APPENDIX 13

Waste management plan (Elephants Foot)

Sydney2030/Green/Global/Connected

city of villages

WASTE MANAGEMENT PLAN

PREPARED FOR

LUIGI ROSSELI PTY LTD

Commercial Development

7-13 RANDLE STREET
SURRY HILLS NSW 2010

1/12/2016

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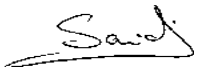
REVISIONS

Revision	Date	Prepared by	Reviewed by	Approved by	Remarks
A	27/07/2015	E Boone	N Beattie	E Saidi	Preliminary
B	27/08/2015	E Boone	N Beattie	E Saidi	Amendment
C	1/12/2016	A Armstrong	N Beattie	E Saidi	Final

Authorised By: 

Eddy Saidi

Date: 1/12/2016

DISTRIBUTION LIST

Recipient Name	Company	Revision
Simon Hassall	Luigi Rosselli Pty Ltd	C
Eddy Saidi	Elephants Foot Recycling Solutions	C

EXECUTIVE SUMMARY

This waste management plan covers the ongoing management of waste generated by the commercial development located at 7-13 Randle Street, Surry Hills NSW 2010.

Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements. The waste management plan has three key objectives:

i. ***Ensure waste is managed to reduce the amount of waste and recyclables to land fill*** by assisting residents to segregate appropriate materials that can be recycled; displaying signage to remind and encourage recycling practices; and through placement of recycling and waste bins in the retail precinct to reinforce these messages.

ii. ***Recover, reuse and recycle*** generated waste wherever possible.

iii. ***Compliance*** with all relevant codes and policies.

To assist in providing clean and well-segregated waste material, it is essential that this waste management plan is integral to the overall management of the building and clearly communicated to residents and tenants.

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GLOSSARY OF TERMS

TERM	DESCRIPTION
Collection Area/Point	The position or area where waste or recyclables are actually loaded onto the collection vehicle
Compactor	A Machine for compressing waste into disposable or reusable containers
Composter	A container/machine used for composting specific food scraps
Crate	A plastic box used for the collection of recyclable materials
Garbage	All domestic waste (Except recyclables and green waste)
Recycling	Glass bottles and jars – PET, HDPE and PVC plastics; aluminium aerosol and steel cans; milk and juice cartons; soft drink, milk and shampoo containers; paper, cardboard, junk mail, newspapers and magazines
Green	Garden organics such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers, and weeds
L	Litre(s)
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 Bin(s) (MGB)	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 660, 1000 or 1100, 1500 or 2000

LIST OF FIGURES

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INTRODUCTION

The following waste management plan pertains to the commercial development located at 7-13 Randle Street, Surry Hills NSW 2010. This waste management plan is an operational waste management plan and will address the phases of the completed development.

The development is a hotel with 126 x 1-bed suites. The hotel also incorporates a restaurant, café and wine bar on the basement level (breakdown below):

- **126** x 1-bedroom hotel suites in total;
- **272m^2** allocated to a restaurant (inclusive of kitchen and dining area);
- **51m^2** allocated to a café; and
- **82m^2** allocated to a wine bar.

All figures and calculations are based on area schedules as advised by our client and shown on architectural drawings.

CITY OF SYDNEY COUNCIL

The residential waste and recycling will be guided by the services and acceptance criteria of the City of Sydney Council. The hotel's waste will be collected by private contractor.

All waste facilities and equipment are to be designed and constructed to be in compliance with the City of Sydney Council's *Policy for Waste Minimisation in New Developments 2005, Council Advices,* Australian Standards and statutory requirements. Disappointed

COUNCIL OBJECTIVES

- Ensure that each dwelling has adequate space to manage waste.
- Ensure that buildings provide appropriate facilities to manage waste.
- Ensure that residential amenity is not impacted by waste systems and collection services.

COUNCIL REQUIREMENTS

Access – Ensure waste systems are easy to use and collection vehicles are able to access buildings to safely remove waste and recycling;

Safety – Ensure safe practises for storage, handling and collection of waste and recycling;

Pollution Prevention – Prevent stormwater pollution that may occur as a result of poor waste storage and management practises;

Noise Minimisation – Provide acoustic insulation to the waste service facilities or residential units adjacent to or above chutes, waste storage facilities, chute discharge, waste compaction equipment and waste collection vehicle access points;

Ecologically Sustainable Development (ESD) – Promote the principles of ESD through resource recovery and recycling leading to a reduction in the consumption of finite natural resources;

Hygiene – Ensure health and amenity for residents, visitors and workers in the City of Sydney.

GENERATED WASTE VOLUMES

The assessment of projected waste volumes is a calculated estimate only and will be influenced by the development's management and occupant's waste disposal and recycling practices.

CONSTRUCTION AND DEVELOPMENT WASTE

The head contractor will be responsible for removing all construction-related waste offsite in a manner that meets all authority requirements. Please refer to the separate waste management plan submitted for construction waste as part of the Development Application.

BUILDING MANAGER/WASTE CARETAKER

All waste equipment movements are to be managed by the building manager/cleaners at all times. No tenants or residents will be allowed to transport waste or recyclables from the waste room; tenants and residents will only transport their waste to the allocated bin room.

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 of bins as required;
- organising both garbage and recycled waste pick-ups as required;
- cleaning and exchanging all bins;
- ensure site safety for residents, children, visitors, staff and contractors;
- abide by all relevant OH&S legislation, regulations, and guidelines;
- assess any manual handling risks and prepare a manual handling control plan for waste and bin transfers; and
- provide to staff/contractors equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities

NOTE: It is the responsibility of the building manager to monitor the number of bins required for the development. As waste volumes may change according to the development's management and occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation.

REPORTING

It is recommended that building management ensure that all waste service providers submit monthly reports on all equipment movements and weights of any waste and recycling products removed from the development. Regular reviews of servicing should take place to ensure operational and economic best practise and to assist with sustainability reporting.

EDUCATION

Building management is responsible for creating and managing the waste management education process.

It is expected that leasing arrangements with retail/commercial operations contain direction on waste management services and expectations.

HOTEL SUITE WASTE PLAN

The EPA's *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities* has been referenced to calculate the total number of bins required for the hotel suites. Please note that calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

Table 1: *Calculated Waste Generation – Residential*

Hotel Accomodation	Quantity	Waste Calculation (L/day)	Generated Waste (L/week)	Recycling Calculation (L/day)	Generated Recycling (L/week)
1 Bedroom	126	5	4410	1	882
TOTAL	**126**		**4410**		**882**

WASTE MANAGEMENT

The vast majority of people who stay in motels generally spend a relatively short time at the facility, therefore the waste generated in each unit is managed by the staff. Most waste generated is from goods received at the loading dock in the form of packaging (cardboard and plastic film), food waste, recyclables (mixed containers), newspapers and magazines. Office paper may also be generated however this is generally a minimal quantity.

All guests of each motel suite will be supplied with a collection receptacle in each unit (generally in the main room and bathroom, under bench or similar alternate area) to deposit garbage and collect recyclable material suitable for one days storage. Garbage receptacles must be supplied with bin liners. Recycling must not be bagged. It is recommend that hotel guests use a crate or dedicated bin for collecting recyclables within the allocated motel space provided to ensure correct separation before recyclables are transferred to the garbage room. It is expected that hotel guests will place clean and empty recycling items into the collection bins.

Nominated staff or cleaners will transport sorted garbage and recyclable items to the waste room on Basement 1 and place bagged garbage into 1100L collection bins and recycling (comingle) into 1100L collection bins. Collection will be undertaken by a private waste contractor on the agreed days of collection.

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed.

HOTEL DINING WASTE PLAN

The EPA's *Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities* has been referenced to calculate the total number of bins required for the retail areas. Please note that calculations are based on generic figures; waste generation rates may differ according to the tenants' waste management practice. Please note that if food tenants are placed, the waste generation rates will require adjustment. A seven day operating week has been assumed.

Table 2: *Calculated Waste Generation – Retail*

Type	NLA (m^2)	Waste Calculation ($L/100m^2/day$)	Generated Waste (L/week)	Recycling Calculation ($L/100m^2/day$)	Generated Recycling (L/week)
Restaurant/Kitchen	272	190	3617.6	190	3617.6
Café	51	215	767.55	130	464.1
Bar	83	80	464.8	35	203.35
TOTAL	**406**		**4849.95**		**4285.05**

WASTE MANAGEMENT

The tenants will be required to be responsible for their own storage of waste and recycling back of house (BOH). On completion of each trading day or as required, nominated staff/cleaners will transport their waste and recycling to the allocated waste room and place waste and recycling into the appropriate collection bins (*Refer Appendix A.1 for waste room area.).*

Food handling for food cooked or prepared, served and consumed on site will produce a typical waste composition of food scraps from plates, packaging waste and some plastics. Café or restaurant staff will be responsible for their waste management.

Cardboard is a major component of the waste generated by cafes/restaurants. All cardboard should be flattened (to save bin space), placed in and collected from bulk bins. Whilst cardboard is bulky, it is generally lightweight however it can be contaminated with food or liquid which makes it unsuitable for recycling.

It is recommended that:

- all waste should be bagged and waste bins should be plastic lined;
- bagging of recyclables is not permitted;
- all waste collections located BOH during operations;
- individual recycling programs are recommended for retailers to ensure commingled recycling is separated correctly;
- any food and beverage tenant will make arrangements for storing used and unused cooking oil in a bunded storage area;
- the operator will organise grease interceptor trap servicing;

- a suitable storage area needs to be provided and affectively bunded for chemicals, pesticides and cleaning products;
- dry basket arresters need to be provided to the floor wastes in the food preparation and waste storage areas;
- washroom facilities should be supplied with collection bins for paper towels (if used); and
- all flattened cardboard will be collected and removed to the waste room recycling MGB

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed.

COMINGLE RECYCLING

Any staff tea points will be supplied with a dedicated commingled MGB for the collection of all recyclable glass, aluminium, steel and plastic items. Staff will be responsible for sorting this material and allocating recyclables into the correct collection facility.

WASHROOMS

Washroom facilities should be supplied with collection bins for paper towels (if used). Sanitary bins for female restroom facilities must also be arranged with an appropriate contractor.

Please note 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.

OTHER RETAIL/COMMERCIAL WASTE

Tenants usually make their own arrangements for the disposal and recycling of toner cartridges and batteries. Disposal of hard, electronic, liquid waste and any detox (paint/chemicals) shall be organised with the assistance of the building management/cleaners.

BIN SUMMARY

Based on the assumptions presented in Table.1 and Table. 2, the required bin quantities for both the hotel suites and hotel dining have been calculated and are tabulated below:

Garbage: **3 x 1100L** MGBs collected **3 x weekly**
Recycling: **2 x 1100L** MGBs collected **3 x weekly**

NOTE: Subject to the stakeholders preference/capability (and as built constraints), bin sizes and quantities may be changed. As waste volumes may change according to the development's type, bin numbers and collection frequencies may be altered to suit the building operation.

WASTE ROOM

The waste room must have the capacity to house all of the bins required for the entire development plus sufficient room to adequately access and manoeuvre bins. A bin wash down area is provided within this room.

The recommended room size is $18m^2$, therefore the room provided in the architectural drawings (dated 24/11/2016 – Issue C) is deemed adequate.

COLLECTION OF WASTE

A private contractor will be engaged to service all bins onsite to the agreed collection schedule.

The waste contractor will service all bins directly from the waste room via the designed vehicle loading bay.

It is our understanding that a traffic consultant is preparing drawings to confirm the swept paths for waste collections, access and egress, internal manoeuvring to assume parked position for loading and to exit, load requirements as well as collection vehicle dimensions. This information and supporting drawings will be provided separate to this report.

GARBAGE ROOMS

CONSTRUCTION REQUIREMENTS

The garbage room will be required to contain the following facilities to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- waste room floor to be sealed with a two pack epoxy;
- waste room walls and floor surface is flat and even;
- all corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- for residential: a hot and cold water facility with mixing facility and hose cock must be provided for washing the bins;
- for retail/commercial: a cold water facility with hose cock must be provided for washing the bins;
- any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board. (Sydney Water);
- tap height of 1.6m;
- storm water access preventatives (grate);
- all walls painted with light colour and washable paint;
- equipment electric outlets to be installed 1700mm above floor levels;
- the room must be mechanically ventilated;
- light switch installed at height of 1.6m;
- waste rooms must be well lit (sensor lighting recommended);
- optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- all personnel doors are hinged and self-closing;
- waste collection area must hold all bins – bin movements should be with ease of access;
- conform to the Building Code of Australia, Australian Standards and local laws; and
- childproofing and public/operator safety shall be assessed and ensured

SIGNAGE

The building manager/caretaker is responsible for waste room signage including safety signage (*see APPENDIX B.2 & APPENDIX B.3*). Appropriate signage must be prominently displayed on walls and above all bins, clearly stating what type of waste or recyclables is to be placed in the bin underneath.

VENTILATION

Waste and recycling rooms must have their own exhaust ventilation system either;

- Mechanically - exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum; or
- Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area

Mechanical exhaust systems shall comply with AS1668 and not cause any inconvenience, noise or odour problem.

STORM WATER PREVENTION & LITTER REDUCTION

Building management shall be responsible for the following to minimise dispersion of site litter and prevent stormwater pollution to avoid impact to the environment and local amenity:

- promote adequate waste disposal into the bins;
- secure all bin rooms (whilst affording access to staff/contractors);
- prevent overfilling of bins, keep all bin lids closed and bungs leak-free;
- take action to prevent dumping or unauthorised use of waste areas; and
- ensure collection contractors clean-up any spillage that may occur when clearing bins

ADDITIONAL INFORMATION

Transfer of waste and all bin movements require minimal manual handling therefore the operator must assess manual handling risks and provide any relevant documentation to building management. If required, a bin-tug, trailer or tractor consultant should be contacted to provide equipment recommendations. Hitches may require installation to move multiple bins to the collection area. Council must be informed of any hitch attachments required to be installed on bins.

LIMITATIONS

The purpose of this report is to document a Waste Management Plan as part of a development application and is supplied with the following conditions:

- Drawings, estimates and information contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by you and third parties including Council and government information. The assumptions based on the information contained in the WMP is outside the control of EFRS;
- the figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building managements approach to educating residents and tenants regarding waste management operations and responsibilities;
- the building manager will make adjustments as required based on actual waste volumes (if waste is greater than estimated) and increase the number of bins and collections accordingly;
- the report will not be used to determine or forecast operational costs or prepare any feasibility study or to document any safety or operational procedures;
- the report has been prepared with all due care however no assurance or representation is made that the WMP reflects the actual outcome and EFRS will not be liable to you for plans or outcomes that are not suitable for your purpose, whether as a result of incorrect or unsuitable information or otherwise;
- EFRS offer no warranty or representation of accuracy or reliability of the WMP unless specifically stated;
- any manual handling equipment recommended should be provided at the recommendation of the appropriate equipment provider who will assess the correct equipment for supply;
- Design of waste management chute equipment and systems must be approved by the supplier.

USEFUL CONTACTS

Elephants Foot Recycling Solutions does not warrant or make representation for goods or services provided by suppliers.

City of Sydney Council Customer Service
Phone: 02 9265 9333 Email: council@cityofsydney.nsw.gov.au

SULO MGB (MGB, Public Place Bins, Tugs and Bin Hitches)
Phone: 1300 364 388

CLOSED LOOP (Organic Dehydrator)
Phone: 02 9339 9801

ELECTRODRIVE (Bin Mover)
Phone: 1800 333 002 Email: sales@electrodrive.com.au

RUD (Public Place Bins, Recycling Bins)
Phone: 07 3712 8000 Email: Info@rud.com.au

CAPITAL CITY WASTE SERVICES
Phone: 02 9359 9999

REMONDIS (Private Waste Services Provider)
Phone: 13 73 73

SITA ENVIRONMENTAL (Private Waste Services Provider)
Phone: 13 13 35

NATIONAL ASSOCIATION OF CHARITABLE RECYCLING ORGANISATIONS INC. (NACRO)
Phone: 03 9429 9884 Email: information@nacro.org.au

PURIFYING SOLUTIONS (Odour Control)
Phone: 1300 636 877 Email: sales@purifyingsolutions.com.au

Elephants Foot Recycling Solutions (Chutes, Compactors and eDiverter Systems)
44 – 46 Gibson Avenue
Padstow NSW 2211
Free call: 1800 025 073 Email: natalie@elephantsfoot.com.au

APPENDICES

APPENDIX A DRAWING EXERPTS

APPENDIX A.1 BASEMENT DISPLAYING WASTE ROOM

Luigi Rosselli, Drawing # DD05 Rev C 24 November 2016 - Basement

APPENDIX B CITY OF SYDNEY COUNCIL EQUIPMENT SPECIFICATIONS

APPENDIX B.1 BIN DIMENSIONS

Mobile containers with a capacity from 500L to 1700L with four wheels

Dome or flat lid containers

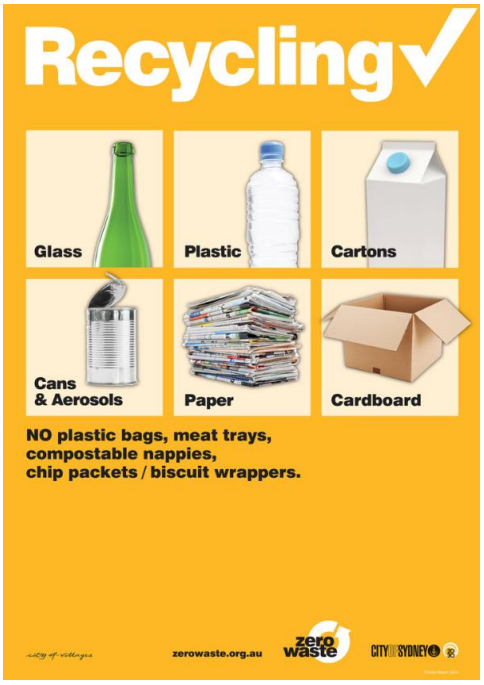
Bin Type	660 Litre MGB	770 Litre MGB	1100 Litre MGB	1300 Litre MGB	1700 Litre MGB
Height	1250	1425	1470	1480	1470
Depth	850	1100	1245	1250	1250
Width	1370	1370	1370	1770	1770

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

APPENDIX B.3 SIGNAGE FOR COMMUNAL WASTE ROOMS & NOTICE BOARDS

The City of Sydney Council offers free resources available for communal garbage rooms and notice boards to highlight what can and cannot be recycled. These include stickers for bins and signs for bin rooms.

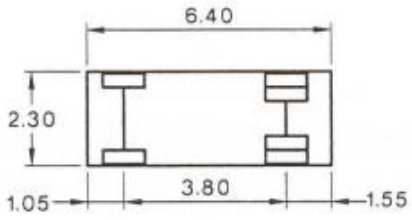

Garbage
Meat trays
Nappies
Styrofoam
Wrappers
Food
NO sharps or syringes.
zerowaste.org.au


Recycling
Glass
Plastic
Cartons
Cans & Aerosols
Paper
Cardboard
NO plastic bags, meat trays, compostable nappies, chip packets / biscuit wrappers.
zerowaste.org.au


Garden Organics
Flowers
Sticks & branches
(under 10cm thick)
Grass clippings
Leaves
If it doesn't fit in this bin, book it for collection through our free clean up service. Call 9265 9333.
zerowaste.org.au

APPENDIX B.4 TYPICAL SRV LOADING BAY DIMENSIONS

Small rigid vehicle (SRV) The SRV represents light trucks to a maximum load capacity of 4.0t and typically having a single rear axle and either single or dual tyres. Typically used in service areas where small commercial vehicles are preferred.



(a) Small rigid vehicle
Clearance height 3.50
Design turning radius 7.1

APPENDIX C WASTE MANAGEMENT EQUIPMENT SPECIFICATIONS

APPENDIX C.1 TYPICAL BIN MOVER

Typical applications:

- Move trolleys, waste bin trailers and 660litre/1100 litre bins up and down a ramp incline. Ideal for Apartment Buildings (to move waste bins located at a basement level to road level).
- Quiet, smooth operation with zero emissions and simple to use, no driver's licence required

Features:

- Up to 1 Tonne on a ramp surface (depending on ballast and incline)
- Anti-rollback system on slopes
- Foot print: 1548L x 795W x 1104H (handle in the drive position)
- Pin Hitch is standard however alternate hitching options may be available to suit your specific application (e.g. tow ball)

Safety Features:

- Intuitive paddle lever control
- Stops and repels the unit if activated when reversing.
- Site assessment recommended to assess ramp incline steepness *(See Useful Contacts)*

APPENDIX C.2 ELECTRIC ORGANIC COMPOST BIN

SOURCE: *Closed Loop Domestic Composter – See Useful Contacts*

TYPICAL PUBLIC PLACE WASTE BINS

** Products and specifications may change according to manufacturer.*

SOURCE: *SULO Environmental Technology*