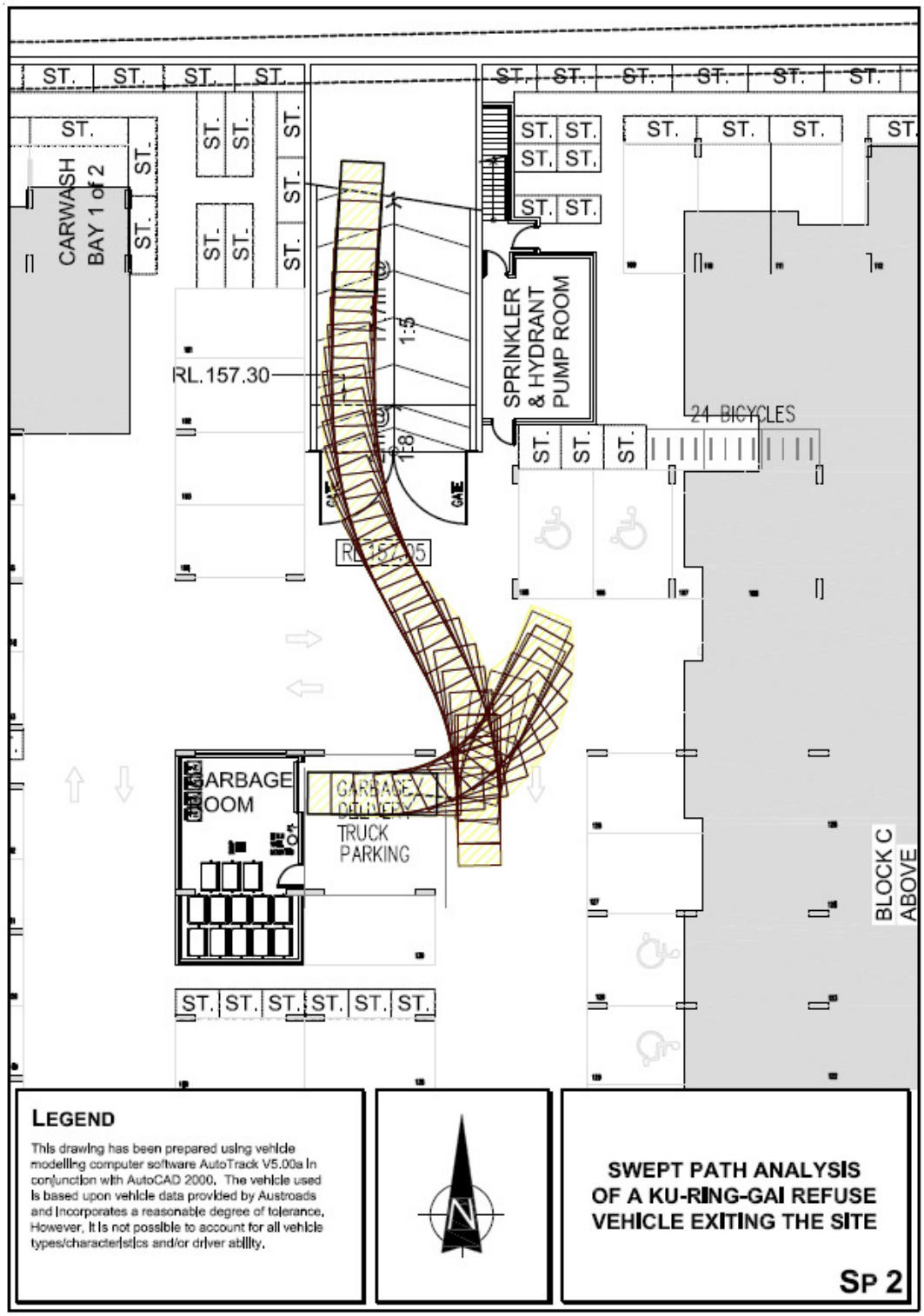
References/Notes:

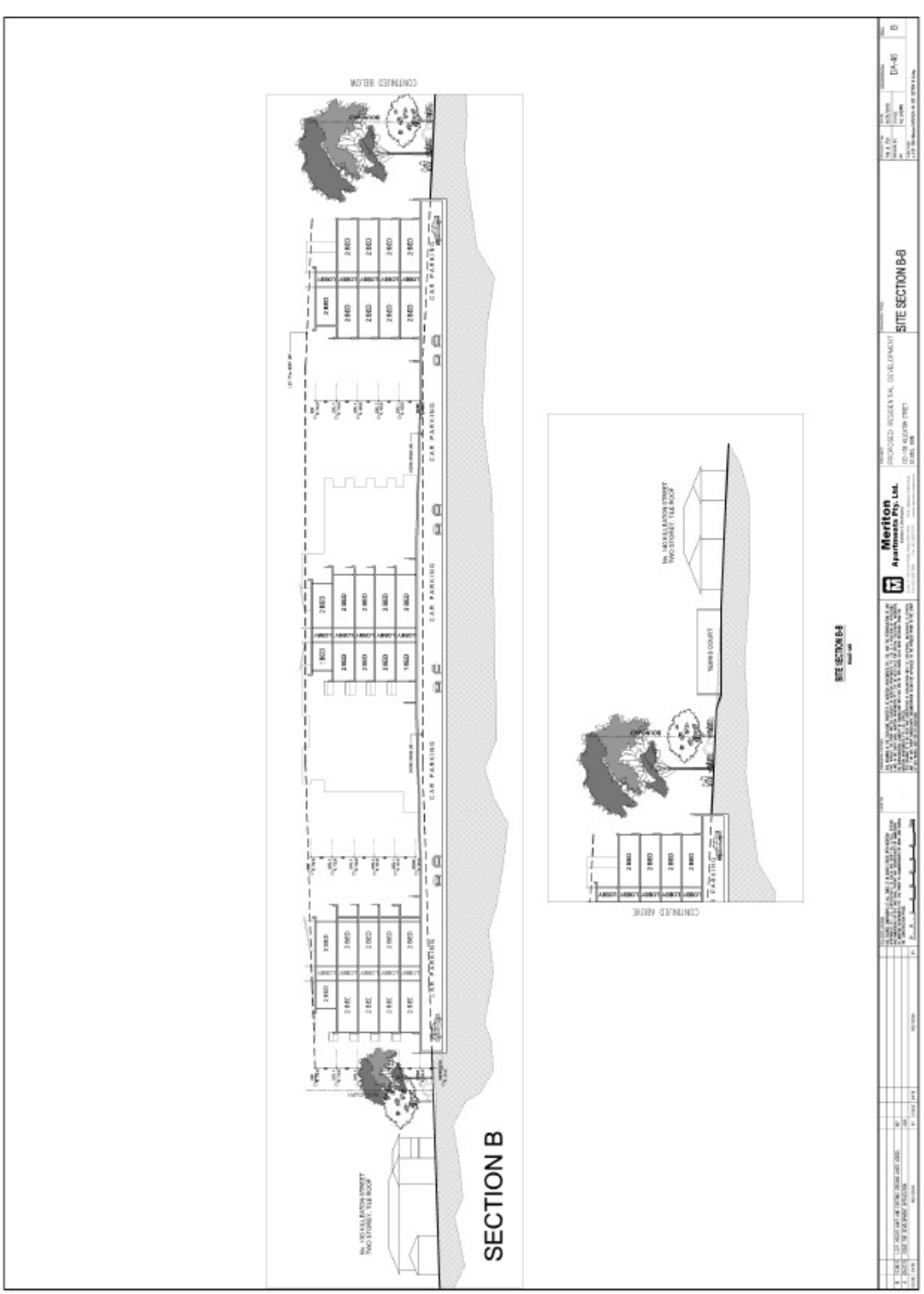
1) Ku-Ring-Gai Council Development Control Plan (Town Centres) 2010


CARPARK STAGE-1
Meriton Apartments Pty. Ltd.
DA-15


STAGE 2
STAGE 1
CARPARK STAGE 2
Meriton


CARWASH BAY 1 of 2
RL.157.30
17.7m @
2m @
SPRINKLER & HYDRANT PUMP ROOM
24 BICYCLES
GATE
GATE
RL.157.95
GARBAGE ROOM
GARBAGE DELIVERY
TRUCK PARKING
BLOCK C
LEGEND
This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2000. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.
SWEPT PATH ANALYSIS OF A KU-RING-GAI RREFUSE VEHICLE ENTERING THE SITE
SP 1


ST.
CARWASH BAY 1 of 2
RL.157.30
1:5
1:8
SPRINKLER & HYDRANT PUMP ROOM
24 BICYCLES
GAE
GARBAGE ROOM
GARBAGE DELIVERY TRUCK PARKING
BLOCK C ABOVE
LEGEND
This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2000. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.
N
SWEPT PATH ANALYSIS OF A KU-RING-GAI REFUSE VEHICLE EXITING THE SITE
SP 2


SECTION B
SITE SECTION B-B
SITE SECTION B-B
Meriton
Apartments Pty. Ltd.
PROPOSED RESIDENTIAL DEVELOPMENT
SITE SECTION B-B
DA-40
CONTINUED BELOW
CONTINUED ABOVE
CAR PARKING
TURFED COURT
No. 140 KILLEATON STREET
TWO STOREY TILE ROOF

WASTECH ENGINEERING

Eco-Pack
WASTE CHUTE COMPACTOR

Eco-Pack Waste Chute Compactor

The Patented Eco-Pack compactor has been specifically developed for compaction of waste delivered via an overhead chute in multi story apartments and entertainment venues.

Designed to suit tight room restraints, the Eco-Pack is a true hydraulic compactor that contains the high packing forces within itself to eliminate O,H&S issues and bin damage.

SPECIAL FEATURES

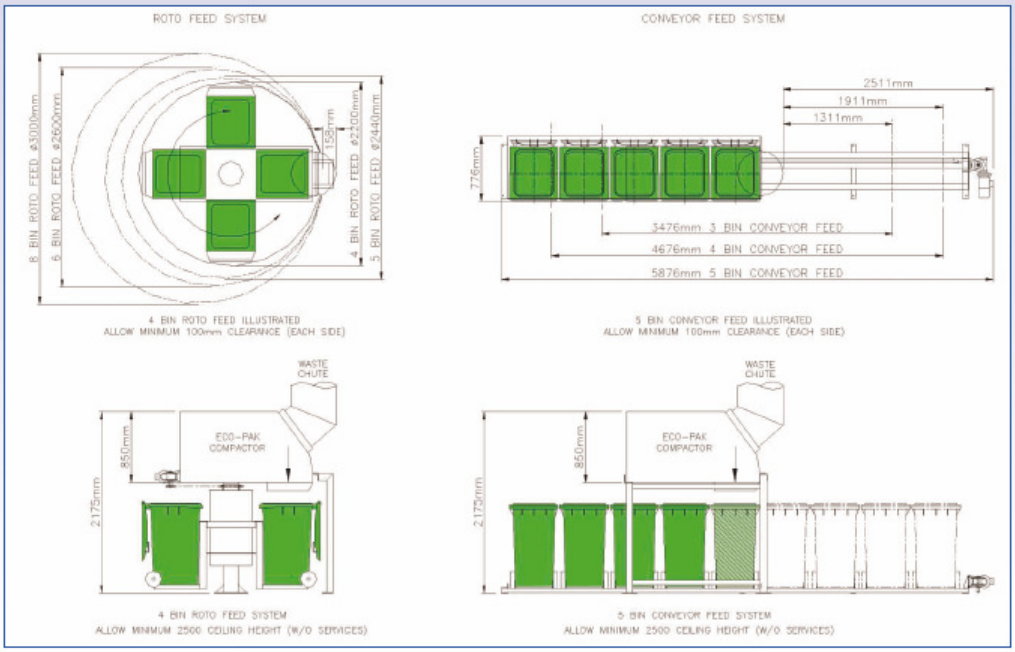
- High Compaction to reduce number of bins required thus reducing floor space.
- Compaction blade and ejection door constantly seal the waste chute to reduce odour and also eliminate the risk of fire transfer up the waste chute.
- Autocycle operation via 'photo cell' to reduce power consumption.
- Enclosed chamber design provides protection from glass explosion if bottles are dropped from upper levels.
- Ejection of compacted waste plugs into Bins sized from - 240 to 1,500 Ltr.
- Robust High tensile steel construction to Australian Standards AS4100.
- Compliance to all current O,H&S and WorkCover requirements.
- Quiet and efficient hydraulic system.
- Option of Roto Feed or Conveyor Feed to suit all installations.

Eco-Pack

APARTMENT COMPACTOR

Specifications

Compaction Ratio :	3:1 to 10:1 dependent on waste types.
Construction :	5mm and 20mm grade 350 high tensile steel plate.
Chamber dimensions :	560 wide x 600mm long.
Waste Capacity :	80 Ltr per 15 second cycle = 20m³/hr
Power requirements :	415v / 20A / 5pin power point .
Hydraulic Specs :	12 Lpm Pump, 5.5Kw Motor
Compaction Force :	62 kn or 6.3 tonnes force @ 14 Mpa
Waste bin Qty :	1 x 240 Ltr bin to 8 bins on Roto Feed and up to 660, 1500 litre bin Roto Feed.
Electric Control :	PLC control with electronic cycle control and photo cell monitoring.
Service :	Comprehensive fixed price service / inspection program available.
Warranty :	12 Month Warranty subject to our Standard Terms and Conditions.



WASTECH ENGINEERING

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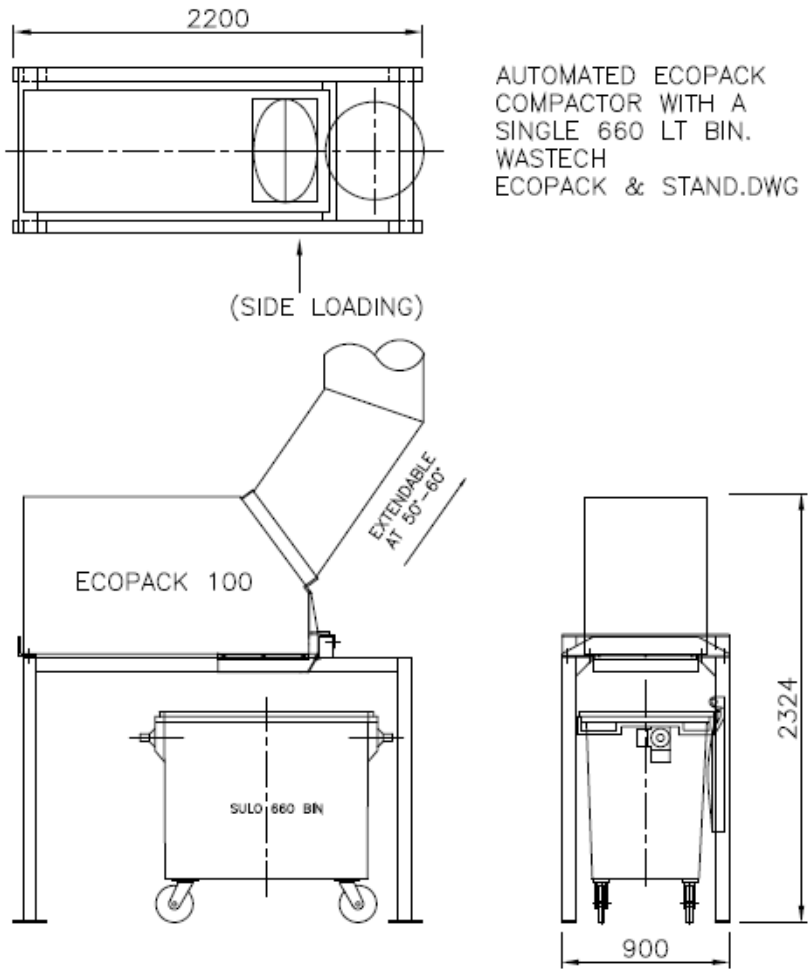
IN YOUR STATE PLEASE CALL

FREE CALL:
1800 465 465

Your Local Agent:



WASTECH ENGINEERING

SPECIALISING IN: DESIGN, MANUFACTURE AND SERVICE OF WASTE DISPOSAL AND RECYCLING EQUIPMENT

21 CAPITAL DRIVE, DANDENONG, VIC. 3175 PHONE (03) 97947100 FAX (03) 9794 7636

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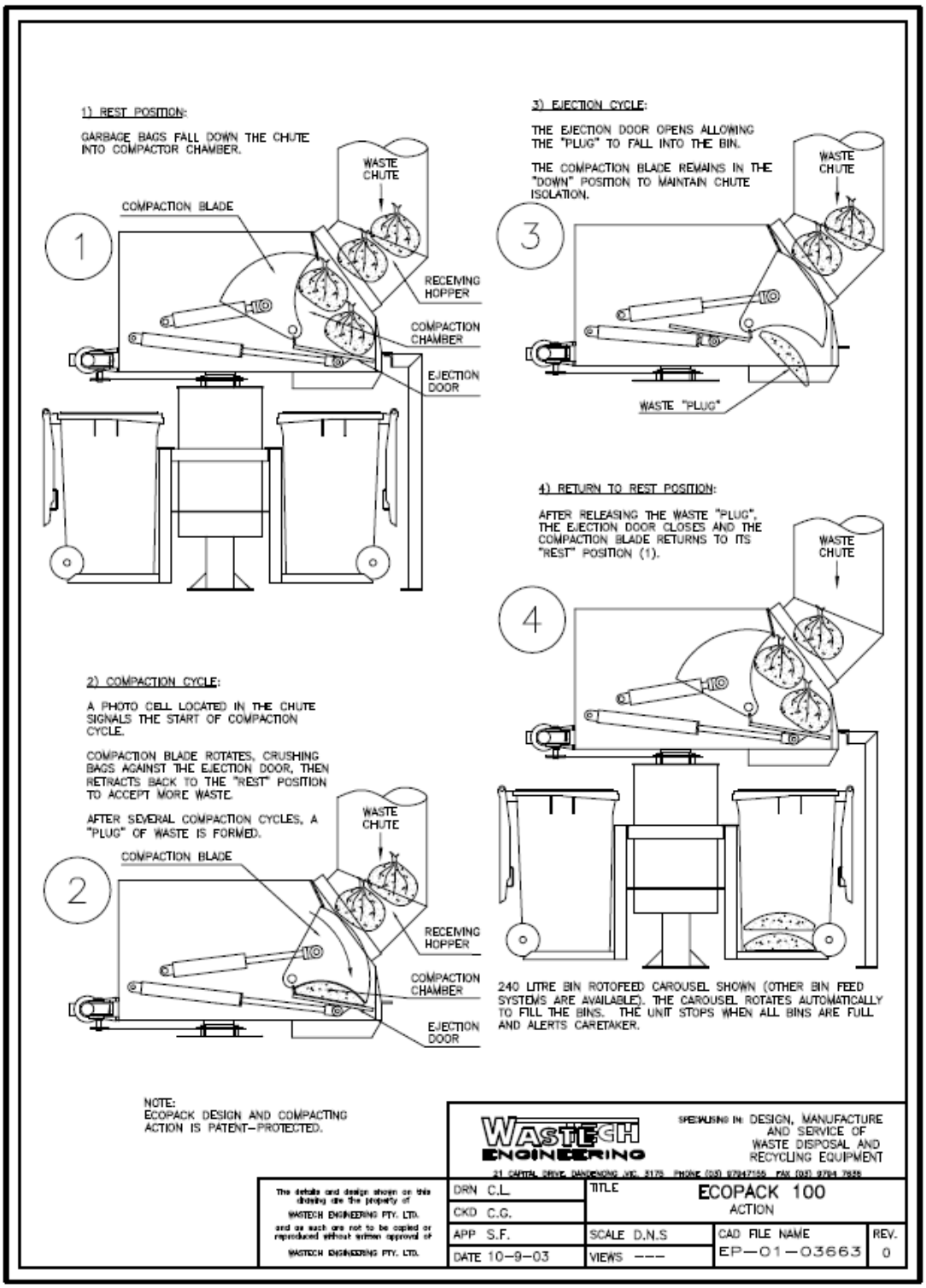
DRN C.G	TITLE	STAND SYSTEM SINGLE 660 LT BIN		
CKD ---				
APP ---	SCALE D.N.S	CAD FILE NAME	REV.	
DATE 28/09/06	VIEWS ---	ECOPACK&STAND	0	


1) REST POSITION:
GARBAGE BAGS FALL DOWN THE CHUTE INTO COMPACTOR CHAMBER.
WASTE CHUTE
COMPACTION BLADE
1
RECEIVING HOPPER
COMPACTION CHAMBER
EJECTION DOOR
2) COMPACTION CYCLE:
A PHOTO CELL LOCATED IN THE CHUTE SIGNALS THE START OF COMPACTION CYCLE.
COMPACTION BLADE ROTATES, CRUSHING BAGS AGAINST THE EJECTION DOOR, THEN RETRACTS BACK TO THE "REST" POSITION TO ACCEPT MORE WASTE.
AFTER SEVERAL COMPACTION CYCLES, A "PLUG" OF WASTE IS FORMED.
WASTE CHUTE
COMPACTION BLADE
2
RECEIVING HOPPER
COMPACTION CHAMBER
EJECTION DOOR
3) EJECTION CYCLE:
THE EJECTION DOOR OPENS ALLOWING THE "PLUG" TO FALL INTO THE BIN.
THE COMPACTION BLADE REMAINS IN THE "DOWN" POSITION TO MAINTAIN CHUTE ISOLATION.
WASTE CHUTE
3
WASTE "PLUG"
4) RETURN TO REST POSITION:
AFTER RELEASING THE WASTE "PLUG", THE EJECTION DOOR CLOSES AND THE COMPACTION BLADE RETURNS TO ITS "REST" POSITION (1).
WASTE CHUTE
4
240 LITRE BIN ROTOFEED CAROUSEL SHOWN (OTHER BIN FEED SYSTEMS ARE AVAILABLE). THE CAROUSEL ROTATES AUTOMATICALLY TO FILL THE BINS. THE UNIT STOPS WHEN ALL BINS ARE FULL AND ALERTS CARETAKER.
NOTE:
ECOPACK DESIGN AND COMPACTING ACTION IS PATENT–PROTECTED.
WASTECH ENGINEERING
SPECIALISING IN: DESIGN, MANUFACTURE AND SERVICE OF WASTE DISPOSAL AND RECYCLING EQUIPMENT
21 CAPITAL DRIVE, DANDENONG VIC. 3175. PHONE (03) 97947155. FAX (03) 9794 7925
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DRN C.L.
CKD C.G.
APP S.F.
DATE 10–9–03
TITLE ECOPACK 100 ACTION
SCALE D.N.S
VIEWS ---
CAD FILE NAME EP–01–03663
REV. 0

240 LITRE CONTAINER

Material

- **Polymer components:**
  - Injection moulded from specially designed HDPE
  - Resistant to decay, frost, heat and chemicals
  - Special UV-stabilisation provides excellent ageing characteristics
- **Corrosion resistant steel axle**
- **Noise reduction:**
  - Quiet-running solid rubber tyres
  - Tight-fitting axle
- **Long service life:**
  - High quality materials
  - Most advanced manufacturing processes
  - Withstands exposure to high mechanical stress levels
- **Recycling:**
  - All container parts are recyclable

Advantages

- Easy to manoeuvre
- Versatile, with a comprehensive accessories range
- Complies with EN840 and AS4123 quality requirements
- Particularly stable due to external position of wheels
- Safe and easy to handle
- Suitable for all DIN lifting equipment
- Double angle rail for greater safety when emptying
- Compatible with identification and weighing systems
- Special ribs prevent containers from becoming jammed when stacked

Imprints and markings

- Manufacturer, year of manufacture, material
- Nominal volume, max permitted total weight
- EN 840 and AS4123 markings
- Individual markings with imprints, hot-foil printing or adhesive labels*
- Customer specific serial numbers if required*

Accessories

- For accessories and special design variations such as lid apertures and locks please refer to the separate accessories sheet for 2-wheeled containers

Quality

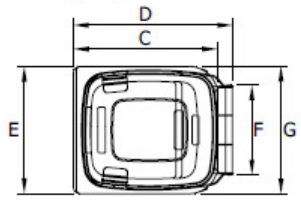
- Certified according to EN840
- Manufactured in accordance with AS4123

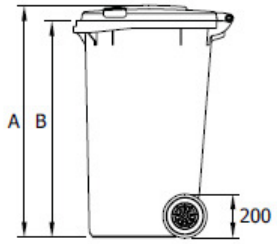
Dimensions - Weights - Standards

Nominal volume:	240 litres
Net weight:	approx 13 kg
Max load:	96 kg
Permitted total weight:	110 kg

A	1060 mm	D	730 mm	G	550 mm
B	990 mm	E	585 mm		
C	660 mm	F	400 mm		

Measurements to be used as a guide only – variations will occur





Colours

- Standard colours: black, nature green, dark green, grey
- Special colours are available on request* – common colours include blue, yellow, red, brown, orange, purple

DIN

SULO

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123 Wisemans Ferry Road
Somersby NSW 2250
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Fax: +61 (0) 2 - 4348 8128
Internet: www.sulo.com.au
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1950 Hume Hwy
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Australia
Tel: +61 (0) 3 - 9357 7320
Fax: +61 (0) 3 - 9357 7340

SULO - New Zealand
PO Box 58 962
Greenmount, Manukau City 2141
New Zealand
Tel: +64 9 - 968 2180
Fax: +64 9 - 968 2188

660 litre container

Material

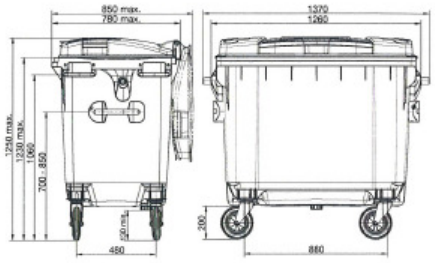
- **Polymer components:**
  - Injection moulded from specially designed HDPE
  - Resistant to decay, frost, heat and chemicals
  - Special UV-stabilisation provides excellent ageing characteristics
- **Corrosion resistant metal components:**
  - All metal components are galvanised
- **Noise reduction:**
  - Quiet-running tyres
- **Long service life:**
  - High quality materials
  - Most advanced manufacturing processes
  - Even if exposed to high mechanical stress levels
- **Recycling:**
  - All container parts are recyclable

Advantages

- Easy handling
  - Easy filling
  - Easy grip handles on front and sides of lid
  - Stable and light weight lid
- Safe manoeuvring
  - Easy grip handles on three sides
  - Wide handles, easy to use when wearing thick gloves
  - User-friendly handles
  - Handles available in alternative colours
- Complies fully with EN or RAL quality requirements
- Versatile, with a comprehensive accessories range
- Various wheel assembly configurations for different applications
- Water drainage plug as standard
- Compatible with identification and weighing systems
- Suitable for all lifting equipment in accordance with EN 840
- Rounded lid profile for improved rainwater dispersal

Dimensions and Weights

Nominal volume:	660 litres
Net weight:	ca. 43 kg
Permitted total weight:	310 kg



all dimensions according to EN 840

Colours

- Standard colours: grey, green, blue, yellow, brown, red
- Special colours are available on request
- All additives are cadmium free and environmentally friendly

Imprints and markings

- Manufacturer
- Month and year of manufacture
- Nominal volume, max. permitted total weight
- "No hot ashes" symbol
- Material
- EN 840, RAL markings
- Individual markings with imprints, screen printing, hot-foil printing or adhesive labels

Accessories

- For accessories and special design variations such as lid apertures, locks, towing brackets and fork lift sleeves, please refer to the separate accessories sheet for 4-wheeled containers

SULO

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Bünder Straße 85
D-32051 Herford
Telefon +49 (0) 52 21 598-207
Telefax +49 (0) 52 21 598-579
Internet: www. sulo.com
e-mail: info@sulo.de

Specifications >>

SITA Environmental Solutions

Rear Lift Collection System

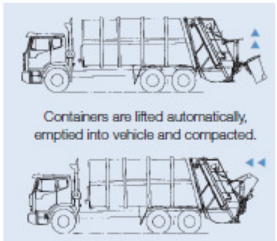
Container Specifications

Plastic (polyethelene)					Metal (galvanised steel)	
Capacity	**120l**	**240l**	**660l**	**1100l**	**1.5m³**	**3.0m³**
Height	0.92m	1.075m	1.235m	1.485m	1.3m	1.3m
Width	0.54m	0.58m	1.36m	1.36m	2.4m	2.4m
Length	0.62m	0.715m	0.765m	1.07m	1.25m	2.25m
Weight	9.5kg	13.5kg	45kg	65kg	300kg	400kg

Vehicle Specifications

Overall length	8.0m
Overall width	2.5m
Height (travel)	3.4m
Height (in operation)	3.4m
Weight (vehicle only)	13.0t
Weight (payload)	9.5t
Turning circle	25.0m

Rear Lift Collection Operation



Containers are lifted automatically, emptied into vehicle and compacted.

Vehicle Safety Features

- On board reversing camera
- Hydraulic valves, lifting gear and doors
- Heated external mirrors
- Reversing lights and beepers

Container Options

- Foot operated lid
- Electronic chip provision
- Wheel locking device
- Divider system
- Size
- Flip top and roll top lids
- Colours (according to national standards) and decals

Container Accessories

- Wheel brakes
- Liners
- Security posts
- Padlocks and chains
- Cart cradle
- Waste ID labels
- Bin lifter

Note Specifications are a guide only. Printed on recycled paper using environmentally friendly soy-based inks.

SITA's Range of Services include Small Business Waste, Commercial Waste, Industrial Waste, Recycling, Product Destruction, Waste Audits, Government, Domestic Waste, Liquid Waste, Medical Waste, Security Disposal, Builders Bins, Temporary Bins and Hygiene Services

Call 13 13 35 or visit sita.com.au

Electrodrive

Electrodrive Waste Bin system

The Waste Bin System is an ideal solution for large facilities with centralised dumping points. Quickly and easily bring your waste bins to the one place for emptying. Safety features include: horn, flashing light, and back off button.

- Features an Electrodrive Tug and a Waste Bin Mover
- Carries up to 4 x 240L wheelie bins
- Easy to manoeuvre with forward and reverse drive
- Customised movers available to suit your facility
- Electric powered: 24V deep cycle, sealed gel cell batteries
- Easily traverses outdoor terrain and is weatherproof
- Equipment training and servicing programs available
- Simple to use, no driver's licence required

Specifications

Waste Bin Mover Dimensions:
Height: 1400
Length: 1600 (2 Bin), 2100 (3), 2600 (4)
Width: 715

Tug Dimensions:
Height: 890
Length: 1450 (filler handle down)
Width: 630
Capacity: 1000kg
Weight: 170kg
Voltage: 24V
Range: 12km