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APPENDIX T: WASTE MANAGEMENT PLAN

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WASTE MANAGEMENT PLAN

Alterations and Additions to Raymond Terrace Bowling Club and construction of a six-storey 50 room hotel including 5 serviced apartments, restaurant, bar, swimming pool, gym, function space and office spaces.

For
Raymond Terrace Bowling Club

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Our Ref:	22/0380
Project	Alterations and Additions to Raymond Terrace Bowling Club and construction of a six-storey 50 room hotel including 5 serviced apartments, restaurant, bar, swimming pool, gym, function space and office spaces.
Client	Raymond Terrace Bowling Club
Author	Clint Forrester Senior Planner BDevStud, MPIA
Certification	*I certify that to the best of my knowledge the information contained within this Report is neither false nor misleading.*
Signature	
Reviewer	Lachlan Sims Principal Planner BURP, MPIA
Signature	

This report was prepared by Monteath & Powys Pty Ltd.

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APPENDICES

GLOSSARY OF TERMS

TERM	DESCRIPTION
Baler	A device that compresses waste into a mould to form bales which may be self-supporting or retained in shape by wire ties and strapping
Chute	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)
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)
Hopper	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
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
Putrescible Waste	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.

1. INTRODUCTION

This waste management plan covers the demolition and associated works on the subject site and the ongoing management of waste generated by the Proposal at 2 Jacaranda Avenue, Raymond Terrace.

The plan was developed using the *EPA Better Practice Guide for Waste Management & Recycling in Commercial and Industrial Facilities – December 2012*.

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 operators 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 operators and their staff.

The Proposal is for Alterations and Additions to Raymond Terrace Bowling Club and construction of a six-storey 50 room hotel including 5 serviced apartments, restaurant, bar, swimming pool, gym, function space and office spaces. The Proposal will be one (1) development application to be constructed/delivered in three (3) stages, with assessment to cover all three (3) stages. The stages include the following:

1. Alterations and Additions to Raymond Terrace Bowling Club - Including associated parking and the reshaping of the croquet lawn facing Port Stephens Street which includes additional parking for stage one (1) only;
2. Demolition of the existing shade over the Bowling Greens and the construction of a new Bowling Green roof to overhang the Raymond Terrace Bowling Club roof; and
3. Construction of the Hotel - Including associated parking and demolition.

The waste Management plan is accompanied by a ground floor site plan and waste swept paths for the Proposal prepared by *EJE Architecture*. Refer to **Appendix A**.

1.1 OWNER AND SITE DETAILS

The Applicant:

Raymond Terrace Bowling Club Cooperative Limited
C/- Monteath & Powys
PO Box 2270
DANGAR NSW 2309

Contact:

Clint Forrester
Phone: 02 4926 1388

The Owner(s):

The subject site is legally identified as Lot 23 DP 1088281 and Lot 1 Section 23 DP 758871. The site is owned by Raymond Terrace Bowling Club Cooperative Limited.Site details
The Proposal is located at 2 Jacaranda Avenue Raymond Terrace within the Port Stephens Local Government Area.

2. GENERATED WASTE AND 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 off-site in a manner that meets all authority requirements. Please refer to the relevant section of the waste management plan 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 customers or guests will be allowed to transport waste or recyclables from the waste room; customers and guests will only transport their waste to the allocated bin room or rubbish chutes.

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 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 waste disposal and recycling, bin numbers and sizes may need to be altered to suit the building operation.

3. REPORTING

It is recommended that the building manager ensures that all waste service providers submit regular 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.

4. 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 guests to ensure correct use of the waste chute. This should include the correct disposal process for bulky goods. It is recommended that information is provided in multiple languages, where required to support correct practises and minimise the possibility of chute blockages as well as contamination in the collective waste bins.

5. DEMOLITION AND CONSTRUCTION WASTE

The proposed demolition works do not include any heritage items as defined in any draft or adopted Environmental Planning Instrument or any property identified individually by reference to Development Control Plan. The demolition works will comply with *AS2601 – The Demolition of Structures*. There will be no use of explosives and there will be compliance with 'Workcover' Authority requirements.

All services will be sealed off, asbestos disposal will be to 'Workcover' requirements, and the proposed Sediment and Erosion control measures will be installed prior to the commencement of any work.

Effluent from the amenities for which the contractor is responsible shall be discharged into the local sewer system, where available. Otherwise, a portable self-contained toilet of suitable capacity will be used subject to acceptable arrangement for disposal of the effluent.

Littering or dumping of unwanted waste or disposal of surplus construction materials including bitumen, asphalt or concrete on any land around the site is not permitted. Appropriate receptacles will be provided for depositing litter and other waste materials, and their contents disposed of off-site to a suitable waste disposal station on a regular basis. The disposal of chemical, fuel and lubricant containers, solid and liquid wastes shall be in accordance with the requirements of the Principal or the EPA.

Key outcomes are to ensure that recycle and divert from landfill surplus soil, rock and other excavated or demolition materials, wherever this is practical. Also, separately collect and stream quantities of waste concrete, bricks, blocks, timber, metals, plasterboard, paper and packaging, glass and plastics and offer them for recycling where practical. All wastes to be contained on site within a designated area of 10.0m x 10.0m.

If asbestos is encountered during construction or demolition work, measures must be in place in accordance with WorkCover NSW guidelines. Work must not commence until all the necessary safeguards required by WorkCover NSW are fully in place. Contractors who are licensed for asbestos disposal by WorkCover NSW must only carry out the removal and disposal of asbestos from demolition and construction sites.

Waste management measures have been prepared to understand the details regarding site waste generated during the demolition phase of the development as shown in **Table 1**.

Table 1: Waste management measures

Demolition/Construction Stage		
Type of material	**On-site**	**Off-site**
Building Fittings	Removed, sorted and stored.	To salvage yard.
Green Waste	Mulched and re-used where possible.	To landscape suppliers.
Excavation Material (soils)	Sorted and stored on site, re-used where possible.	To approved recycling refuse facility. If unable to be recycled, to an approved landfill.
Glass	Sorted and stored on site.	To approved recycling refuse facility for re-use or crushing.
Bricks	Sorted and stored on site, re-used where possible.	To approved recycling refuse facility for re-use or crushing.
Concrete/Cement Fibre Board	Sorted and stored on site, re-used where possible.	To approved recycling refuse facility for crushing and/or re-use.
Timber	Separated and sorted. Mulched/crushed/cut and re-used where possible.	Where appropriate to an approved salvage yard for weatherboards flooring etc. To approved recycling refuse facility.
Plasterboard	Sorted and stored, broken-down and re-used where possible in accordance with the NSW Resource Recovery Exemption (RRE) for Plasterboard.	To approved recycling facility for crushing or re-use.
Metals	Sorted and stored.	To approved recycling refuse facility.
Asbestos (if any)	Treated and wrapped (if any)	To an approved refuse facility.
Plastics/packaging	Sorted and stored.	To approved recycling refuse facility or where unable to the recycled to approved landfill.

As it is premature to outline and source or location of particular providers for waste during the demolition and construction phases, mainly as a contractor is yet to be appointed. A Construction Environmental Management Plan (CEMP) will be prepared prior to construction. The CEMP is to provide transparency and demonstrate a commitment to environmental conservation during the demolition and construction phases, and provide a management framework to address potential waste streams associated with the demolition and construction of the project.

The CEMP will include a range of environmental control measures and procedures to address the requirements in relevant Management Plans. The CEMP will include the following Management Plans:

- Erosion & Sediment Control Plan
- Incident / Emergency Management Plan; and
- Demolition and Construction Waste Management Plan.

The waste management plan shall include the following criteria as shown in **Table 2**.

Table 2: Waste management criteria

WASTE MANAGEMENT PLAN		
Ensure waste is disposed of in compliance with the requirements of *Waste Avoidance and Resource Recovery Act, 2001* at a waste facility licensed to accept the type of waste presented.	Site Manager	Ongoing during operations
All wastes will be properly classified and appropriately stored in accordance with guidelines and regulations. Incompatible materials will be stored separately from one another.	Site Manager	Ongoing during operations
Ensure that wastes are contained and isolated from ground and surface water surrounds and treatment or collection does not result in long term impacts on the natural environment.	Site Manager	Ongoing during operations
Ensure that the person transporting the waste is licensed if the waste is of such an amount as to require the person transporting the waste to be licensed. The project will ensure that: • Vehicles carrying waste will be kept clean and be constructed and maintained as to prevent spillage of waste. • Loads which may spill or emit odours are covered so that spillage and/or emission is prevented. • Any contained waste is safely secured. • Incompatible waste will not be mixed or transported together. • Any hazardous waste is not mixed with any other type of waste. • Any waste containing asbestos is to be handled and stored in accordance with approved methods and disposed of at a licenced facility. • Material segregated for recycling is not mixed with other wastes. • Any waste is transported only to controlled facilities or other facilities that can lawfully receive the waste. • The occupier of the waste facility is advised of the type of waste involved before the waste is unloaded.	Site Manager	Ongoing during operations

6. BOWLING CLUB WASTE PLAN

The *EPA Better Practice Guide for Waste Management & Recycling in Commercial and Industrial Facilities – December 2012* has been referenced to calculate the total number of bins required for the Bowling Club's additional gross floor area. In accordance with the guidelines recommendation to use existing data where available, the report completed calculations based on the existing operations of the Bowling Club. A summary of the calculations is included in **Table 3**.

Please note that the calculations are based on generic figures; waste generation rates may differ according to the Bowling Clubs waste management practice.

Table 3: Calculated Waste Generation – Bowling Club

Waste Calculation (EPA Better Practice Guide for Waste Management & Recycling in Commercial and Industrial Facilities – December 2012)					
Bowling Club					
Type	**Floor Area**	**General Waste Calculation (Existing/day)**	**General Waste Generated (L/week)**	**Recycle Waste Calculation (Existing/day)**	**Recycle Waste Generated (L/week)**
Area Existing	3,069m^2	12,000L		12,000L	
(1100L)					
(3000L)		2 (Collected Twice Weekly)		2 (Collected Twice Weekly)	
Proposed	3,775m^2		706m^2 Approximately 20% increase		706m^2 Approximately 20% increase
			12,000L x 20% = 14,400L		12,000L x 20% = 14,400L
(1100L)			13.09		13.09
Total Bins Required					
(1100)			(5) three times weekly		(5) three times weekly

BIN SUMMARY

Garbage

- 5 x 1100L MGBs collected three (3) times weekly.

Recycling

- 5 x 1100L MGBs collected three (3) times weekly.

WASTE MANAGEMENT

The building manager will be required to be responsible for their own storage of waste and recycling back of house (BOH).

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.

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. The building manager will be responsible for waste management.

On completion of each trading day or as required, nominated staff/cleaners will transport their waste and recycling, using the access corridor/designated pathway, to the waste area nominated adjacent to Port Stephens Street and place waste and recycling into the appropriate collection bins.

It is noted that Raymond Terrace Bowling Club currently utilises a Glass Crusher with all glass collected from Bottlecycler. It is envisaged that this process will continue and will be reviewed on a regular basis to ensure the practice is working effectively.

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;
- 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 garbage bins.

The provided waste swept paths (**Appendix A**) includes a commercial bin pick up area. This should be considered when developing future management plans for the development.

WASTE MANAGEMENT STRATEGIES

In addition to the above recommendations a range of other waste avoidance and reduction strategies are to be considered for the Bowling Club. These include:

Waste avoidance

- Order produce to be delivered with excess foliage removed;
- Purchase items in bulk. Avoid purchasing multipacks and single serve containers;
- Review serving sizes to reduce waste from uneaten food;
- Investigate the use of retractable cotton hand towels as an alternative to paper towels in toilets;
- Lease office equipment so that you can upgrade and not be responsible for equipment disposal; and
- Present all waste reduction initiatives to staff as part of their induction program.

Reuse

- Donate used flowers to a local hospice or hospital;
- Store food in reusable containers;
- Return cardboard cartons to suppliers for reuse; and
- Work with supply chain stakeholders to ship products in reusable packaging.

Recycle

- Develop a 'buy recycled' purchasing policy;
- Buy products packed in recyclable packaging;
- Provide bins for the separation of recyclables;
- Buy beverages in containers which can be recycled by your contractor;
- Flatten cardboard boxes as much as possible to save space in bins; and
- Keep cardboard clean – soiled cardboard cannot be recycled.

WASHROOM FACILITIES

Washroom facilities in the Bowling Club and staff areas 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.

GREEN WASTE

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

7. HOTEL WASTE PLAN

The *EPA Better Practice Guide for Waste Management & Recycling in Commercial and Industrial Facilities – December 2012* has been referenced to calculate the total number of bins required for the Hotel. The waste calculations were divided into three (3) different uses to determine an average waste generation. A summary of the calculations is included in **Table 4**.

Please note that calculations are based on generic figures; waste generation rates may differ according to the operator's waste management practice.

Table 4: Calculated Waste Generation – Hotel

Waste Calculation (EPA Better Practice Guide for Waste Management & Recycling in Commercial and Industrial Facilities – December 2012)					
Hotel – Accommodation (Pool considered ancillary) – Table 17					
Type	**Rooms**	**General Waste Calculation (3.4 L per occupied room per night)**	**General Waste Generated (L/week)**	**Recycling Waste Calculation (10.2 L per occupied room per night)**	**Recycling Waste Generated (L/week)**
Accommodation	50	170	1190	510	3,570
Hotel – Restaurant (Combined areas)– Table 16					
Type	**Floor Area**	**General Waste Calculation (190L/100m2/day)**	**General Waste Generated (L/week)**	**Recycling Waste Calculation** (190L/100m2/day)	**Recycling Waste Generated (L/week)**
Restaurant	Approx. 500m²	950	6650	950	6650
Hotel – Office – Table 16					
Type	**Floor Area**	**General Waste Calculation (8L/100m²/day)**	**General Waste Generated (L/week)**	**Recycling Waste Calculation (6L/100m²/day)**	**Recycling Waste Generated (L/week)**
Office	Approx. 100m²	8	56	6	42
Sub Totals			7,896L		10,262L
(1100)			7.17		9.3
Total Bin Storage Required					
(1100)			(3) three times weekly		(3) three times weekly

BIN SUMMARY

Garbage

- 3 x 1100L MGBs collected three (3) times weekly.

Recycling

- 3 x 1100L MGBs collected three (3) times weekly.

WASTE MANAGEMENT

The building manager will be required to be responsible for their own storage of waste and recycling BOH.

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.

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. The building manager will be responsible for waste management.

On completion of each trading day or as required, nominated staff/cleaners will transport their waste and recycling, using the access corridor/designated pathway, to the waste area nominated on the ground floor of the Hotel and place waste and recycling into the appropriate collection bins. Bins will be then moved to the pickup point located between the Bowling Club and the Hotel near the traversable roundabout.

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;
- 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;
- Hotel rooms are to provide two bins - one waste bin for bottles, cans, etc. as well as cardboard and another for general waste;
- 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 garbage bins.

The provided waste swept paths (**Appendix A**) includes a commercial bin pick up area. This should be considered when developing future management plans for the development.

WASTE MANAGEMENT STRATEGIES

In addition to the above recommendations a range of other waste avoidance and reduction strategies are to be considered for the Hotel. These include:

Waste avoidance

- Order produce to be delivered with excess foliage removed;
- Purchase items in bulk. Avoid purchasing multipacks and single serve containers;
- Review serving sizes to reduce waste from uneaten food;
- Review the need to provide newspapers and magazines free of charge if not requested;
- Investigate the use of retractable cotton hand towels as an alternative to paper towels in toilets;
- Lease office equipment so that you can upgrade and not be responsible for equipment disposal; and
- Present all waste reduction initiatives to staff as part of their induction program.

Reuse

- Donate used linens, towels, blankets, soap, shampoo, uniforms and furniture to charity;
- Donate used flowers to a local hospice or hospital;
- Store food in reusable containers;
- Return cardboard cartons to suppliers for reuse; and
- Work with supply chain stakeholders to ship products in reusable packaging.

Recycle

- Develop a 'buy recycled' purchasing policy;
- Buy products packed in recyclable packaging;
- Provide bins for the separation of recyclables in guest rooms;
- Buy beverages in containers which can be recycled by your contractor;
- Flatten cardboard boxes as much as possible to save space in bins; and
- Keep cardboard clean – soiled cardboard cannot be recycled.

WASHROOM FACILITIES

Washroom facilities in the Hotel and staff areas 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.

GREEN WASTE

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

8. COLLECTION OF WASTE

BOWLING CLUB

Waste will be collected by private contractor to an agreed schedule. This report assumes that collections for both waste streams will be collected three (3) times weekly. The Proposal has adequate storage area available for the 10 bins required.

Prior to collections, the building manager will be responsible for ensuring all bins are stored neatly at the pickup location for ease of servicing.

Bowling Club waste collection is to occur off Port Stephens Street from the nominated pickup zone. Bins are wheeled from the appropriate bin store during time of collection and then returned to the appropriate store after pickup.

HOTEL

Waste will be collected by private contractor to an agreed schedule. This report assumes that collections for both waste streams will be collected three (3) times weekly. The Proposal has adequate storage area available for the 6 bins required.

Prior to collections, the building manager will be responsible for ensuring all bins are stored neatly at the pickup location for ease of servicing.

Hotel waste collection to occur on-site from the nominated bin pickup zone. Bins are to be wheeled from the relevant bin store by staff to the pickup zone as required, then returned to their appropriate store after collection.

A suitable plan of management is to be implemented to ensure no crossover between waste collection and supplier delivery timeframes. Plan of management is to also nominate the methods of traffic control to the one-way side street off Jacaranda Avenue to ensure no patron vehicles enter site through this route until all collection or delivery vehicles have left.

COLLECTION AREA

The loading dock has been reviewed by *EJE Architecture* to confirm the waste collections, access and egress for loading and to exit, load requirements as well as collection vehicle. The final number of truck movements will depend on management of waste contract and the final configuration of waste and recycling arrangements.

9. GARBAGE ROOM

CONSTRUCTION REQUIREMENTS

The enclosed garbage room within the Hotel 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;
- cold water facility and 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 requirements (Hunter 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 is responsible for waste room signage including safety signage (*see* ***Section 10***). 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 Hotel levels will be labelled with signs directing chute operations and use of chute door.

VENTILATION

Enclosed 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

The building manager 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.

AREA REQUIREMENTS

Section 10 identifies the required areas of the bins to be accommodated. Area will also need to accommodate movement of the bins and abovementioned facilities.

Given the area requirements noted and the provided storage areas, it is considered that the development provides adequate area to accommodate waste requirements.

10. WASTE MANAGEMENT PRODUCTS

Crates

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

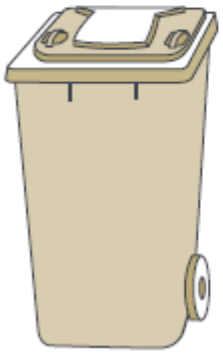
The above dimensions are indicative only of common crate sizes

Mobile garbage bins (MGBs)

MGBs with capacities up to 1700L should comply with the Australian Standard for Mobile Waste Containers (AS 4123). AS 4123 specifies standard sizes and sets out the colour designations for bodies and lids of mobile waste containers that relate to the type of materials they will be used for.

Indicative sizes only for common MGB sizes are provided below. Note that not all MGB sizes are shown; the dimensions are only a guide and differ slightly according to manufacturer, if bins have flat or dome lids and are used with different lifting devices. Refer to AS 4123 for further detail.

Mobile containers with a capacity from 80L to 360L with two wheels



Bin Type	80 Litre MGB	120 Litre MGB	140 Litre MGB	240 Litre MGB	360 Litre MGB
Height	870 mm	940 mm	1065 mm	1080 mm	1100 mm
Depth	530 mm	560 mm	540 mm	735 mm	885 mm
Width	450 mm	485 mm	500 mm	580 mm	600 mm

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

Safety Signs

The design and use of safety signs for waste rooms and enclosures should comply with *AS 1319 Safety signs* for the occupational envirionment. Safety signs should be used to regulate and control safety-realted behaviour, warn of hazards and provide emergency information, including fire protection information. Each development will need to decide which signs are relevant for its set of circumsatnces and services provided.

Mobile Bin Colours

Waste Category	Bin body colour	Bin lid colour
Garbage	Dark green or black.	Red
Recycling (commingled or containers)	Dark green or black.	Yellow
Paper / Cardboard	Dark green or black.	Blue
Organics (including co-collected food and garden organics)	Dark green or black.	Lime green

Waste signs

General recycling

Instructional

Construction and demolitions

Public place

Recycling

Garden organics and food waste

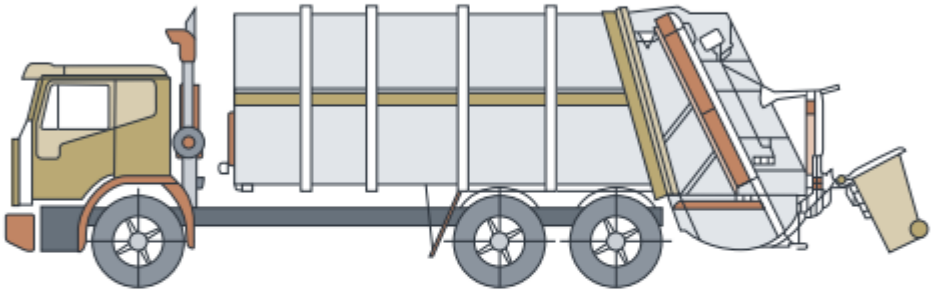
Garbage

Collection vehicles

Waste collection vehicles may be side loading, rear-end loading, front-end loading or crane trucks. The size of vehicle varies according to the collection service. Thus it is impossible to specify what constitutes the definitive garbage vehicle. Developers should consult the local council and/or relevant contractors regarding the type of vehicle used in that area.

The following characteristics represent the typical collection vehicle, however, these are only for guidance.

It may be possible to engage a collection service provider to use smaller collection vehicles to service developments with narrow roadways and laneways, or for on-site collections. However, as the availability of smaller vehicles to make services varies between councils and private contractors, wherever possible the development should be designed to accommodate vehicles of a similar size to that reported below.



Rear loading collection vehicle

This is commonly used for domestic garbage and recycling collections from MUDs. It can be used to collect waste stored in MGBs or bulk bins, particularly where bins are not presented on the kerbside.

Rear loading collection vehicle	
Length overall	10.24m
Width overall	2.5m
Operational height	3.5m
Travel height	3.5m
Weight (vehicle only)	12.4 tonnes
Weight (payload)	9.5 tonnes
Turning circle	18.0m

11. CONCLUSION

This waste management plan has covered the demolition and associated works on the site and the ongoing management of waste generated by the Proposal at 2 Jacaranda Avenue, Raymond Terrace.

Waste audit and management strategies have been recommended along with a review of the anticipated waste generation rates and required storage and pick arrangements.

It is considered that the Proposal is consistent with the provisions of the *EPA Better Practice Guide for Waste Management & Recycling in Commercial and Industrial Facilities – December 2012* and can be supported by Council in relation to waste management.

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& Powys

M &
P

APPENDIX A: Site Plan and Waste Swept Paths

ABBREVIATIONS

AHD	AUSTRALIAN HEIGHT DATUM	FE	FIRE EXTINGUISHER
AL	ALUMINIUM LOUVRE	FFL	FINISHED FLOOR LEVEL
ALB	ALUMINIUM BATTEN	FHR	FIRE HOSE REEL - REFER TO HYDRAULIC DOCUMENTATION
AS	AUSTRALIAN STANDARD	LVR	LOUVRE
BAL	BALUSTRADE	MDB	MAIN DISTRIBUTION BOARD - REFER TO ELECTRICAL DOCUMENTATION
BG	BOX GUTTER	PT	PIT
BH	BULKHEAD	REF	REFRIGERATOR
BIN	GARBAGE BIN	RL	REDUCED LEVEL
BOL	BOLLARD	RS	ROLLER SHUTTER
CFC	COMPRESSED FIBRE CEMENT	TGSI	TACTILE GROUND SURFACE INDICATORS
COL	COLUMN - REFER TO STRUCTURAL DOCUMENTATION	TYP	TYPICAL
COS	CONFIRM ON SITE	UR	URINAL
DP	DOWNPIPE - REFER TO HYDRAULIC DOCUMENTATION	WC	WATER CLOSET
E	EXISTING		
EDB	ELECTRICAL DISTRIBUTION BOARD - REFER TO ELECTRICAL DOCUMENTATION		
EG	EAVES GUTTER - REFER TO HYDRAULIC DOCUMENTATION	#	No. DENOTES TYPE AS SCHEDULED
EV	ELECTRIC VEHICLE		

LEGEND

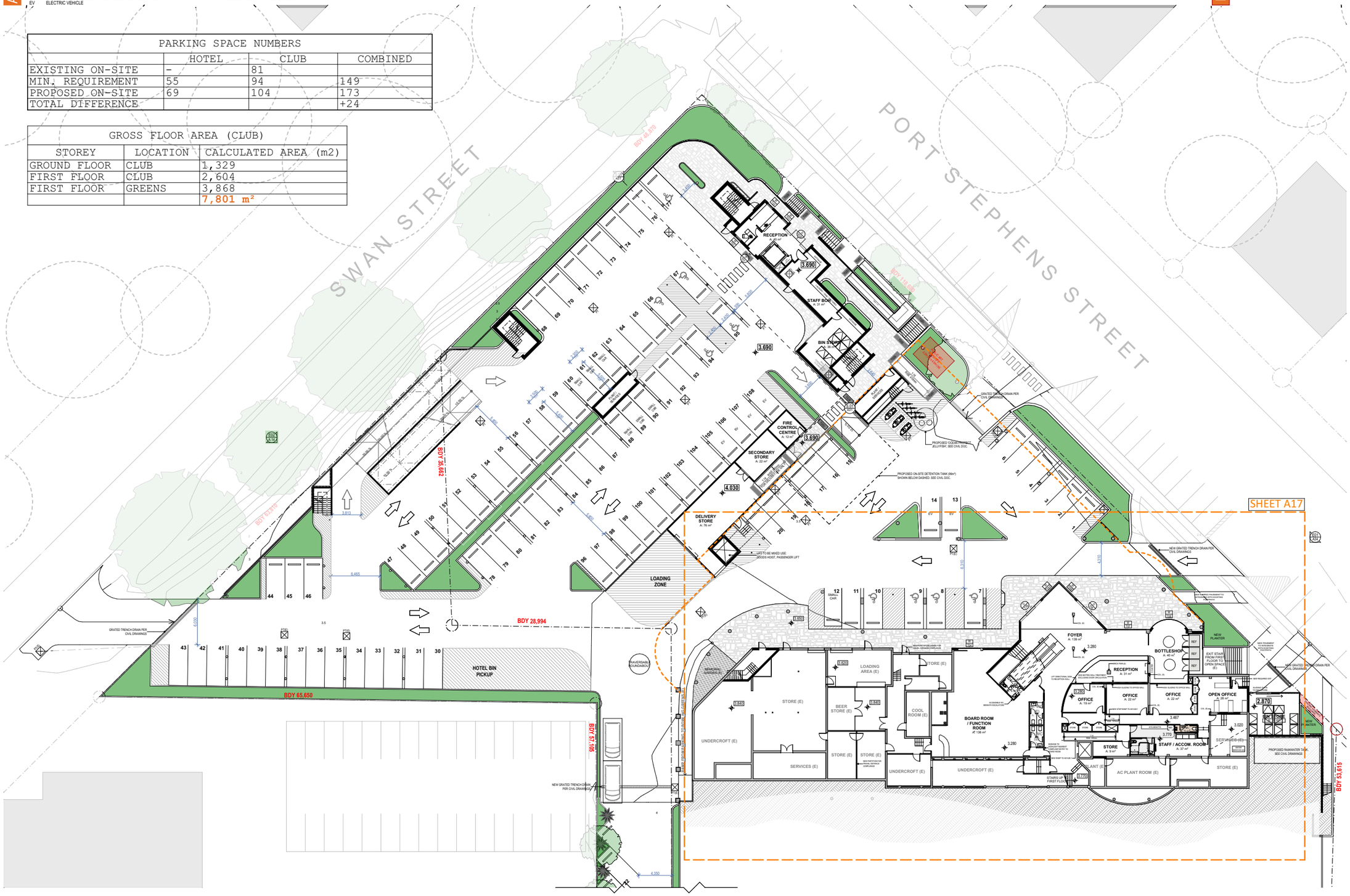
- W1.05 — WINDOW MARKER eg. WINDOW / LEVEL 1 / WINDOW N° 05
- L1.05 — LOUVRE MARKER eg. LOUVRE / LEVEL 1 / LOUVRE N° 05
- D1.05 — DOOR MARKER eg. DOOR / LEVEL 1 / DOOR N° 05
- LINE MARKING
- 0.00 — EXISTING RL
- 0.00 — PROPOSED RL

PARKING SPACE NUMBERS

	HOTEL	CLUB	COMBINED
EXISTING ON-SITE	-	81	
MIN. REQUIREMENT	55	94	149
PROPOSED ON-SITE	69	104	173
TOTAL DIFFERENCE			+24

GROSS FLOOR AREA (CLUB)

STOREY	LOCATION	CALCULATED AREA (m2)
GROUND FLOOR	CLUB	1,329
FIRST FLOOR	CLUB	2,604
FIRST FLOOR	GREENS	3,868
		7,801 m²



RAYMOND TERRACE BOWLING CLUB : **GROUND FLOOR**

13954 - A16 - Rev E - 05 December 2023

0 10mm 50mm 100mm ON ORIGINAL A3

1:500, 1:2 @ A3

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ABBREVIATIONS

AHD	AUSTRALIAN HEIGHT DATUM	FE	FIRE EXTINGUISHER
AL	ALUMINIUM LOUVRE	FFL	FINISHED FLOOR LEVEL
ALB	ALUMINIUM BATTEN	FHR	FIRE HOSE REEL - REFER TO HYDRAULIC DOCUMENTATION
AS	AUSTRALIAN STANDARD	LVR	LOUVRE
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BG	BOX GUTTER	PT	PIT
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CFC	COMPRESSED FIBRE CEMENT	TGSI	TACTILE GROUND SURFACE INDICATORS
COL	COLUMN - REFER TO STRUCTURAL DOCUMENTATION	TYP	TYPICAL
COS	CONFIRM ON SITE	UR	URINAL
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E	EXISTING		
EDB	ELECTRICAL DISTRIBUTION BOARD - REFER TO ELECTRICAL DOCUMENTATION		
EG	EAVES GUTTER - REFER TO HYDRAULIC DOCUMENTATION	#	No. DENOTES TYPE AS SCHEDULED
EV	ELECTRIC VEHICLE		

LEGEND

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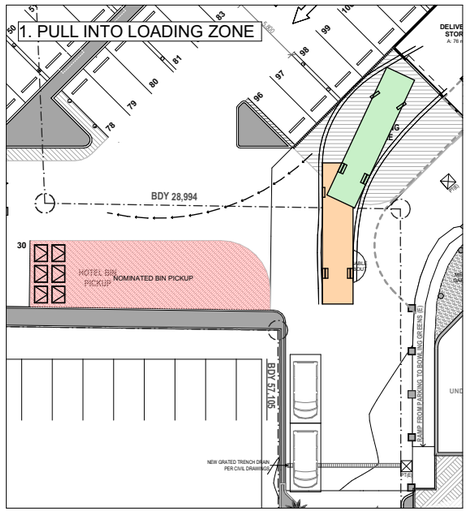
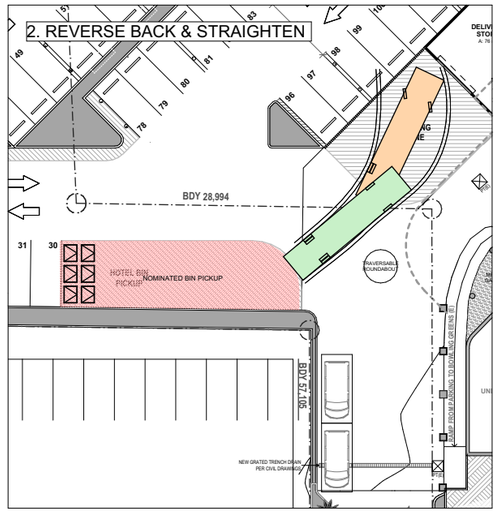
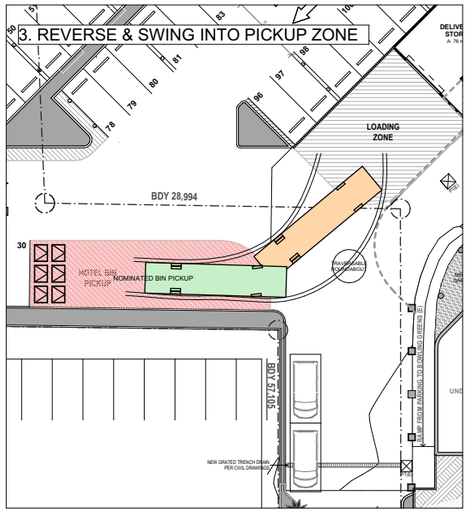
- L1.05 — LOUVRE MARKER eg. LOUVRE / LEVEL 1 / LOUVRE N° 05
- D1.05 — DOOR MARKER eg. DOOR / LEVEL 1 / DOOR N° 05
- LINE MARKING
- 0.00 — EXISTING RL
- 0.00 — PROPOSED RL



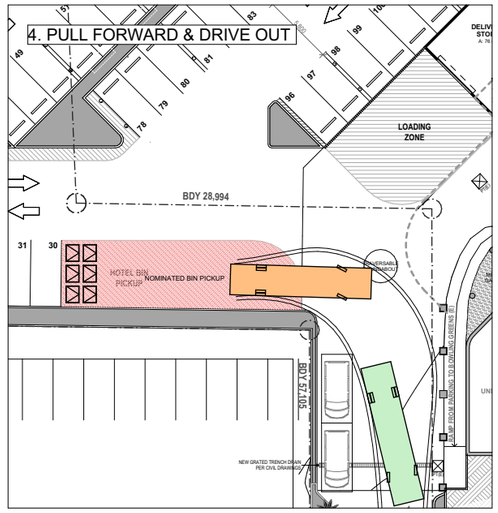
1 HOTEL WASTE - REAR LOADING 1:500



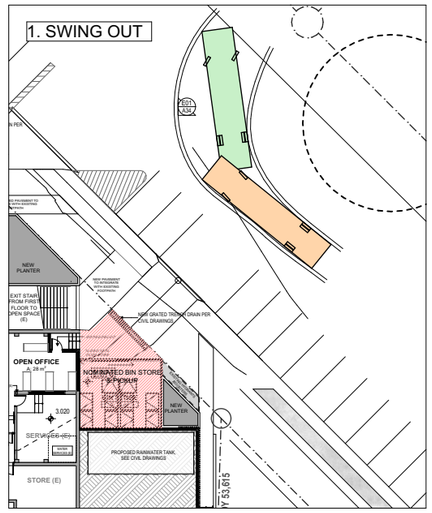
2 HOTEL WASTE - REAR LOADING 1:500



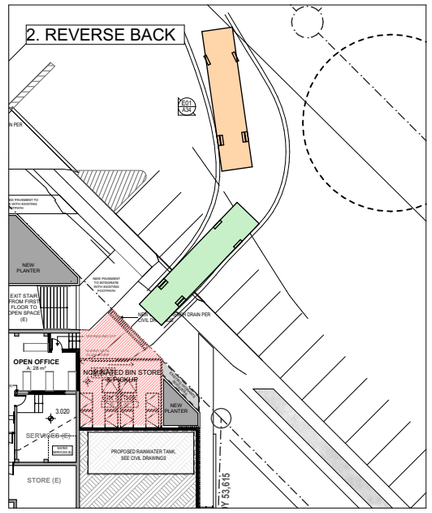
3 HOTEL WASTE - REAR LOADING 1:500



4 HOTEL WASTE - REAR LOADING 1:500



1 CLUB WASTE - REAR LOADING1:500



2 CLUB WASTE - REAR LOADING1:500

NOTE:

DIMENSIONS OF THE LARGEST WASTE COLLECTION VEHICLE ON SITE ARE SHOWN ADJACENT. THIS IS LARGER THAN THE AS2890.2 MEDIUM RIGID VEHICLE. THE SUGGESTED WASTE COLLECTION VEHICLE IS REAR-LOADING, WITH SWEPT PATHS DRAWN TO THIS SUGGESTION. NOMINATED BIN NUMBERS ARE AS FOLLOWS:

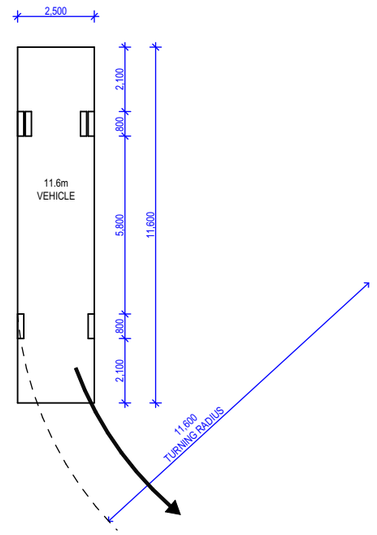
CLUB - 10 x 1,100L BINS (COLLECTED 3x A WEEK)
HOTEL - 6 x 1,100L BINS (COLLECTED 3x A WEEK)

THE NOMINATED WASTE COLLECTION COMPANY IS **'J.J.RICHARDS'**

CLUB WASTE COLLECTION TO OCCUR OFF PORT STEPHENS STREET FROM NOMINATED PICKUP ZONE. SKIP BINS ARE WHEELED FROM THE APPROPRIATE BIN STORE DURING TIME OF COLLECTION AND THEN RETURNED TO THE APPROPRIATE STORE AFTER PICKUP.

HOTEL WASTE COLLECTION TO OCCUR ON-SITE FROM THE NOMINATED BIN PICKUP ZONE. BINS ARE TO BE WHEELED FROM THE RELEVANT BIN STORE BY STAFF TO THE PICKUP ZONE AS REQUIRED, THEN RETURNED TO THEIR APPROPRIATE STORE AFTER COLLECTION.

A SUITABLE PLAN OF MANAGEMENT IS TO BE IMPLEMENTED TO ENSURE NO CROSSOVER BETWEEN WASTE COLLECTION AND SUPPLIER DELIVERY TIMEFRAMES. PLAN OF MANAGEMENT IS TO ALSO NOMINATE METHODS OF TRAFFIC CONTROL TO THE ONE-WAY SIDE STREET OFF JACARANDA AVENUE TO ENSURE NO PATRON VEHICLES ENTER SITE THROUGH THIS ROUTE UNTIL ALL COLLECTION OR DELIVERY VEHICLES HAVE LEFT.



WASTE COLLECTION SIZE 1:200

RAYMOND TERRACE BOWLING CLUB : **SWEPT PATHS - WASTE**

13954 - A32 - Rev C - 05 December 2023

0 10mm 50mm 100mm ON ORIGINAL A3

1:200, 1:500 @ A3

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