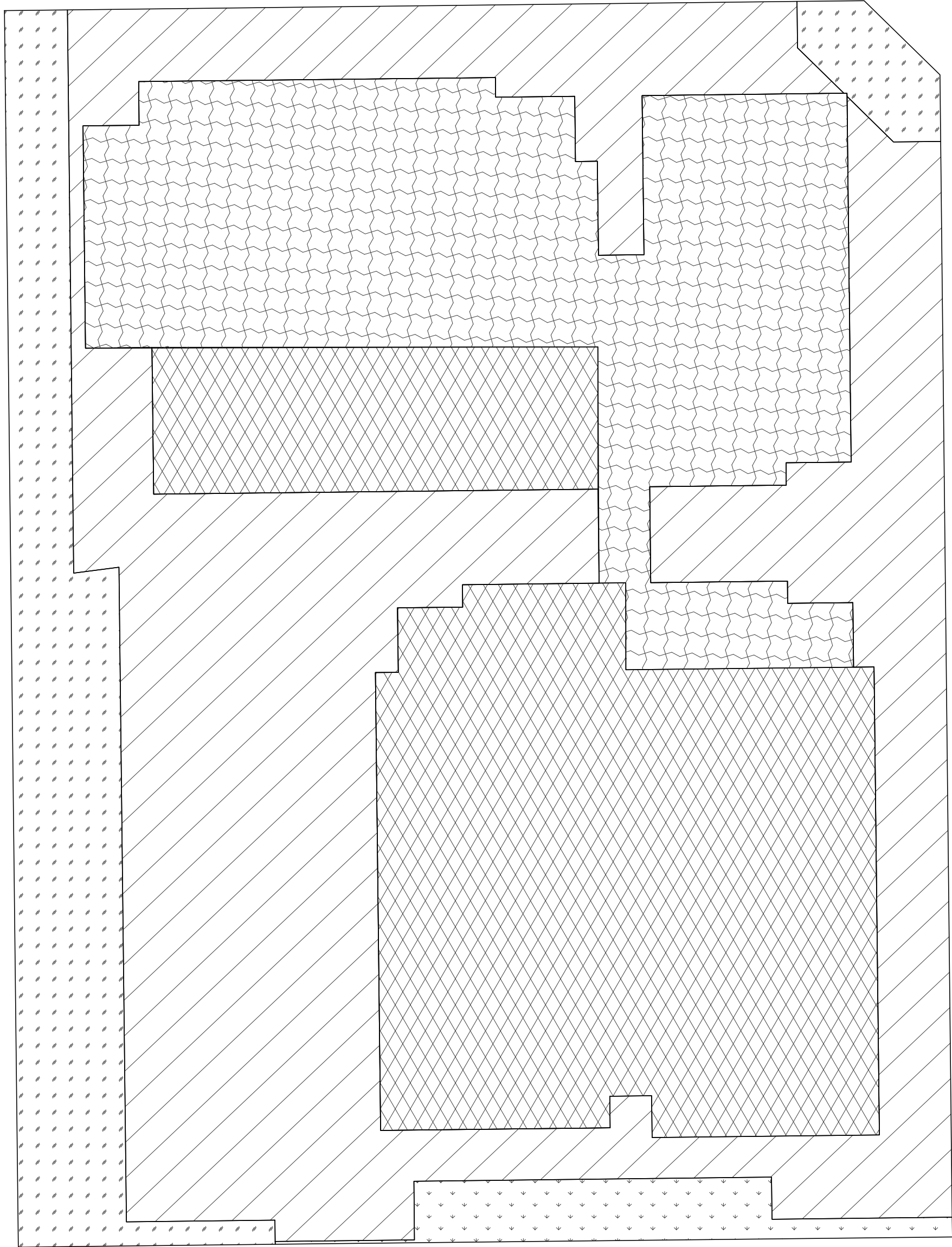
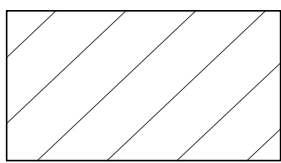
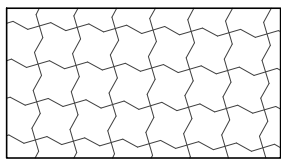
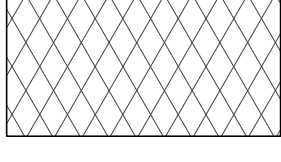
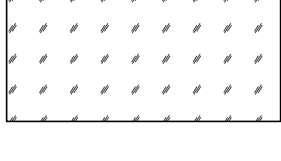
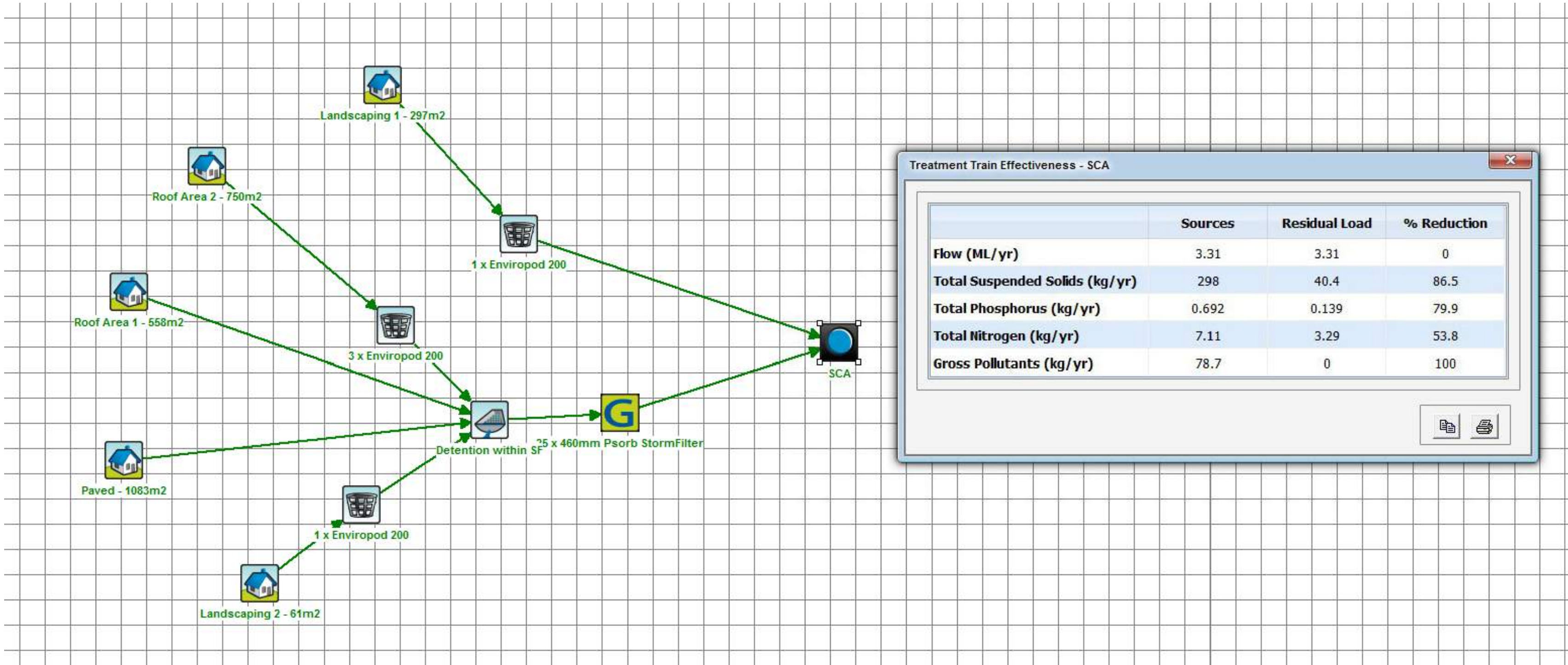


SERVICES ON THIS DRAWING
ARE SHOWN BELOW SLAB U.N.O



- PAVED AREA INTO STORMFILTER (1083.30m²)
- ROOF AREA 1 INTO STORMFILTER (553m²)
- ROOF AREA 2 INTO ENVIROPODS AND STORMFILTER (750.00m²)
- LANDSCAPING AREA 1 BYPASS STORMFILTER (297.00m²)
- LANDSCAPING AREA 2 INTO STORMFILTER (61.00m²)



Treatment Train Effectiveness - SCA			
	Sources	Residual Load	% Reduction
Flow (ML/yr)	3.31	3.31	0
Total Suspended Solids (kg/yr)	298	40.4	86.5
Total Phosphorus (kg/yr)	0.692	0.139	79.9
Total Nitrogen (kg/yr)	7.11	3.29	53.8
Gross Pollutants (kg/yr)	78.7	0	100

Reference Coordination Drawing					
Discipline	Drawing Title and Number	Date	Rev.		
ARCH					
ARCH					
STRUCT					
MECH					
ELEC					
HYD					
FIRE					
LANDS					
CIVIL					
SURVEY					

Issuer internal sequence and revision history					
1-preliminary	2-development application	3-construction certificate	4-tender	5-construction	6-other



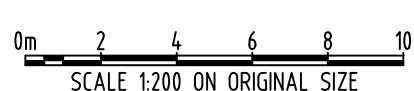
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AUSTRALIA
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Scales



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ARCHITECT
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PROJECT
RESIDENTIAL DEVELOPMENT
1-5 BATHURST ST LIVERPOOL

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	7 of 7	1200 @ A1

Drawing Status
PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
STORMWATER CONCEPT DESIGN
MUSIC CATCHMENT PLAN

Project No	Drawing No	Revision No
20160228	SW07	A

Appendix F

Waste Management Plan



WASTE MANAGEMENT PLAN

PREPARED FOR
SYNERGY DEVELOPMENT GROUP

ON BEHALF OF
ALGORRY ZAPPIA & ASSOCIATES

Residential Development

1-5 Bathurst Street
Liverpool NSW 2170

27/09/2016

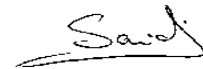
EDDY SAIDI
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REVISIONS

Revision	Copy No.	Date	Prepared by	Reviewed by	Approved by	Remarks
A	1	27/09/2016	D Trinder	A Armstrong	N Beattie	Draft
Rev #	Copy #	Select Date	Name	Name	Name	Additional Remarks
Rev #	Copy #	Select Date	Name	Name	Name	Additional Remarks
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Authorised By:



Eddy Saidi
Date: 27/09/2016

DISTRIBUTION LIST

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EXECUTIVE SUMMARY

This waste management plan covers the ongoing management of waste generated by the residential development located at 1-5 Bathurst Street, Liverpool NSW 2170.

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
<i>Baler</i>	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
<i>Chute</i>	A ventilated, essentially vertical pipe passing from floor to floor of a building with openings as required to connect with hoppers and normally terminating at its lower end at the roof of the central waste room(s)
<i>Collection Area/Point</i>	The position or area where waste or recyclables are actually loaded onto the collection vehicle
<i>Compactor</i>	A Machine for compressing waste into disposable or reusable containers
<i>Composter</i>	A container/machine used for composting specific food scraps
<i>Crate</i>	A plastic box used for the collection of recyclable materials
<i>Garbage</i>	All domestic waste (Except recyclables and green waste)
<i>Hopper</i>	A fitting into which waste is placed and from which it passes into a chute or directly into a waste container. It consists of a fixed frame and hood unit (the frame) and a hinged or pivoted combined door and receiving unit
<i>Recycling</i>	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
<i>Green</i>	Garden organics such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers, and weeds
<i>L</i>	Litre(s)
<i>Liquid Waste</i>	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)
<i>Mobile Garbage Bin(s) (MGB)</i>	A waste container generally constructed of plastic with wheels with a capacity in litres of 120, 240, 660, 1000 or 1100, 1500 or 2000
<i>Putrescible Waste</i>	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.

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INTRODUCTION

The following waste management plan pertains to the residential development located at 1-5 Bathurst Street, Liverpool NSW 2170. This waste management plan is an operational waste management plan and will address the phases of the completed development.

The proposed development is made up of Lot D, Lot E and Lot F of DP 33121 and is located on the corner of Bathurst and Lachlan Streets, Liverpool.

For the purpose of this report the proposed development will consist of:

- One 8-level building consisting of three cores (see **Error! Reference source not found.** for Site Plan)
 - o 97 units in total (see Table 1 for Unit Breakdown Matrix)

Table 1: Unit Breakdown Matrix

Building	# Units	% Mix
1 Bedroom	11	11.34
2 Bedroom	76	78.351
3 Bedroom	10	10.309
Total	97	

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

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LIVERPOOL CITY COUNCIL

The assessment of waste volumes is an estimate only and will be influenced by the development's management and occupant's attitude to waste disposal and recycling.

The residential waste and recycling will be guided by the services and acceptance criteria of the Liverpool City Council. The residential waste and recycling will be collected by council.

OBJECTIVES

- Minimise waste generation and disposal to landfill with careful source separation, reuse and recycling
- Avoid the generation of waste through design, material selection and building practices
- Ensure efficient storage and collection of waste and quality design of facilities

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.

Noise minimisation – minimise noise during use by residents and collection of waste and recyclables.

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:

- general maintenance and cleaning of the chute doors on each level (Frequency dependent on waste generation and will be determined based upon building operation);
- 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.

Educational material encouraging correct separation of garbage and recycling items must be provided to each resident to ensure correct use of the waste and recycling chute. This should include the correct disposal process for bulky goods (old furniture, large discarded items, etc.) It is recommended that information is provided in multiple languages to support correct practises and minimise the possibility of chute blockages as well as contamination in the collective waste bins.

It is also recommended that the owners' corporation website contain information for residents to refer to regarding use of the chute. Information should include:

- directions on using the chute doors;
- recycling and garbage descriptions (Council provides comprehensive information);
- how to dispose of bulky goods and any other items that are not garbage or recycling;
- residents' obligations to WHS and building management; and
- how to prevent damage or blockages to the chute (example below).

To prevent damage or blockage to rubbish chute DO NOT dispose of any newspapers, umbrellas, bedding, cigarettes, cartons, coat hangers, brooms, mops, large plastic wrappings from furniture, white goods, any sharp objects, hot liquid or ashes, oil, unwrapped vacuum dust, syringes, paint and solvents, car parts, bike parts, chemicals, corrosive and flammable items, soil, timber, bricks or other building materials, furniture, etc. down the chute.

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

RESIDENTIAL WASTE PLAN

Liverpool City Council's *Waste Management Plan* has been referenced to calculate the total number of bins required for the residential units. Please note that calculations are based on generic figures; waste generation rates may differ according to the residents' waste management practice.

Table 2: Calculated Waste Generation – Residential

Building/ Core	# Units	Waste Calculation (L/unit/week)	Generated Waste (L/week)	Recycling Calculation (L/unit/week)	Generated Recycling (L/week)
Core A	26	120	3120	120	3120
Core B	45	120	5400	120	5400
Core C	26	120	3120	120	3120
TOTAL	97		11640		3120

BIN SUMMARY

The following assumptions have been taken into consideration:

- garbage is not compacted at the base of each chute;
- recycling bins are located in the waste compartment on each level;
- recycling bins will be decanted into 1100L bins for collection; and
- number of bins have been rounded up for best operational with outcome.

Using the assumptions stated, the required capacity and quantity of garbage and recycling bins have been calculated and tabulated respectively in the following table using the council's provided bin allocation specifications.

Table 3: Bin Summary – Residential

Building/ Waste Rooms	Garbage			Recycling				
	Bin Capacity (L)	Quantity	Collection Rate (times/week)	Bin Capacity (L)	Quantity	Bin Capacity (L)	Quantity	Collection Rate (times/week)
Core A	1100	2	2	240	8	1100	2	2
Core B	1100	3	2	240	12	1100	3	2
Core C	1100	2	2	240	8	1100	2	2
TOTAL		7			28		7	

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 MANAGEMENT

Three waste chutes will be supplied by Elephants Foot and installed. Breakdown is as follows:

Core A: single waste chute
Core B: single waste chute
Core C: single waste chute

Garbage discharges into 1100L MGBs which is not compacted. The discharge is located in the waste rooms at the base of each core. Recycling bins will be situated in the waste compartment on each residential level for collection of recyclable items. Full 240L recycling bins will be decanted into larger 1100L MGBs using a bin lifter for collection by Council. Full waste and recycling bins will be transferred to the nominated collection area on Ground Floor (see **Error! Reference source not found.** – Ground Floor Plan) for servicing by Council.

WASTE HANDLING

WASTE

All residents of each building will be supplied with a collection area in each unit (generally in the kitchen, under bench or similar alternate area) to deposit garbage and collect recyclable material suitable for one days storage. Residents should wrap or bag their waste. Bagged waste should not exceed 3kg in weight or 35cm x 35cm x 35cm in dimension.

The caretaker/cleaner will be required to check the 1100L MGB collecting waste from each chute, rotate full bins to the storage and collection area, and replace empty 1100L MGB under each chute operation.

RECYCLING

Cardboard furniture boxes or large cardboard containers should not be included in the waste chute – a cardboard collection bin will be made available to residents to deposit flattened cardboard and will be managed by the waste caretaker. Bins will be located in the waste rooms at the base of each core.

Recycling must not be bagged. It is recommended that residents use a crate or dedicated bin for collecting recyclables within the allocated residential space provided to ensure correct separation.

The caretaker/cleaner is responsible for exchanging and emptying recyclable bins into the larger 1100L MGBs via bin lifter and storing them in each waste room at the base of each core, until required to transfer them to the nominated collection area on Ground Floor on collection day.

TEMPORARY STORAGE OF BULKY GOODS

Council states that a room or caged area must be allocated for the storage of discarded residential bulky items. The allocated space must be a minimum of 6m³ with a minimum height of 2m. This area should be made available close to the collection area. It is envisaged that bulky goods will be managed by the appointed waste caretaker/s. Residents will be required to liaise with building management regarding all bulky goods movements.

It is recommended that donations to charitable organisations be encouraged. Clean, sound furniture and household goods etc. are highly sought after to provide for the disadvantaged. Donations will be arranged with the assistance of the building manager/caretaker.

OTHER WASTE STREAMS

Disposal or recycling of electronic, liquid waste and home detox (paint/chemicals etc.) will be organised with the assistance of the building caretaker. These items must not be placed in waste or recycling bins due to safety and environmental factors. Recyclable electronic goods include batteries, equipment contained printed circuit boards, computers, televisions, fluorescent tubes and smoke detectors.

Residents should be directed to Council's comprehensive website for further information.

COMPOSTING

A space for composting and worm farming is recommended to be made available for all residents in a communal facility or in small private courtyards (see *APPENDIX C.4 for Typical Worm Farm Specifications*). Residents may also choose to purchase and install apartment style compost bin where practical and self-manage these systems (see *APPENDIX C.5 and APPENDIX C.6 for Typical Compost Bins*). Two systems have been included for consideration however there are a variety of compost systems available at hardware stores.

COMMON AREAS

The lobbies, retail amenities and circulation areas will be supplied with suitably branded waste and recycling bins, where considered appropriate. Building management will monitor use and ensure bins are exchanged and cleaned. These areas generate negligible waste however garbage and recycling receptacles should be placed in convenient locations.

GREEN WASTE

There will be green waste generated by the buildings landscaped areas. Any green waste will be collected and removed from site by the maintenance contractor during scheduled or arranged servicing of these areas.

WASTE CHUTES

Waste chutes for each level of each core are supplied per the following specifications:

- either 510mm galvanised steel or 510mm recycled LLDPE polyethylene plastic;
- galvanised steel chute hoppers are wrapped with 50mm poly-wool R1.3 noise insulation foil to assist in noise reduction;
- penetrations on each building level at vertically perpendicular points with minimum penetration dimensions of 600mm x 600mm (square or round) are required to accommodate the chute installation;
- a wash down system and vent should also be included as part of the chute system;
- council and supplier require that all chutes are installed without offsets to achieve best practise operationally for the building; and
- two hour fire-rated (AS1530.4-2005) stainless steel refuse chute doors at each service level. All doors are to be fitted with a self-closing mechanism to meet BSA fire standards.

NOTE: Chute doors are installed after walls rendered, painted or when required. Information stickers will be placed on each chute door at each residential level.

EQUIPMENT SUMMARY

Table 4: Equipment Summary

Component	Part	Quantity	Notes
Chutes	Galvanised Steel / LLDPE Polyethylene Plastic	3	Chute Diameter (See APPENDIX C.1 for Typical Chute Section)
Equipment A	Garbage Linear Tracks for 1100L MGB with not compacted	3	(See APPENDIX C.2 for Typical Linear System)
Equipment B	Bin Lifter	1	(See APPENDIX C.8 for 240L Bin Lifter)
Equipment C	Suitable Bin Moving Equipment	1	(See APPENDIX C.3 for Typical Bin Mover)

WASTE ROOM AREAS

Each waste room at the base of each core will need to accommodate a 2-bin 1100L linear track, and the total number of 1100L bins for both waste and recycling. Space will also need to be allocated within one of these rooms for the bin lifter. Additional to this, there must be space made available to clean and safely manoeuvre bins (generally 10m² additional to the raw space required for bins and equipment).

The minimum areas required for each residential waste room, bulky goods and collection areas are detailed in **Error! Reference source not found.** below.

Table 5: Waste Room Areas

Location	Waste Room Type	Allocated Area
Level -1	Core A Waste Room	30.0 m ²
Level -1	Core B Waste Room	33.1 m ²
Level -1	Core C Waste Room	30.0 m ²
Ground Floor	Collection Area	23.8m ²
TBA	Bulky Goods Room	6.0m ³

COLLECTION OF WASTE

RESIDENTIAL

It is proposed that Council will collect both waste and recycling bins from Bathurst Street twice weekly from the nominated collection area (see APPENDIX A.1 – Ground Floor Plan).

It will be the responsibility of the caretaker/building manager to transport bins from each waste room to the nominated collection area via the service lift to the south of the development for collection by council, and return them once emptied. (See APPENDIX A.2 – Level -1 Plan)

COLLECTION AREA

The collection area will need to be reviewed by a traffic consultant to confirm that these (and other trucks if required) can service the development safely and with minimal interruption to vehicles utilising Bathurst Street. The final number of truck movements will depend on management of waste contract; final configuration of waste and recycling arrangements therefore number of bin lifts and additional irregular truck movements for hard waste.

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.

- If you choose to use the metal bins collected by a front lift vehicle, a built enclosure is not ideal for servicing due to constant moving, pushing and lifting of bins. Consideration should be given to providing an opened area screened off by a gate or screen and needs to be located close to access point for ease of servicing. Front Lift truck must be able to drive straight into the waste storage area to access the bin.
- The bin storage area opening and access path for onsite collection must have clearance of all other vehicles and obstacles for safe and easy access by waste collection vehicles. Signage to this affect is necessary.

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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*). 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.

All chute doors on all residential levels will be labelled with signs directing chute operations and use of chute door.

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

DRAFT - NOT FOR DISSEMINATION

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 (WMP) as part of a development application and is supplied by Elephants Foot Recycling Solutions (EFRS) 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.

Liverpool City Council Customer Service

Phone: 1300 362 170

Email: lcc@liverpool.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

RELIVIT

Phone: 1300 247 732

Email: <mailto:info@relivit.com.au>

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

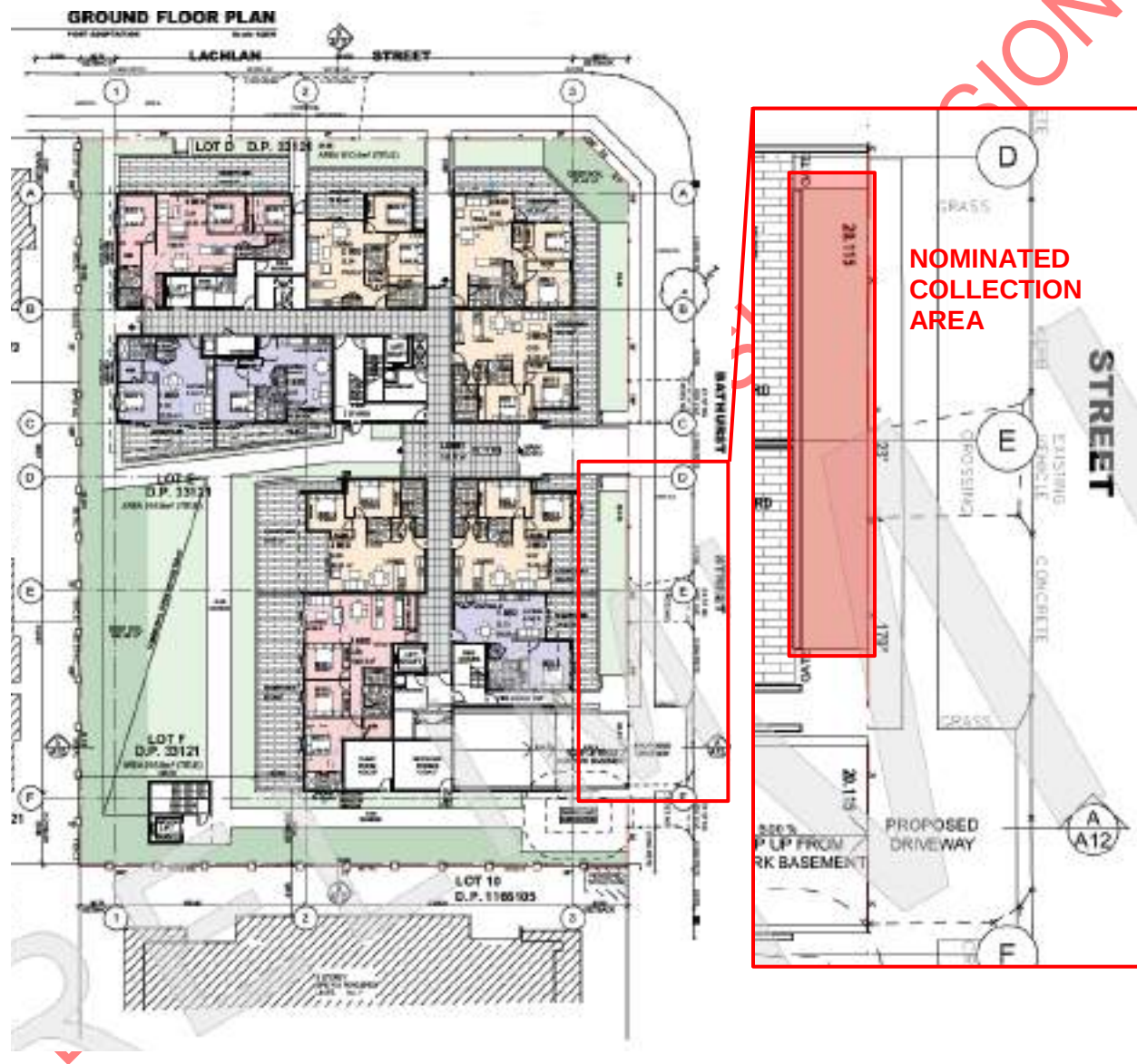
Free call: 1800 025 073

Email: natalie@elephantsfoot.com.au

APPENDICES

APPENDIX A DRAWING EXERPTS

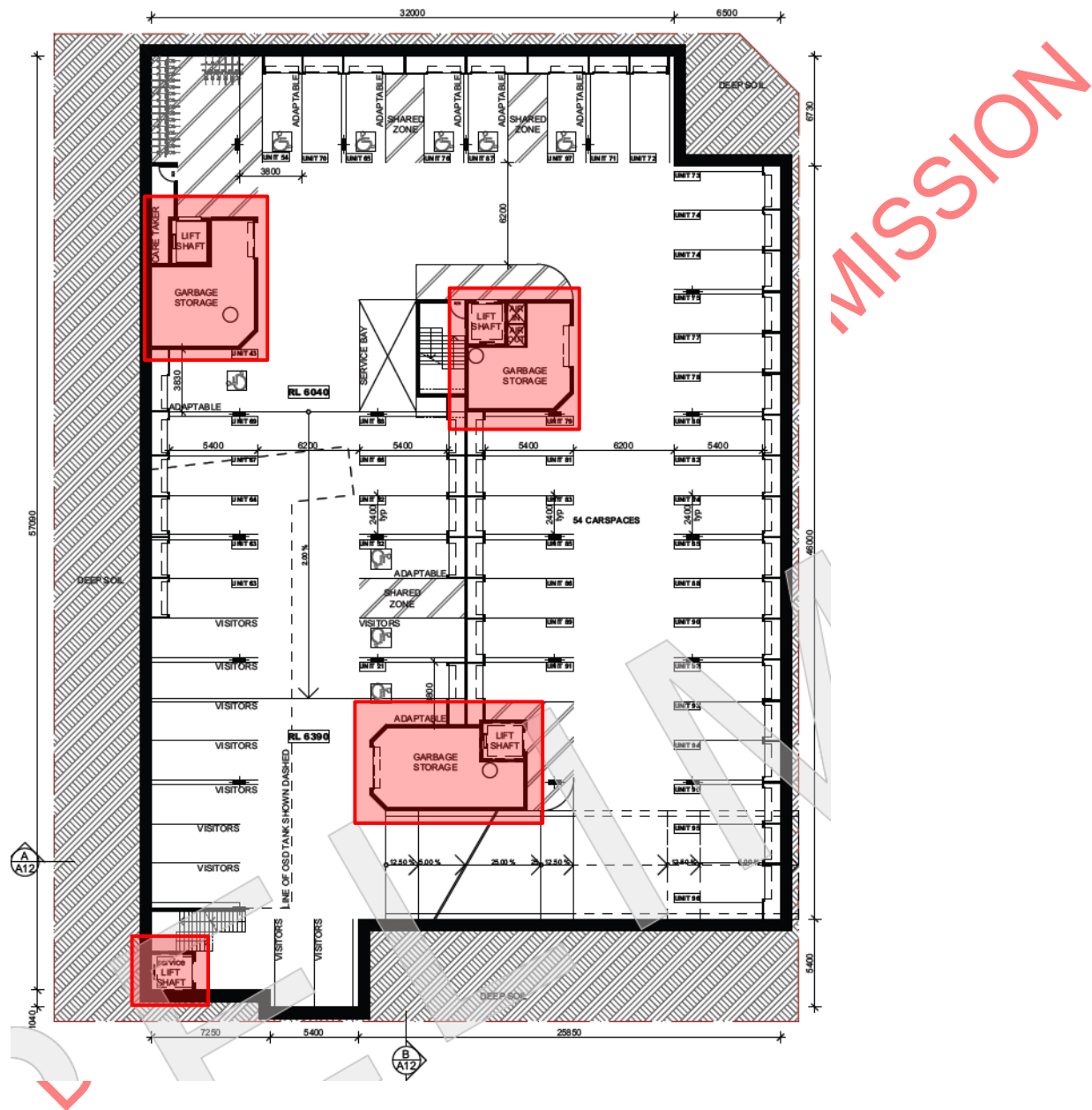
APPENDIX A.1 GROUND FLOOR PLAN



Source: Villa + Villa & Algorry Zappia & Associates Pty Ltd, Title: Floor Plan, Sheet # A06, Date: June 2016

ELEPHANTS FOOT WASTE COMPACTORS PTY LTD ABN 70 001 378 294
Sydney Head Office 44-46 Gibson Ave Padstow NSW 2211 | PH: +612 9780 3500 | Fax: +612 9707 2588
Website: www.elephantsfoot.com.au | Email: info@elephantsfoot.com.au
Offices in Victoria & Queensland – Toll Free: 1800 025 073

APPENDIX A.2 LEVEL -1



Source: Villa + Villa & Algorry Zappia & Associates Pty Ltd, Title: Floor Plan, Sheet # A05, Date: June 2016

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APPENDIX B LIVERPOOL CITY COUNCIL SPECIFICATIONS

APPENDIX B.1 BIN DIMENSIONS AND SPECIFICATIONS

Bin Types	Bin Allocation for Proposed Units- Weekly Service	Bin Allocation for Proposed Units- Twice weekly Service	Truck Required To Service Bin
240 litre mobile bin*	1 per 2 units	1 per 4 units	Side lift
360 litre mobile bin**	1 per 3 units	1 per 6 units	Side lift
660 litre bulk plastic bin	1 per 6 units	1 per 12 units	Rear Lift
1100 litre bulk plastic bin	1 per 9 units	1 per 18 units	Rear Lift
1m3 metal bin	1 per 8 units	1 per 16 units	Front lift
1.5m3 metal bin	1 per 13 units	1 per 26 units	Front lift
3 m3 metal bin	1 per 25 units	1 per 50 units	Front lift
4.5m3 metal bin	1 per 38 units	1 per 76 units	Front lift

Waste Storage area or enclosure must be of sufficient size to cater for the required number of bins. Below are the dimensions and footprint for each type of bin available. When designing waste storage areas, consideration needs to be also made for accessing and manoeuvring of bins.

Bin Receptacle	Length (mm)	Width (mm)	Height (mm)	Bin Footprint (m ² /bin)
140L	640	535	920	0.27
240L	730	580	1060	0.42
360L	865	650	1100	0.42
660L	1420	780	1210	1.16
1100L	1420	1100	1270	1.71
1m ³	1740	1100	1100	0.99
1.5m ³	2040	1250	1220	1.46
3m ³	2040	1650	1590	2.10
4.5m ³	2040	1995	1830	3.20

APPENDIX B.2 SIGNAGE FOR WASTE & RECYCLING BINS

WASTE SIGNS

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the Department of Environment and Heritage.

Example wall posters



Example bin lid stickers



SAFETY SIGNS

The design and use of safety signs for waste rooms and enclosures should comply with AS1319 Safety Signs for Occupational Environment. Safety signs should be used to regulate and control safety behaviour, warn of hazards and provide emergency information, including fire protection information. Below are some examples. Each development will need to decide which signs are relevant for its set of circumstances and service provided.

Examples of Australian Standards:



Australian Standards are available from the SAI Global Limited website (www.saiglobal.com).

Source: Better Practice Guide to Waste Management in Multi-Unit Dwellings, 2008, DECC

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Website: www.elephantsfoot.com.au | **Email:** info@elephantsfoot.com.au
Offices in Victoria & Queensland – **Toll Free:** 1800 025 073

APPENDIX B.3 TYPICAL COLLECTION VEHICLE INFORMATION

Vehicle	Length	Width	Height	Servicing height	Weight (loading)	Turning Radius
Side	9.5m	2.5m	3.5m	3.5m	23.0t	Kerb to kerb 10.3m Wall to Wall 11.0m
Rear	9.9m	2.5m	3.4m	3.4m	22.5t	Kerb to kerb 10.5m Wall to Wall 11.5m
Front	10.2m	2.5m	4.3m	6.4m	27.5t	Kerb to kerb 12.3m Wall to Wall 13.2m

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APPENDIX C.1 TYPICAL CHUTE PLAN & ELEVATION



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APPENDIX C.3 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:

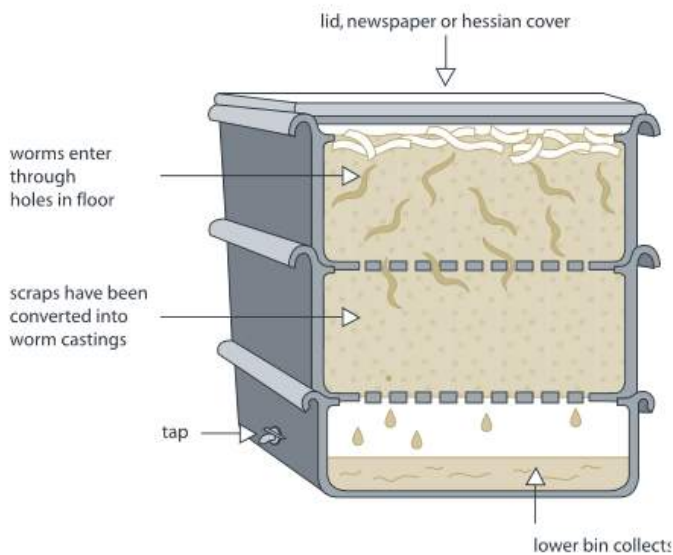
- Up to 1 Tonne on a ramp surface (depending on ballast and incline)
- Anti-rollback system on slopes
- Foot print: 1548L x 795W x 1104H (handle in the drive position)
- Pin Hitch is standard however alternate hitching options may be available to suit your specific application (e.g. tow ball)

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.4 TYPICAL WORM FARM SPECIFICATIONS

Worm farms



Space requirements for a typical worm farm for an average household:

Height – 300mm per level

Width – 600mm

Length – 900mm

There are many worm farm arrangements.
The above dimensions are indicative only.

SOURCE: Department of Environment and Climate Change NSW 2008, *Better Practice Guide for Waste Management in Multi-Unit Dwellings*

DRAFT - NOT FOR

APPENDIX C.5 TYPICAL APARTMENT STYLE COMPOST BINS



Apartment Style Compost bin – available from hardware stores

Suitable for:

- Vegetables
- Coffee grounds and filters
- Tea and tea bags
- Crushed eggshells (but not eggs)
- Nutshells
- Houseplants
- Leaves
- Cardboard rolls, cereal
- Boxes, brown paper bags
- Clean paper
- Shredded newspaper
- Fireplace ashes
- Wood chips, sawdust,
- Toothpicks, burnt matches
- Cotton and wool rags
- Dryer and vacuum cleaner lint
- Hair and fur
- Hay and straw

APPENDIX C.6 ELECTRIC ORGANIC COMPOST BIN



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 760 mm

* Food Waste Handling Capacity - based on an optimal operating environment

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

SOURCE: Closed Loop Domestic Composter – See Useful Contacts

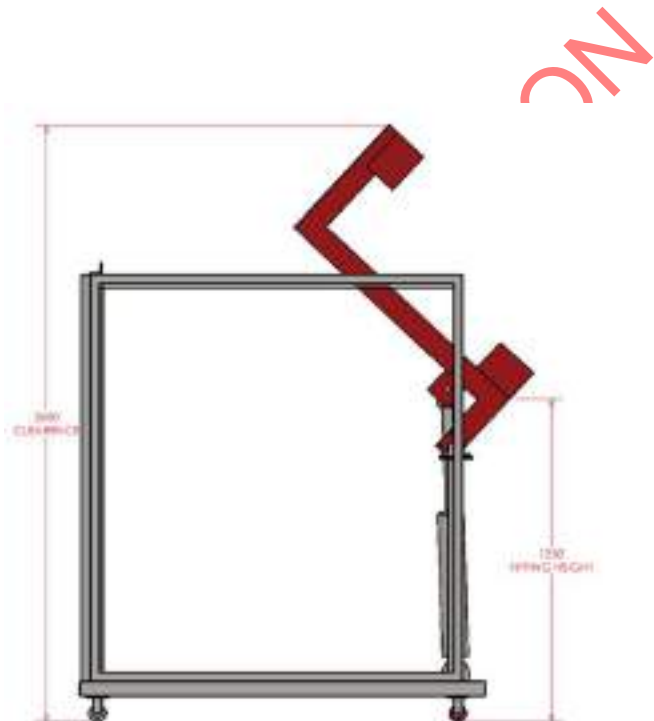
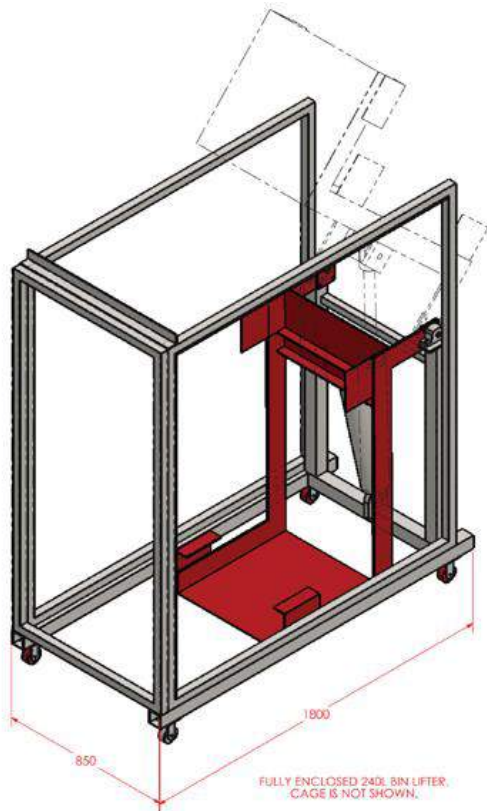
APPENDIX C.7 TYPICAL PUBLIC PLACE WASTE BINS



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

SOURCE: SULO Environmental Technology

APPENDIX C.8 240L BIN LIFTER



ELECTRICAL

Input voltage:
240V single phase
10amp

FEATURES

Safety cage
Control box
Compatible with 120L and 240L MGBs
Suitable to tip into bins, dumpsters and compactors

Warranty:
12 months warranty

MECHANICAL

Dimensions:
2850mm(H) x 850mm(W) x 1800mm(D)

Tipping Height:
1350mm variable

Clearance Height:
2650mm

Lifting Capacity:
140kg

Appendix G

Tables of Compliance

Table 1 – Statutory Provisions – Compliance Assessment

Control	Proposed Development	Consistency
State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development		
As required by SEPP 65, the Apartment Design Guide (ADG) is to be considered in the design of the building. The DA documentation must show compliance with the relevant controls, in particular unit sizes (internal and external), storage areas, natural light, deep soil, communal areas and cross ventilation. The lobbies and corridors should be provided with natural light and ventilation.	The proposed development has considered the ADG principles within Section 3 of the SEE and the SEPP 65 Design Statement included at Appendix B .	Complies
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004		
A valid BASIX Certificate is required to be submitted as part of the DA with the provisions/components of the BASIX identified on the plans.	A BASIX Certificate has been prepared by Building & Energy Consultants Australia and is included at Appendix G .	Complies

Table 2: Liverpool Local Environmental Plan 2008 – Compliance Assessment

Control	Proposed Development	Consistency
Clause 4.1- Minimum Lot Size The size of any lot resulting from a subdivision of land to which this clause applies is not to be less than 2000sqm.	No subdivision proposed.	N/A
Clause 4.3 – Height of Buildings A maximum height of 35m is permitted for the site.	The maximum height of the proposed building is 28.5m.	Complies
Clause 4.4 – Floor Space Ratio (FSR) Although the LEP FSR map identifies a maximum FSR of 2:1 applying to the site, the maximum FSR permitted for the site in accordance with Clause 4.4(2B) is 3:1.	The proposed development comprises an FSR of 3.07:1. Appendix J outlines the proposed Clause 4.6 variation, which justifies a deviation from this numerical standard by 0.07:1. Strict compliance would not result in any adverse impacts to surrounding development, such as overshadowing, views or privacy. The height and scale of the proposed development is also compatible with surrounding existing and likely future development.	Justified
Clause 5.9 – Preservation of trees or vegetation A person must not ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation to which any such development control applies without the authority conferred by: a) Development consent, or b) A permit granted by the Council.	As part of this application, development consent is sought for the removal of three trees on the site. The trees are only small in stature, meaning their removal would result in minimal environmental impact. As outlined in the Landscape Plan (Appendix C) the site will be embellished with new landscape features including the planting of new trees along the perimeter of the communal open space within the deep soil zones.	Complies if consent granted
Clause 5.10 – Heritage Conservation Council is to assess the potential impact of the development on the heritage significance of the heritage item or heritage conservation area or land within the vicinity of a heritage item or conservation area.	The site is not identified as a heritage item or as being located within a heritage conservation area within LEP 2008. However, both Lachlan and Bathurst Streets are listed as General Heritage Items. The proposed development does not incorporate any changes to these streets, and will not detract from the heritage significance of the items.	Complies

Clause 7.4 – Building Separation in Liverpool City Centre
Development consent must not be granted to development for the purposes of a building unless the separation distance from neighbouring buildings and between separate towers, or other separate raised parts, of the same building is at least:

a) 12 metres for parts of buildings between 25 metres and 45 metres above ground level (finished).

The building is not strictly compliant with this clause, as it is positioned 7.5m from the adjoining building at 2 Castlereagh Street. This is raised in the ADG Compliance Table (**Appendix L**), prepared by Villa and Villa architects. It is noted that in all instances where the required separation is not achieved, obscure windows will be fitted to ensure privacy requirements are upheld, while also providing ventilation and light access.

Justified

A Clause 4.6 Variation is attached in **Appendix K**, which justifies a departure from the numerical standard on the following grounds:

- A lesser separation distance will not compromise the visual appearance of the development. Adjoining developments to the south of similar scales exhibit separation distances of 8m between 7+ storey residential developments, therefore the development maintains the established setback character in the precinct.
- High-mounted, obscure glass windows will be installed on all walls looking towards the south and west boundaries. These will ensure visual privacy is maintained, while still creating a suitable habitable space.
- Solar access will not be compromised. The shade diagrams demonstrate that all surrounding development will receive at least 2 hours of direct sunlight: an outcome that comfortably meets environmental planning requirements. Spaces of habitation in the development itself will also have good solar access, with high-mounted windows designed to maximise sunlight exposure. The section of the building with the smallest separation distance also has uninterrupted access to northern sunlight.

Clause 7.5 – Design Excellence in Liverpool City Centre
Development consent must not be granted to development involving the construction of a new building unless the consent

The proposed development has been assessed against the design principles of the ADG. The Design Statement in **Appendix B** and ADG Compliance Table in **Appendix K** have been prepared by Villa and Villa

Complies

authority considers that the development exhibits design excellence.

Architects, and thoroughly appraise the proposed development. They demonstrate its merit and confirm that the design accurately reflects the required principles.

The proposal exhibits a high level of architectural design excellence due to the range of quality building materials utilised in the facades and the extent of modulation proposed. The base, middle and uppermost sections of the building are separately defined through the use of contrasting finishes, colours and protruding elements which help to successfully articulate the structure.

Clause 7.8– Flood Planning

Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

- (a) is compatible with the flood hazard of the land, and
- (b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and
- (c) incorporates appropriate measures to manage risk to life from flood, and
- (d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and
- (e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding, and
- (f) is consistent with any relevant floodplain risk management plan adopted by the Council in accordance with the Floodplain Development Manual.

The development sits on land that is within the Flood Planning Area, but is compatible with the associated flood risk. A Stormwater Concept Plan has been prepared by SGC Consultants Pty Limited and is included at **Appendix D**. It demonstrates that the proposed development will not result in the disruption of natural drainage patterns and thus will not impact surrounding properties. The development's location away from the riparian corridor, and use of comprehensive sediment filtration systems also means that erosion is avoided.

The habitable levels of the development are built 0.5m freeboard above the 1:100 ARI height. Pumps rated to a 1:100 year storm event will also be installed in the basement, to ensure any flooding of lower levels can be quickly managed. These measures ensure that the highest predicted flood waters cannot reach living areas of the development, and that any flooding in the basement can be quickly pumped out to minimise damage to property.

Further to this, the development is in line with the Liverpool CBD Floodplain Risk Management Study and Plan, developed in line with the Floodplain Development Manual in 2007. It satisfies following key assessment criteria, as outlined in Clause 6.3 of the manual:

- Financial feasibility: the measures can be fully funded.

Complies

- Economic benefit: the benefits exceed the cost, protecting life and property.
- Community Acceptance: the use of integrated water management systems and design aligns with the public interest.
- Environmental Impact: the proposed measures are largely internal, and will minimise sediment output.
- Impact on flood behaviour: aside from pumps, the methods are designed to avoid impacts to habitable areas within the development. As the development is outside the floodway, the Stormwater Concept Plan does not anticipate changes in velocity and direction.
- Performance in Large Floods: the development falls within an acceptable risk category, with habitable levels above the 1:100 year mark.
- Technical Feasibility: detailed plans have been drawn to ensure the construction contractor can implement the measures.
- Political Impact: no far-reaching political impacts are anticipated.

Clause 7.14 – Minimum Building Street Frontage

Development consent must not be granted to development for the purpose of a residential flat building unless the site on which the building is to be erected has at least one street frontage to a public street (excluding service lanes) of at least 24 metres.

The site has a 57m frontage to Bathurst Street and 42m frontage to Lachlan Street and complies with this standard. **Complies**

Clause 7.31 – Earthworks

Before granting development consent for earthworks, Council is to consider the following:

- a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality,
- b) the effect of the development on the likely future use or redevelopment of the land,
- c) the quality of the fill or the soil to be excavated, or both,

A Stormwater Concept Plan has been prepared by SGC Consultants Pty Limited and is included at **Appendix D**. It demonstrates that the proposed development will not result in the disruption of drainage patterns and soil stability in the locality. **Complies**

The suggested earthworks will involve a cut of up to 9.5m to accommodate the basement car parking levels.

- d) the effect of the development on the existing and likely amenity of adjoining properties,
- e) the source of any fill material and the destination of any excavated material,
- f) the likelihood of disturbing relics,
- g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area.

Excavation works will not affect surrounding development. As outlined in the Waste Management Plan (**Appendix E**), the head contractor will be responsible for ensuring the sustainable management of all excavated materials.

The site does not sit on an area of known heritage significance, so the likelihood of disturbing relics is minimal, especially as the site has already been cleared and developed. The site is also not in close proximity to any sensitive lands, posing little risk of excavated material harming surrounding ecosystems or water supplies.

Table 3 – Liverpool Development Control Plan 2008 – Compliance Assessment

Control	Proposed Development	Consistency
Part 1 – General Controls for Development		
Section 2- Landscaping and Incorporation of Existing Trees Land will need to provide landscaping or retain existing trees as part of a development.	Landscaping appropriate to the context of the site will be installed as part of this development. The Landscape Plan, included at Appendix C , identifies that the landscape area covers 25% of the site area and includes a perimeter landscape treatment, including street frontages and deep soil zones.	Complies
Section 6 – Water Cycle Management Buildings are to incorporate appropriate stormwater management systems.	A Stormwater Concept Plan has been prepared by SGC Consultants Pty Limited and is included at Appendix D . It details the appropriate stormwater management systems in place to satisfy the conditions of this section.	Complies
Section 8 – Erosion and Sediment Control Appropriate erosion and sediment control measures are to be incorporated both during and following works.	A Stormwater Concept Plan has been prepared by SGC Consultants Pty Limited and is included at Appendix D . Appropriate erosion and sediment control measures are incorporated both during and following works to ensure this requirement is met.	Complies
Section 14 – Demolition of Existing Developments All demolition work must comply with the relevant Australian Standards. Further, a Waste Management Plan is to be submitted with the DA to provide details on the estimated amount of waste generated and how it will be appropriately managed during the various phases of development.	All demolition works will comply with the relevant Australian Standards. A Waste Management Plan, prepared by Elephants Foot Recycling Solutions included at Appendix E details how demolition waste will be controlled, managed on-site and disposed of to the relevant waste management facilities.	Complies
Section 20 – Car Parking and Access 1. Car parking spaces are to be provided in accordance with Section 4.3 of Part 4 of the DCP.	The development provides car parking above the minimum rates specified in the Liverpool DCP, providing for a total of 112 parking spaces for cars on site and 42 bicycle spaces.	Complies
Section 22 – Water Conservation New dwellings are to demonstrate compliance with State	The BASIX Certificate found at Appendix G demonstrates compliance with this section.	Complies

Environmental Planning Policy – Building Sustainability Index (BASIX).

Section 23 – Energy Conservation

New dwellings are to demonstrate compliance with State Environmental Planning Policy – Building Sustainability Index (BASIX).

The BASIX Certificate found at **Appendix G** demonstrates compliance with this section.

Complies

Section 25 – Waste Disposal and Re-use Facilities

1. A waste management plan shall be submitted with a DA to outline the amount of waste expected to be generated and how it will be appropriately disposed of during the three phases of development.
2. Waste management facilities shall be provided and designed to ensure that the storage and collection of waste is user friendly for the occupant and waste collection contractor.
3. For buildings greater than three storeys a waste room or compartment must be provided on each floor of the building for the intermediate storage of garbage and/or recycling. Sufficient space must be allocated for access by residents, storage of bins and each manoeuvring of bins.

Garbage disposal shoots are located on every floor adjacent to each of the three lift shafts (refer to **Appendix B**). Garbage shoots will discharge into three separate 1100L mixed garbage bins, located on lower level 1 at the base of each shoot. The number of bins and size of compactors required will be detailed in a Waste Management Plan included at **Appendix E**. All facilities will be user friendly to ensure good environmental outcomes, in relation to waste management.

Complies

Part 4 – Development in Liverpool City Centre

Section 2.1- Building Form

Building to Street Alignment and Street Setbacks

1. A 4m landscaped street setback must exist.
2. The external facades of buildings are to be aligned with the streets that they front.

A setback of 4.5m to the building wall is provided to Bathurst Street. A similarly compliant frontage also exists to the Lachlan Street boundary. All external facades are aligned with the streets they face. Balconies are largely built into the footprint of the building; however the proposed 0.5 metre encroachments into the minimum setback areas are permitted under the DCP.

Justified

The building height, measured at the DCP-mandated 4.5m setback, at Bathurst Street and

Street Frontage Heights

A street frontage height of between 15-25m is required in this area.

Building Depth and Bulk

Above 25m in height. The gross floor area permitted above this height is 20% of the total gross floor area of the development, up to the maximum permissible height shown on the Height of Buildings map in the Liverpool LEP 2008. A maximum GFA of 500sqm per floor is required.

Boundary Setbacks

Habitable rooms:

Side- 3m

Rear- 6m

Non-habitable rooms:

Side- 12m

Rear- 12m

Lachlan Streets is taken to be 28.5m. This exceeds the nominated frontage height of 25m by 3.5m. A variation is considered justified in this particular instance because the bulk of the building has been positioned to address the street frontages at the north-eastern corner of the property. The building otherwise complies with the maximum building height permitted under the LEP and does not cause significant overshadowing beyond what a strictly compliant form would otherwise produce.

The building bulk at the upper levels is reduced through the design of balconies and modulation incorporated into the streetscape facades. The ninth floor of the development exceeds the GFA guideline, with a GFA of 906.28sqm above a height of 25m. This non-compliance is deemed to be justified in that the bulk of the building is overcome through the use of modulation and highly articulated facades, satisfying the intent of this control.

All habitable rooms are greater than 3m from the side boundary and 6m from the rear boundary. Additionally, non-habitable rooms are greater than 12m from the side and rear boundaries. As such, the proposed development is compliant in this regard.

Section 2.3 – Site Cover and Deep Soil Zones

1. The maximum site cover for residential development is 50%.
2. The deep soil zone shall comprise no less than 15% of the total site area and they must accommodate existing mature trees as well as allowing for the planting of trees/shrubs that will grow to be mature plants. No dimension of these zones should be less than 6m.

1183.00m² or 30% of the site area will be covered. The deep soil area comprises of 13% of the area, and is compliant with the Apartment Design Guidelines at 350.2m². **Justified**

Section 2.4 – Landscape Design

- 1- Landscape species are to be selected in accordance with Council's planning schedule.
- 2- Landscaped areas are to be irrigated (with recycled water).
- 3- Public spaces are to be designed so that at least

Landscape features will be selected in accordance with Council guidelines. Further information can be found in the Landscape Plan in **Appendix C**. **Complies**

The building has been designed to ensure that the public domain receives the required amount of sunlight. Shade diagrams found in **Appendix B** illustrate the placement of

50% of the open space provided has a minimum of 3 hours of sunlight between 10am and 3pm on 21st June.

shadows in relation to the building, and provide evidence of compliance with this section.

Section 3.2 – Active Street Frontages and Address

Residential developments are to provide a clear street address and direct pedestrian access off the primary street front, and allow for residents to overlook all surrounding streets.

The development will provide a clear street address and provide adequate direction for pedestrians. Balconies (see **Appendix B**) will complement carefully positioned windows in giving residents views over Bathurst Street and Lachlan Street.

Complies

Section 3.4 – Safety and Security

1. All development is to address the 'Safer by Design principles' to ensure developments are safe and secure for pedestrians and occupants.

The development fully addresses the safer by design principles. Balconies and windows will facilitate casual surveillance over communal spaces and access points, while well-lit entry points will ensure of safe access and the minimisation of dark alcoves.

Complies

Section 3.5- Awnings

Street frontage awnings are to be provided for all new developments. The DCP stipulates that weather protection must be provided to entrances of building constructed within the Liverpool City Centre,

As indicated in **Appendix B**, the design has structures in place to ensure entrances are given adequate protection from the weather.

Complies

Section 3.6 – Vehicle Footpath Crossings

Location and Design of Vehicle Access

1. One additional vehicle entry point is permissible in the area of this site.
2. Ensure vehicle entry points are integrated into the building design

Architectural Plans held at **Appendix B**, show the proposed construction of a single driveway, located away from main pedestrian entry points. It is designed to not dominate the street frontage of the building and is fully integrated into the building design.

Complies

Section 3.8 – Building Exteriors

Building materials and façade treatments are to positively contribute to the streetscape and public domain.

The Architectural Plans held at **Appendix B** lay out the material to be used for the proposed development, and provide evidence of their quality. Through careful selection by the

Complies

architect, they will positively contribute to the streetscape and public domain.

Section 4 – Traffic and Access

Section 4.1 - Pedestrian Access and Mobility

1. Main entry points should be clearly visible from primary street frontages and enhanced as appropriate.
2. The design of facilities for disabled persons must comply with the relevant Australian Standards.
3. Pedestrian access ways are to be designed to enable easily accessible internal access as well as be made with durable materials.

As shown in the Architectural Plans held at **Appendix B**, the main entry points that face primary street frontages are appropriately enhanced. Pedestrian access points will be made from durable materials and will comply with AS 1428 Pt 1 and 2 as required.

Complies

Section 4.2 – Vehicular Driveways and Manoeuvring Areas

1. Vehicle access is to be integrated into the building design so as to be visually recessive.
2. All vehicles must be able to enter and leave the site in a forward direction.
3. The design of the driveways, car parking spaces etc. are to meet the relevant Australian Standards.

The vehicular entrance and driveway into the development from Bathurst Street has been recessed and is designed so as to not overwhelm the façade.

Complies

All vehicles entering and leaving the site will do so in a forward direction.

The driveways, both external and internal to the building, swept paths and car parking space dimensions have been designed in accordance with AS2890.1-6.

Section 4.2 – On Site Car Parking

1. Car parking and bicycle spaces are to be provided in accordance with the table outlined within Section 4.2 of DCP 2008.
2. All parking spaces are to meet the relevant Australian Standards.
3. A minimum of 2% of the required car parking spaces are to be allocated to people with disabilities.
4. Onsite parking is to be provided in basement parking.
5. For commercial development comprising employment for 20 persons or more, adequate change and shower facilities are to be provided.

Car parking spaces required:

- 1 space per 1-2 bedroom units= 87 spaces
- 1.5 space per 3 bedroom units= 15 spaces
- 1 visitor space per 10 units= 10

Complies

Car parking spaces provided:

- Residential spaces= 107 (10 accessible)
- Visitor spaces= 10
- Service bay= 2
- Motorbike spaces= 6

- Bicycle Spaces= 42

112 spaces required, 117 provided.

Section 5.1 - Energy Efficiency

New dwellings are to demonstrate compliance with State Environmental Planning Policy – Building Sustainability Index (BASIX).

The proposed development has been assessed against the compulsory requirements of BASIX and achieves 21% reduction in energy / greenhouse gas emissions where a 20% target is required.

Complies

Section 5.2 - Water Conservation

New dwellings are to demonstrate compliance with State Environmental Planning Policy – Building Sustainability Index (BASIX).

The proposed development has been assessed against the compulsory requirements of BASIX and achieves 40% reduction in mains supply for water use which complies with the 40% required.

Complies

Section 5.3 – Reflectivity

New buildings and facades should not result in glare that causes or threatens safety of pedestrians or drivers. Visible light reflectivity from building materials must not exceed 20%.

The proposed build will be clad with materials that ensure visible light reflectivity will not exceed 20%. These materials include:

Complies

- Dulux Natural White render;
- Dulux Windspary render;
- Austral Engage brick; and
- Stryum composite metal cladding.

These materials have a matte appearance and are designed to minimise light reflectivity.

Section 5.6 – Waste

1. A waste management plan shall be submitted with a DA to outline the amount of waste expected to be

A Waste Management Plan (WMP) has been prepared by Elephants Foot Recycling Solutions in support of this development application. The plan covers details of how demolition waste will be stored, removed and transported from the site and where the

Complies

generated and how it will be appropriately disposed of during the three phases of development.

2. Waste management facilities shall be provided and designed to ensure that the storage and collection of waste is user friendly for the occupant and waste collection contractor.
3. Space must be available for the storage of 80L/week/dwelling of general waste and of 80L/week/dwelling of recycling.

materials from the existing buildings will be disposed of to the relevant waste management facilities. Likewise, surplus building materials will be managed and stored temporarily on site before being either reused as part of the landscaping / site works or alternatively disposed of at the relevant licenced facilities. Refer to the plan for detail on these processes.

Section 5.7- Floodplain and Water Cycle Management

- The habitable floor level of all dwellings is to be at least 0.5m above the 1% flood level.

The development has been designed in accordance with the minimum 0.5m freeboard level above the 1% flood level applying to the site. The basement car parking area has also been designed so as to be protected from the flood levels. The stormwater management systems developed for the site will easily manage flood waters on site during the 5, 20 and 100 year peak flood levels.

Complies

Section 6 – Controls for Residential Development

Complies

Section 6.1 – Housing Choices and Mix

1. Each residential development is to comply with the following mix and size:
 - Studio and one bedroom units must not be less than 10% of the total mix of units within each development,
 - Three or more bedroom units must not be less than 10% of the total mix of units within each development.
2. 10% of all dwellings must be designed to be capable of adaptation for disabled or elderly residents. Where possible, adaptable dwellings should be on the ground level or have lift access from the basement level to the relevant level within the development.
3. The DA must be accompanied by certification from an accredited Access Consultant confirming that the adaptable units are able to be modified to meet the

10 adaptable units provided.

11 x 1 bedroom units (11.3%)

76 x 2 bedroom units (78.3%)

10 x 3 bedroom units (10.3%)

Adaptable units have been designed and certified by a suitably qualified Access Consultant and is provided appended in the BCA and Access Report prepared by iAccess Consultants.

relevant adaptable housing Australian Standard.
