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OCTOBER 2023

623 COLLINS STREET, MELBOURNE WASTE MANAGEMENT PLAN





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623 COLLINS STREET, MELBOURNE
Waste Management Plan

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REV	DATE	DETAILS
A	01/07/2022	Draft Waste Management Plan (Internal Review)
B	08/07/2022	Waste Management Plan (Internal Review)
C	06/04/2023	Draft Waste Management Plan (Internal Review)
D	18/04/2023	Waste Management Plan (Final Issue)
E	17/10/2023	Waste Management Plan (Council Comments)

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1 WSP RESPONSE TO COUNCIL RFI

A planning permit application for the subject site has been lodged, to which City of Melbourne have raised a number of comments with regards to the Waste Management Plan.

This Waste Management Plan satisfies these comments with responses as per Table 1 below:

Table 1 Council RFI and Response

City of Melbourne Comments	WSP Response
<p>It is a requirement for residential waste to be collected by Council.</p> <p>A) Please investigate all options for Council to enter the site with a MRV.</p> <p>B) Whilst Council is not supportive of the double width crossover to Spencer Street, if existing driveways can be utilised by increasing the entry height to enable MRV access, this option should be explored.</p> <p>C) If access to the building for a MRV is deemed not possible, please show supporting evidence (e.g. swept paths).</p> <p>D) The next best option for a Council collection would be for the MRV to park on Spencer Street and retrieve residential bins from within the development that are within close proximity to the parked MRV.</p>	<p>A) MRV cannot perform on site collections due to vehicle length, vehicle height and the ability to enter and exit in a forwards direction. Largest vehicle that can enter and exit site in a forwards direction is an SRV.</p> <p>Note: VicRoads will not permit a reversing vehicle off Spencer Street.</p> <p>B) Heritage restrictions will not permit changes to entrance to accommodate MRV.</p> <p>C) Swept paths demonstrating MRV is not possible due to conflict points is attached in Appendix C.</p> <p>D) There are four 30-minute meter parking bays for off peak periods between 9:30am and 4pm Monday to Friday when waste collection could occur. A waste collection vehicle would require 2 consecutive bays to be available for collections to occur. These four bays are the only parking during off peak periods along the entire block from Collins Street to Flinders Lane. However, these four bays likely to be highly utilized as the rest of the block is a tow away zone during peak periods or no standing.</p> <p>The closest loading bay is without crossing a street is on Collins Street and is approximately 200m away from the driveway entry.</p> <p>Please see Figure 1 below this table for parking limitations.</p> <p>Suitable loading is <u>not</u> available for an MRV within close proximity to the building. WSP recommends the development retains private collection for residential waste.</p>
<p>Please include a contingency plan should the digester become unavailable for use.</p>	<p>The report has been updated to include contingency food organics waste bins that will provide capacity when the digester is out of order. See Table 11.</p>

Please show storage of the bin tipper on the floor plan.	The plans have been updated to include a bin lifter within the residential waste room. See Table 15 and Appendix A.
Please show a safe path of travel for the waste that will be deposited in the commercial waste room from the 71.67m ² retail space at Ground Level.	BOH access to the retail space is provided via basement 1. See Appendix A.
Please show where the charity bin will be stored.	The plans have been updated to include a 660L charity bin within the residential waste room. See Table 15 and Appendix A.
Table 13 shows that there will be 6m ² of residential hard waste storage area, whereas the plans show only 4m ² .	Table 15 of the report has been updated to 4m ² for residential Hard Waste.

Figure 1 Collins Street and Spencer Street Parking Diagram



2 SUMMARY

The below is a summary of the waste management plan proposed for the subject site. The complete report must be read in detail prior to implementing the waste management plan for the site.

Located in the Melbourne CBD, Australia, the proposed project will deliver a redevelopment of an existing heritage listed building with a mix of residential, commercial offices and hotel. The subject development will comprise of:

- 229 hotel keys
- Hotel amenities (including function space, restaurant, retail and rooftop bar)
- 175 residential apartments
- 2,718 m² of commercial office space

Waste will be collected through private contractor services as outlined below.

Table 2 Waste Collection Summary

Waste Stream	Number of Bins			Collection Per Week	Collection Operator
	Residential	Hotel	Commercial		
Garbage	4x 1100L Bins	9x 1100L Bins	1x 660L Bin	Up to 3	Private Contractor
Commingles	4x 1100L Bins	2x 1100L Bins	1x 660L Bin	Up to 3	Private Contractor
Cardboard	-	3x 1100L Bins	1x 1100L Bin	Up to 3	Private Contractor
Food Organics	1x Digester	1x Digester		Nil	Nil
Glass	3x 660L Bins	2x 660L Bins	-	Up to 3	Private Contractor

All waste shall be collected from the internal loading bay on the basement level 1 via an SRV sized collection vehicle or smaller. Waste collection vehicles will enter and exit the site forwards via the basement access ramp from the Spencer Street and will exit the site in a forward direction via the same access ramp (see Appendix B for swept path diagrams)

The waste collection vehicle will prop within the loading bay in undertaking waste collections. A hoist between basement level 1 and mezzanine will provide vehicle operators direct access to each waste store, allowing operators to collect bins directly from each waste room and return them immediately upon emptying (see Appendix A). Bins will not be stored outside of the title boundary or presented to kerb for waste collection at any time.

Food organic waste generated will be disposed of via aerobic digesters. These units decompose organic matter into a product of just CO₂ and greywater, with no residual waste generated which requires collections.

Waste equipment will not be stored outside the title boundary. Building management will ensure sufficient access is provided for collection vehicle operators during collection times. Typically, operators are provided with keypad/swipe card access to service doors as required.

NOTE TO THE REPORT: VEHICLE LIMITATIONS

All waste collections for the site will occur within the on-site loading bay at basement level 1. Heritage constraints of the subject façade will limit incoming waste collection vehicles to a **maximum** SRV size. WSP understands that accommodating any larger vehicles (i.e. larger MRV sized waste collection vehicles) will **not** be possible without significant impact upon heritage features.

As such, the waste system as specified throughout this WMP will maintain a private collection contractor for all uses (residential, hotel, commercial). This will provide for waste collection to be entirely contained on-site and reduce vehicle movement.

3 INTRODUCTION

The following Waste Management Plan (WMP) has been prepared for the proposed mixed-use development at 623 Collins Street, Melbourne.

This Waste Management Plan (WMP) and the waste generation rates therein have been prepared based on the City of Melbourne document *Guidelines for Waste Management Plans* (2021) and current best practice waste management methodology and technologies commonly available in Australia.

3.1 LAND USE

Client:	Six Two Three Developments Pty Ltd
Land Use Type:	Mixed Use
Town Planning No.:	To be allocated
Number of Levels:	42 Levels with Mezzanine, Ground and 5 level basement

Table 3 Development Summary

Residential		
Dwelling Type	Quantity / Area	
Apartment: One Bedroom / Studio	44	Apartments
Apartment: Two Bedroom	101	Apartments
Apartment: Three or more Bedroom	30	Apartments
Commercial		
Use	Quantity / Area	
Office	2,718	m ²
Hotel		
Use	Quantity / Area	
Hotel Rooms	229	Suites
Function	127	m ²
Pool & Gym	331	m ²
Restaurant	502	m ²
Retail	70	m ²
Rooftop Bar & Terrace	411	m ²

3.2 DEVELOPMENT CONTEXT: WASTE COLLECTION

Currently occupied by a six storey building, the subject site (former State Saving Bank Building, currently operating as ‘Batman Hill on Collins Hotel’) is generally bounded by Spencer Street to the west, Collins Street to the north and an unnamed laneway to the west. Subject works propose the development of a new mixed-use tower upon the site, with the existing rendered brick façade to generally be maintained. The retaining of the heritage facade greatly impacts vehicle access to the site.

All waste collections for the site will occur within the on-site loading bay at basement level 1. Heritage constraints of the subject façade will limit incoming waste collection vehicles to a **maximum** SRV size. WSP understands that accommodating any larger vehicles (i.e. larger MRV sized waste collection vehicles) will **not** be possible without significant impact upon heritage features.

As such, the waste system as specified throughout this WMP will maintain a private collection contractor for all uses (residential, hotel, commercial). This will provide for waste collection to be entirely contained on-site and reduce vehicle movement.

4 WASTE MANAGEMENT PLAN

4.1 WASTE GENERATION

Waste generation rates are provided in Table 4 and a waste generation assessment in Table 5. Calculations assume a 1 day per week operation for the function space, a 5 day per week operation for the commercial office, and a 7 day per week operation for all other uses.

Any areas considered ancillary to the active uses of the site (Hotel Lobby, Rooftop Terrace, Gym, Pool, etc) are not considered to generate additional waste, and are as such are not included in the below. Waste generated by these areas is created in service of the active uses of the site and is therefore incorporated into the rates shown below.

As per the direction from the project team, the function space has generally been assumed to provide up to one function per day as a catered, sit-down meal, for which one-third of the typical restaurant generation rate has been adopted. This will provide for a conservative generation estimate.

Table 4 Waste Generation Rates

Use	Metric	Waste Generation Rates (per week)				
		Garbage	Commingles	Cardboard	Food Organics	Glass
Residential						
One-bedroom dwelling	L/quantity	60	56	-	20	24
Two-bedroom dwelling	L/quantity	75	70	-	25	30
Three-bedroom dwelling	L/quantity	90	84	-	30	36
Hotel						
Hotel Rooms	L/bed	35	20	15	-	-
Function	L/100m ²	528	14	135	132	51
Pool & Gym	L/100m ²	70	35	35	-	-
Restaurant	L/100m ²	3,696	100	945	924	355
Retail	L/100m ²	1,680	305	945	420	150
Rooftop Bar & Terrace	L/100m ²	300	100	100	50	150
Commercial						
Office	L/100m ²	45	20	30	5	-

Table 5 Waste Generation Assessment

Use	Quantity / Area	Waste Generation Assessment (L/week)				
		Garbage	Commingles	Cardboard	Food Organics	Glass
One-bedroom dwelling	44 apt	2,640	2,464	-	880	1,056
Two-bedroom dwelling	101 apt	7,575	7,070	-	2,525	3,030
Three-bedroom dwelling	30 apt	2,700	2,520	-	900	1,080
SUBTOTAL – RESIDENTIAL		12,915	12,054	-	4,305	5,166
Hotel Rooms	229 suites	8,015	4,580	3,435	-	-
Function	127 m ²	671	18	171	168	64
Pool & Gym	331 m ²	232	116	116	-	-
Restaurant	502 m ²	18,554	502	4,744	4,638	1,782
Retail	70 m ²	1,176	214	662	294	105
Rooftop Bar & Terrace	411 m ²	1,233	411	411	206	617
SUBTOTAL – HOTEL		29,881	5,841	9,539	5,306	2,568
Office	2,718 m ²	1,223	544	815	136	-
SUBTOTAL – COMMERCIAL		1,223	544	815	136	-
GRAND TOTAL		44,019	18,439	10,354	9,747	7,734

4.2 WASTE SYSTEMS

Waste shall be sorted on-site as appropriate into the following streams:

- Garbage (General Waste)
- Commingled Recycling
- Cardboard
- Food Organics
- Glass
- Hard Waste / Electronic Waste
- Charity Goods

4.2.1 DUAL CHUTE SYSTEMS (RESIDENTIAL)

Each residential apartment (dwelling) shall have access to a set of dual chutes on their building level. The dual chute system will contain one chute dedicated to garbage and another dedicated to commingled recycling.

The garbage and recycling chutes will terminate at mezzanine level into 1100L bins situated upon a linear bin conveyor (2 x 1100L bin capacity per conveyor). Building management will rotate bins beneath the chutes on an as required basis (anticipated once per day, per stream).

For every level that does not have access to a chute room shall be provided with a bin room with capacity to handle their waste. Bin rooms shall be equipped with the same waste separation ability as a regular chute room. See Table 13.

4.2.2 GARBAGE, COMMINGLED RECYCLING

RESIDENTIAL

Each dwelling shall have provision for plastic bins for the temporary holding of garbage and commingled recyclables. Residents will transfer the waste from these bins as required to the appropriate waste chute or bins, as shown in Appendix A.

Garbage is to be disposed of bagged. Commingled recycling is to be disposed of loosely.

HOTEL, COMMERCIAL

Each space of the development shall have provision for plastic lined garbage and commingled recycling bins for the temporary holding of waste, to have minimum cumulative holding capacities as deemed appropriate by hotel / commercial management.

Waste from these temporary holding bins will be transferred to the hotel / commercial waste rooms at mezzanine level and disposed of within the larger 1100L and 660L bins therein (see Appendix A) through any of the following means:

- **Hotel Rooms:** Cleaning staff will circulate throughout the hotel floorplates and decant waste from these bins into cleaners trolleys at a nominated service time each day. Once full, cleaning staff will utilise the goods lift(s) to access the hotel waste room and further decant waste from the cleaners trolleys into the 1100L bins as appropriate.
 - Note: Hotel cleaning operations may in practice differ to the above, pending the standard procedure of the nominated operator.
- **Hotel Facilities, Commercial:** Staff/cleaners will utilise the lift goods lift(s) and back of house circulation corridors to directly transfer (and dispose of) waste from these bins to the hotel / commercial waste rooms as appropriate.
- **Hotel Function:** It is anticipated the waste generated by the function will be cleared by cleaners at the conclusion of any given function through cleaners trolleys. Cleaning staff will utilise the goods lift(s) to directly transfer (and dispose of) waste from the service trolleys to the hotel waste room as appropriate.

4.2.3 FOOD ORGANICS

RESIDENTIAL SYSTEM: DROP OFF BINS DECANTED INTO DIGESTER

60L food organics off bins will be provided within the chute rooms and bin rooms at each residential level for the immediate disposal of food waste (refer Appendix A). Appropriate signage shall support accurate deposits of these waste streams.

To assist in the transfer of organic waste, each dwelling shall have provision for “kitchen caddies for the temporary holding of organics (food waste). Residents will be able to transfer organic waste from their respective kitchen caddies to the Food Organics drop off bin as required. Kitchen caddies may be lined with biodegradable bags (i.e. corn-starch bags) or paper (i.e. newspaper) if desired.

HOTEL, COMMERCIAL SYSTEM: WASTE DISPOSED OF DIRECTLY WITHIN DIGESTER

Hotel / commercial spaces of the site shall be further furnished with small organics bins for the temporary holding of organic waste as appropriate, often provided as plastic tubs for ease of handling (up to 20L in size) and stored within the kitchen or back of house areas. Tubs can be stacked and transferred via trolleys if desired.

Staff or cleaners will manually empty organic waste from the temporary holding bins into the organics digester located in the back of house kitchen.

4.2.4 GLASS

60L glass drop off bins will be provided within the chute rooms and bin rooms at each residential level for the immediate disposal of glass waste (refer Appendix A). Appropriate signage shall support accurate deposits of these waste streams.

For safety purposes, glass bins should be secured such that residents can readily dispose of waste but cannot handle the bins and glass waste within (i.e. one-way feed system through enclosed bins or limited bin opening).

Building management will transfer the drop off bins to the waste room to be emptied. Glass shall be emptied into larger 660L bin to minimise transfers to the waste collection vehicle.

4.2.5 HARD WASTE / ELECTRONIC WASTE

Hard waste generated by residents shall be stored in the dedicated hard waste area in the basement. Building management will assist residents in the transfer of hard waste between residential levels and the basement level 1 as required.

Any hard waste generated by the hotel / commercial spaces will be temporarily held within the back of house areas of each tenancy and transferred to the loading bay at basement level 1 for collection on an as required basis.

Hard waste and e-waste will be collected by a private contractor as required. Building management will be responsible for assisting in the transfer of hard waste volumes to the loading bay prior to collection.

4.2.6 CHARITY

A 660L charity bin for the disposal of high-quality charitable goods such as clothing is to be provided within readily accessible communal areas of the premises (lobby, courtyard, laundry, etc.) and be readily accessible to all residents.

The Building Manager is to select a charity who is to provide the bins and perform collections on an as required basis.

4.3 EQUIPMENT QUANTITY, SIZE AND COLLECTION FREQUENCY

Information about the bins outlined in this WMP can be found in Table 6 through Table 14, containing information regarding quantity, size and frequency of collection.

Table 6 Garbage Bins: Information and Capacity

Garbage				
Waste Source	Equipment	Collections Per Week	Weekly Capacity	Weekly Volume
Residential	4 x 1100L Bins*	3	13,200L	12,915L
Hotel	9 x 1100L Bins		29,700L	29,881L**
Commercial	1 x 660L Bins	2	1,320L	1,223L

* It should be noted that 2 additional bins have been drawn in to assist bin change over and provide additional waste capacity if waste separation actions do not succeed.

** It is noted that the anticipated garbage volume exceeds the bin capacity volume. Due to the highly conservative nature of the waste generation estimation, this minor exceedance of bin capacity is considered negligible, and as such the system specified is considered appropriate.

Table 7 Recycling Bins: Information and Capacity

Commingled Recycling				
Waste Source	Equipment	Collections Per Week	Weekly Capacity	Weekly Volume
Residential	4 x 1100L Bins	3	13,200L	12,054L
Hotel	2 x 1100L Bins	3	6,600L	5,841L
Commercial	1 x 660L Bin	1	660L	544L

Table 8 Cardboard Bins: Information and Capacity

Cardboard				
Waste Source	Equipment	Collections Per Week	Weekly Capacity	Weekly Volume
Residential	-	-	-	-
Hotel	3 x 1100L Bins	3	9,900L	9,539L
Commercial	1 x 1100L Bin	1	1,100L	815L

Table 9 Food Organics Bins: Information and Capacity

Food Organics				
Waste Source	Equipment	Collections Per Week	Weekly Capacity	Weekly Volume
Residential	1 x Digester (300kg/day)	Nil	4,373L	4,305L
Hotel	1 x Digester (500kg/day)		7,247L	5,306L
Commercial				136L

* One 60L food bin to be provided per residential level (within chute stores), total 25 x 60L residential food bins plus 4 spare bins across the site.

Table 10 Digester Capacity: Calculation Variables

Item	Variable	Calculation Methodology
No. Units	1 x Residential Unit 1 x Commercial Unit	<div>Residential Unit: 1 unit x 175 kg/unit/day x 7 days/week = 1,225 kg/week 3.57 L/kg x 1,225 kg/week = 4,373 L/week</div> <div>Commercial Unit: 1 unit x 290 kg/unit/day x 7 days/week = 2,030 kg/week 3.57 L/kg x 2,030 kg/week = 7,247 L/week</div>
Capacity per unit, per day (i.e. capacity per 24 hour day)	1 x 300 kg/day 1 x 500 kg/day	
Modified capacity per unit, per day (i.e. capacity per 14 hour day)	175 kg/unit/day 290 kg/unit/day	
Operational days per week	7 days/week	
Food organics density	280 kg/m³*	
	0.28 kg/L	
	3.57 L/kg	
*Organic Waste mass to volume conversion rate adopted from NABERS Waste: The Rules (2021)		

In the event of either of the digesters becoming out of order, a food organics waste collection can occur on every day the digester is out of order. This service can be provided by any waste collection contractor along with food organics bins to be provided by the contractor whilst the service is required.

Table 11 Contingency Food Organics Bins

Contingency Food Organics				
Waste Source	Equipment	Collections Per Week	Weekly Capacity	Weekly Volume
Residential	3x 240L Bins	Daily	5,040L	4,305L
Hotel	4x 240L Bins	Daily	6,720L	5,306L
Commercial				136L

Table 12 Glass Bins: Information and Capacity

Glass				
Waste Source	No. Bins	Collections Per Week	Weekly Capacity	Weekly Volume
Residential	3 x 660L Bins	3	5,940L	5,166L
Hotel	2 x 660L Bins	3	3,960L	2,568L
Commercial	-	-	-	-

* One 60L glass bin per residential level (within chute stores), total 25 x 60L residential glass bins across the site. These 60L glass bins will be emptied into the larger 660L bins and be transferred for collection.

For the top four levels of the building the section of the core that houses the chutes does not extend to allow for residential access to the chute room. A bin based system is proposed for the temporary holding of waste on these levels. Each of these levels has 2x three or more bedroom apartments and so the bin selection has been made to cater for the waste produced for each level.

Table 13 Residential Penthouse Bins: Information and Capacity

Residential Bin Room for Levels 38 – 41				
Waste Source	No. Bins	Collections Per Week	Weekly Capacity	Weekly Volume
Garbage	2 x 120L Bins	Two transfers each week to larger 1100L bins.	480L	180L
Recycling	1 x 120L Bins		240L	168L
Food Organics	1 x 60L Bin	Two transfers to digester per week.	120L	60L
Glass	1 x 60L Bin	Two transfers to 660L in mezzanine per week	120L	72L

Table 14 Typical Equipment Dimensions

Typical Equipment Dimensions (mm)			
Item	Width	Depth	Height
1100L Bin	1240	1070	1330
660L Bin	1260	830	1330
120L Bin	545	480	930
60L Bin (Slimline)	507	272	632

4.4 BIN COLOUR AND SUPPLIER

All bins will be supplied by a private supplier. City of Melbourne use the following bin colours, however these are only recommendations and are not mandatory:

- Garbage (general waste) bins shall have red lids with dark green or black body.
- Recycle bins shall have yellow lids with dark green or black body.
- Cardboard bins shall have blue lids with dark green or black body.
- Food organics bins shall have lime green lids with dark green or black body.
- Glass bins shall have orange lids with dark green or black body.

Charity waste bins are not specified within AS4123.7, however they typically have a white lid with a white body. Private collection contractors often provide their own bins for collection.

4.5 WASTE STORAGE AREA & LOCATION

Table 15 demonstrates the cumulative area requirements (excluding circulation) and provision of waste areas. Please refer to scaled waste room drawing shown in Appendix A.

Table 15 Waste Storage Area Requirement

Waste Store	Level	Item	Area Required	Area Provided
Waste Chute Room	Mezzanine	2 x Conveyors 4 x 1100L Bins (Garbage and Recycling)	12.76m ²	18.00m ²
Residential Waste Room	Mezzanine	6 x 1100L Bins (Garbage and Recycling)	7.98m ²	41.00m ²
		4 x 60L Bins (Food Organics)	1.00m ²	
		1 x Digester (300kg/day) (Food Organics)	1.13m ²	
		4 x 660L Bins (Glass and Charity)	3.92m ²	
		1x Bin Lifter	1.09m ²	
Hotel Waste Room	Mezzanine	14 x 1100L Bins (Garbage, Recycling, Cardboard)	18.62m ²	41.00 m ²
		2 x 660L Bins (Glass)	1.96m ²	
		2sqm Hard Waste	2.00m ²	
Hotel Kitchen BOH	Basement Level 1	1 x Digester (500kg/day) (Food Organics)	1.55m ²	2.00m ²
Commercial Waste Room	Mezzanine	2 x 660L Bins (Garbage and Recycling)	1.96m ²	12.00m ²
		1 x 1100L Bin (Cardboard)	1.33m ²	
		1 x 60L Bins (Food Organics)	0.26m ²	
		2sqm Hard Waste	2.00m ²	
Bin Wash	Mezzanine	7sqm Bin Wash with water & floor waste	7.00m ²	7.00m ²
Hard Waste Store (Residential)	Basement	Hard Waste	4.00m ²	8.00m ²
		1 x 1100L Bin (Large Cardboard)	1.33m ²	
TOTAL			71.88m ²	129.00m ²

4.6 SIGNAGE

Waste storage areas, bins and equipment will be clearly marked and signed with the industry standard signage approved by City of Melbourne (such as that illustrated in Figure 2 below) or equivalent.

Users will be instructed by building management to adhere to these requirements.

Figure 2 City of Melbourne Waste Signage



4.7 WASTE COLLECTION METHODOLOGY

Waste will be collected through private contractor services as outlined in Table 16 below.

Table 16 Waste Collection Summary

Waste Stream	Number of Bins			Collection Per Week	Collection Operator
	Residential	Hotel	Commercial		
Garbage	4x 1100L Bins	9x 1100L Bins	1x 660L Bin	Up to 3	Private Contractor
Commingles	4x 1100L Bins	2x 1100L Bins	1x 660L Bin	Up to 3	Private Contractor
Cardboard	-	3x 1100L Bins	1x 1100L Bin	Up to 3	Private Contractor
Food Organics	1x Digester	1x Digester		Nil	Nil
Glass	3x 660L Bins	2x 660L Bins	-	Up to 3	Private Contractor

All waste shall be collected from the internal loading bay on the basement level 1 via an SRV sized collection vehicle or smaller. Waste collection vehicles will enter and exit the site forwards via the basement access ramp from the Spencer Street and will exit the site in a forward direction via the same access ramp (see Appendix B for swept path diagrams)

The waste collection vehicle will prop within the loading bay in undertaking waste collections. A hoist between basement level 1 and mezzanine will provide vehicle operators direct access to each waste store, allowing operators to collect bins directly from each waste room and return them immediately upon emptying (see Appendix A). Bins will not be stored outside of the title boundary or presented to kerb for waste collection at any time.

Food organic waste generated will be disposed of via aerobic digesters. These units decompose organic matter into a product of just CO₂ and greywater, with no residual waste generated which requires collections.

Waste equipment will not be stored outside the title boundary. Building management will ensure sufficient access is provided for collection vehicle operators during collection times. Typically, operators are provided with keypad/swipe card access to service doors as required.

NOTE TO THE REPORT: VEHICLE LIMITATIONS

All waste collections for the site will occur within the on-site loading bay at basement level 1. Heritage constraints of the subject façade will limit incoming waste collection vehicles to a **maximum** SRV size. WSP understands that accommodating any larger vehicles (i.e. larger MRV sized waste collection vehicles) will **not** be possible without significant impact upon heritage features.

As such, the waste system as specified throughout this WMP will maintain a private collection contractor for all uses (residential, hotel, commercial). This will provide for waste collection to be entirely contained on-site and reduce vehicle movement.

5 ADDITIONAL INFORMATION

5.1 STANDARDS & COMPLIANCE

5.1.1 VENTILATION

Ventilation will be provided in accordance with Australian Standard AS1668.

5.1.2 WASHING AND VERMIN PROTECTION

A third-party bin washing service can be engaged to perform this service. Bin washing suppliers must retain all wastewater to within their washing apparatus and not impact on the drainage provisions of the site.

5.1.3 NOISE REDUCTION

All waste areas shall meet BCA and AS2107 acoustic requirements as appropriate with operational hours and collection times assigned to minimise acoustic impact on surrounding premises.

5.2 HIGH LEVEL PURCHASING SCHEDULE

Table 17 lists the waste equipment required for the development under the conditions proposed within this report. A complimentary list of suppliers is provided for convenience.

Table 17 Equipment Supply Schedule

Item	Supplier	Typical Services Requirement(s)**	Quantity / Notes
Dual Waste Chutes	Private Supplier (Wastech or equivalent)	Power: 2 x 240V 10A Power (at roof for ventilation fan)	1x Dual Chute System (2x chutes total)
Bin Conveyors	Private Supplier (Wastech or equivalent)	Power: 240V 10A Power per unit	2x Bin Conveyors
Food Organics Digester	Private Supplier (Power Knot or equivalent)	Power: 240V 10A Power Water: Cold 1/2" water connection Drain: Min 3" sanitary drain connection (via grease trap to authority requirement)	1x 300 kg/day unit 1x 500 kg/day unit
1100L Bins	Private Supplier* (SULO or equivalent)	nil	15x Garbage 6x Recycling 4x Cardboard
660L Bins	Private Supplier* (SULO or equivalent)	nil	1x Garbage 1x Recycling 5x Glass 1x Charity
120L Bins	Private Supplier* (SULO or equivalent)	nil	8x Garbage 4x Recycling 2x garbage and 1x recycling bins for the top four residential levels. Refer Table 13.
60L Bins (Slimline)	Private Supplier* (SULO or equivalent)	nil	25x Food Organics 25x Glass 1x food organics and 1x glass bin per residential level. Refer Section 4.2.3 and Section 4.2.4.
*Private waste collection contractors often supply their own bins for collection.			
**Services requirements are indicative only and must be confirmed with the manufacture prior to commencement of construction			

5.3 SUPPLIER CONTACT INFORMATION

A complimentary listing of contractors and equipment suppliers is provided in Table 18 below for your reference. You are not obligated to procure goods/services from these companies. This is not, nor is it intended to be, a complete list of available suppliers. WSP does not warrant (or make representations for) the goods/services provided by these suppliers.

Table 18 Supplier Contact List

Service Type	Contractor / Supplier Name	Phone	Website
Private Waste Collectors	Citywide Service Solutions	(03) 9261 5000	www.citywide.com.au
	Cleanaway	13 13 39	www.cleanaway.com.au
	Veolia	132 955	www.veolia.com
Equipment Suppliers	Wastech Engineering (Chutes, Bin Conveyors)	(03) 8787 1600	www.wastech.com.au
	ASI JD MacDonald (Chutes Bin Conveyors)	(03) 8558 7200	www.jdmacdonald.com.au
	Sulo Australia (Bins)	1300 364 388	www.sulo.com.au
	Power Knot (Organics Digester)	+1-408-889-8433	www.powerknot.com/
Bin Washing Services	The Bin Butlers	1300 788 123	www.thebinbutlers.com.au
	Kerbside Clean-A-Bin	(03) 9830 7381	www.kerbsidecleanabin-srp.com.au
	Calcorp Services	1800 225 267	www.calcorpservices.com.au
	WBCM Environmental Australia	1300 800 621	www.wbcm-aust.com.au
E-waste Collection Services	TechCollect	1300 229 837	www.techcollect.com.au
	Mobile Muster (Mobile Phones)	1800 249 113	www.mobilemuster.com.au
	ToxFree (Secure E-waste Destruction)	1300 869 373	www.toxfree.com.au

APPENDIX A

SCALED WASTE ROOM DRAWINGS



Builders / Contractors shall verify all dimensions before any work commences. Dimensions shown are nominal. Figured dimensions shall take precedence over scaled dimensions. Any discrepancies are to be made known to the Architects / Designers studio prior to any works commencing on site. All shop drawings shall be submitted for review and manufacture shall not commence prior to the return of stamped shop drawings.

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GENERAL NOTES

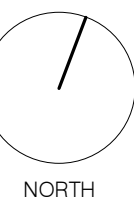
LIFT SUMMARY

- 1. COMMERCIAL & ROOFTOP BAR
- 2. HOTEL GOODS
- 3. HOTEL GOODS
- 4. HOTEL GUESTS, BALLROOM & WELLNESS
- 5. HOTEL GUESTS, BALLROOM & WELLNESS
- 6. RESIDENTIAL PASSENGER & GOODS
- 7. RESIDENTIAL PASSENGER
- 8. RESIDENTIAL PASSENGER

B 28/09/2023 REVISED DESIGN ISSUED FOR COORDINATION
A 24/04/2023 TOWN PLANNING APPLICATION

Rev Date Chkd Reason for Issue

Based on Drawings Received:



carr
Level 4
31 Flinders Lane
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PO Box 18069
Collins Street East
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8003 Australia
+61 3 9665 2300
info@carr.net.au
carr.net.au

Project 607 - 623 Collins Street Melbourne

Title FLOOR PLAN - BASEMENT LEVEL 1

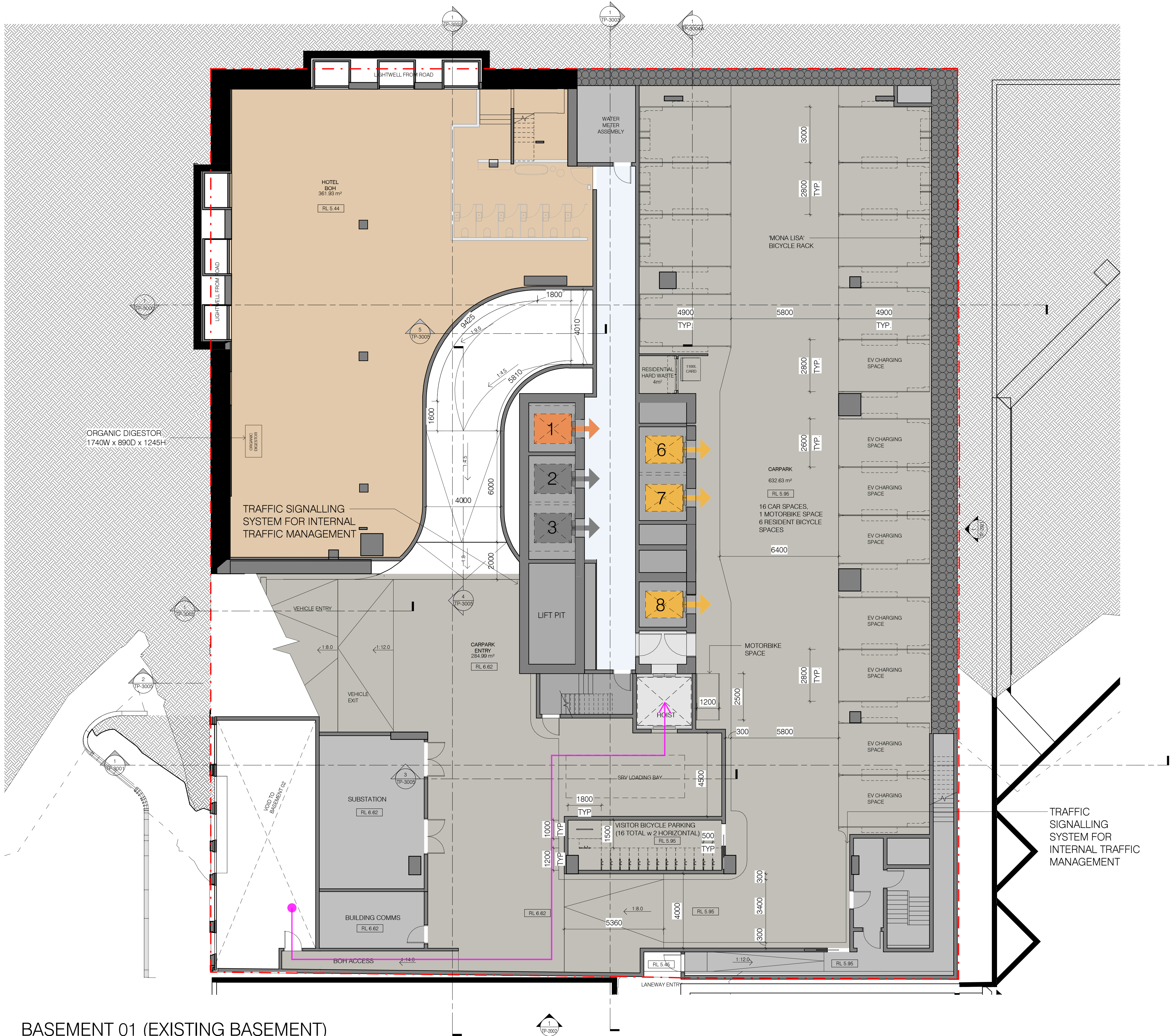
Date 12/06/21 Project No 21062

Scale @ A1 1 : 100 Dwg No TP-03B1

Drawn By CE Chkd DB Rev B

NOT FOR CONSTRUCTION

BASEMENT 01 (EXISTING BASEMENT)



Builders / Contractors shall verify all dimensions before any work commences. Dimensions shown are nominal. Figured dimensions shall take precedence over scaled dimensions. Any discrepancies are to be made known to the Architects / Designers studio prior to any works commencing on site. All shop drawings shall be submitted for review and manufacture shall not commence prior to the return of stamped shop drawings.

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GENERAL NOTES

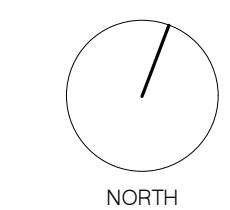
LIFT SUMMARY

- 1. COMMERCIAL & ROOFTOP BAR
- 2. HOTEL GOODS
- 3. HOTEL GOODS
- 4. HOTEL GUESTS, BALLROOM & WELLNESS
- 5. HOTEL GUESTS, BALLROOM & WELLNESS
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- 7. RESIDENTIAL PASSENGER
- 8. RESIDENTIAL PASSENGER

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A 24/04/2023 TOWN PLANNING APPLICATION

Rev Date Chkd Reason for Issue

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Melbourne VIC
8003 Australia
+61 3 9665 2300
info@carr.net.au
carr.net.au

Project 607 - 623 Collins Street Melbourne

Title FLOOR PLAN - GROUND FLOOR

Date 12/06/21 Project No 21062

Scale @ A1 1 : 100 Dwg No TP-0300

Drawn By CE Chkd DB Rev B

NOT FOR CONSTRUCTION



Builders / Contractors shall verify all dimensions before any work commences. Dimensions shown are nominal. Figured dimensions shall take precedence over scaled dimensions. Any discrepancies are to be made known to the Architects / Designers studio prior to any works commencing on site. All shop drawings shall be submitted for review and manufacture shall not commence prior to the return of stamped shop drawings.

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GENERAL NOTES

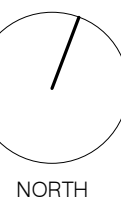
LIFT SUMMARY

- 1. COMMERCIAL & ROOFTOP BAR
- 2. HOTEL GOODS
- 3. HOTEL GOODS
- 4. HOTEL GUESTS, BALLROOM & WELLNESS
- 5. HOTEL GUESTS, BALLROOM & WELLNESS
- 6. RESIDENTIAL PASSENGER & GOODS
- 7. RESIDENTIAL PASSENGER
- 8. RESIDENTIAL PASSENGER

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A 24/04/2023 TOWN PLANNING APPLICATION

Rev Date Chkd Reason for Issue

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carr.net.au

Project 607 - 623 Collins Street Melbourne

Title FLOOR PLAN - GROUND FLOOR MEZZANINE

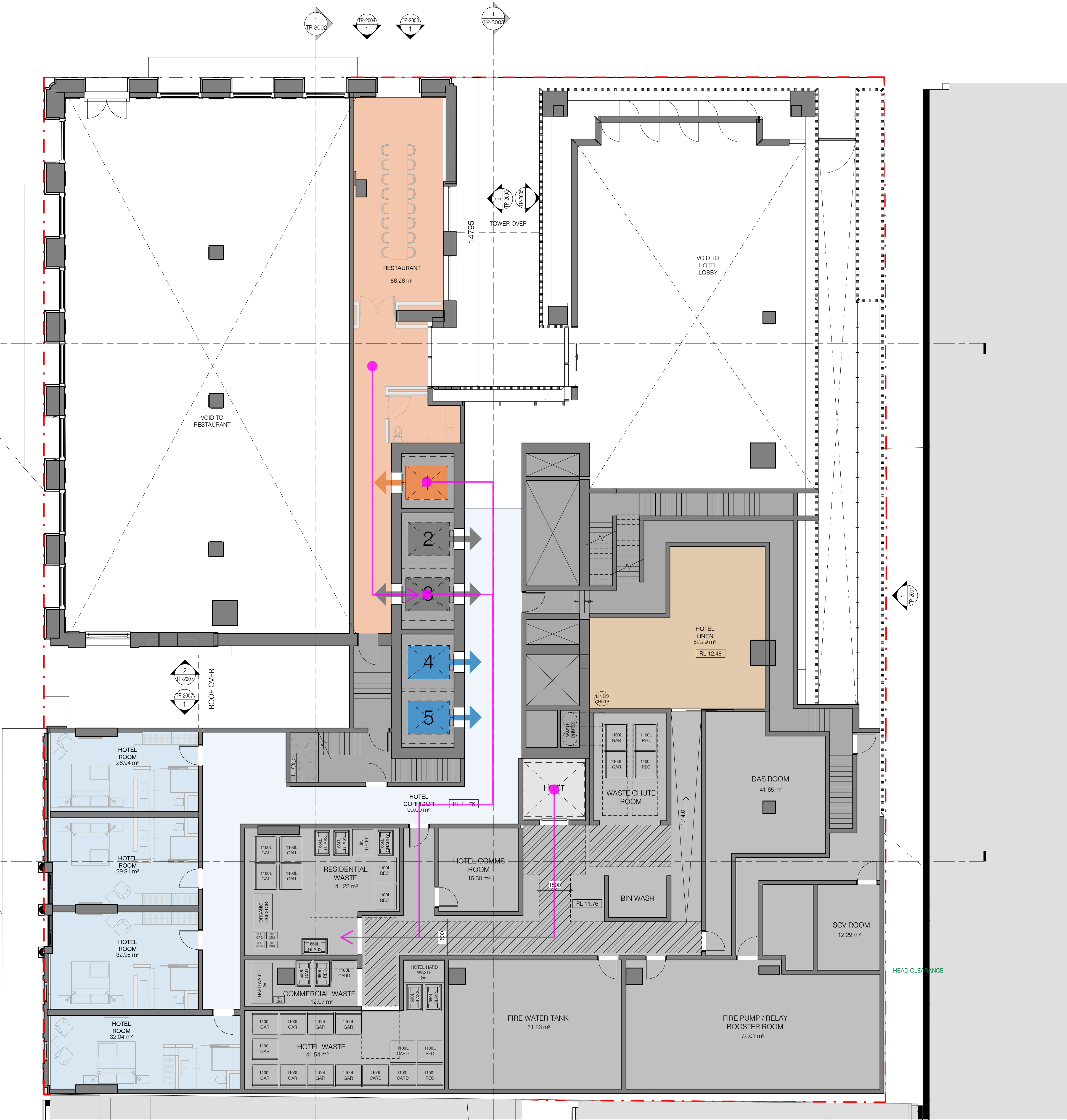
Date 12/06/21 Project No 21062

Scale @ A1 1 : 100 Dwg No TP-0300M

Drawn By CE Chkd DB Rev B

NOT FOR CONSTRUCTION

GROUND FLOOR MEZZANINE





LEVEL 1

Builders / Contractors shall verify all dimensions before any work commences. Dimensions shown are nominal. Figured dimensions shall take precedence over scaled dimensions. Any discrepancies are to be made known to the Architects / Designers studio prior to any works commencing on site. All shop drawings shall be submitted for review and manufacture shall not commence prior to the return of stamped shop drawings.

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GENERAL NOTES

- LIFT SUMMARY**
- 1. COMMERCIAL & ROOFTOP BAR
 - 2. HOTEL GOODS
 - 3. HOTEL GOODS
 - 4. HOTEL GUESTS, BALLROOM & WELLNESS
 - 5. HOTEL GUESTS, BALLROOM & WELLNESS
 - 6. RESIDENTIAL PASSENGER & GOODS
 - 7. RESIDENTIAL PASSENGER
 - 8. RESIDENTIAL PASSENGER

B	28/09/2023	REVISED DESIGN ISSUED FOR COORDINATION
A	24/04/2023	TOWN PLANNING APPLICATION
Rev	Date	Chkd Reason for Issue

Based on Drawings Received:



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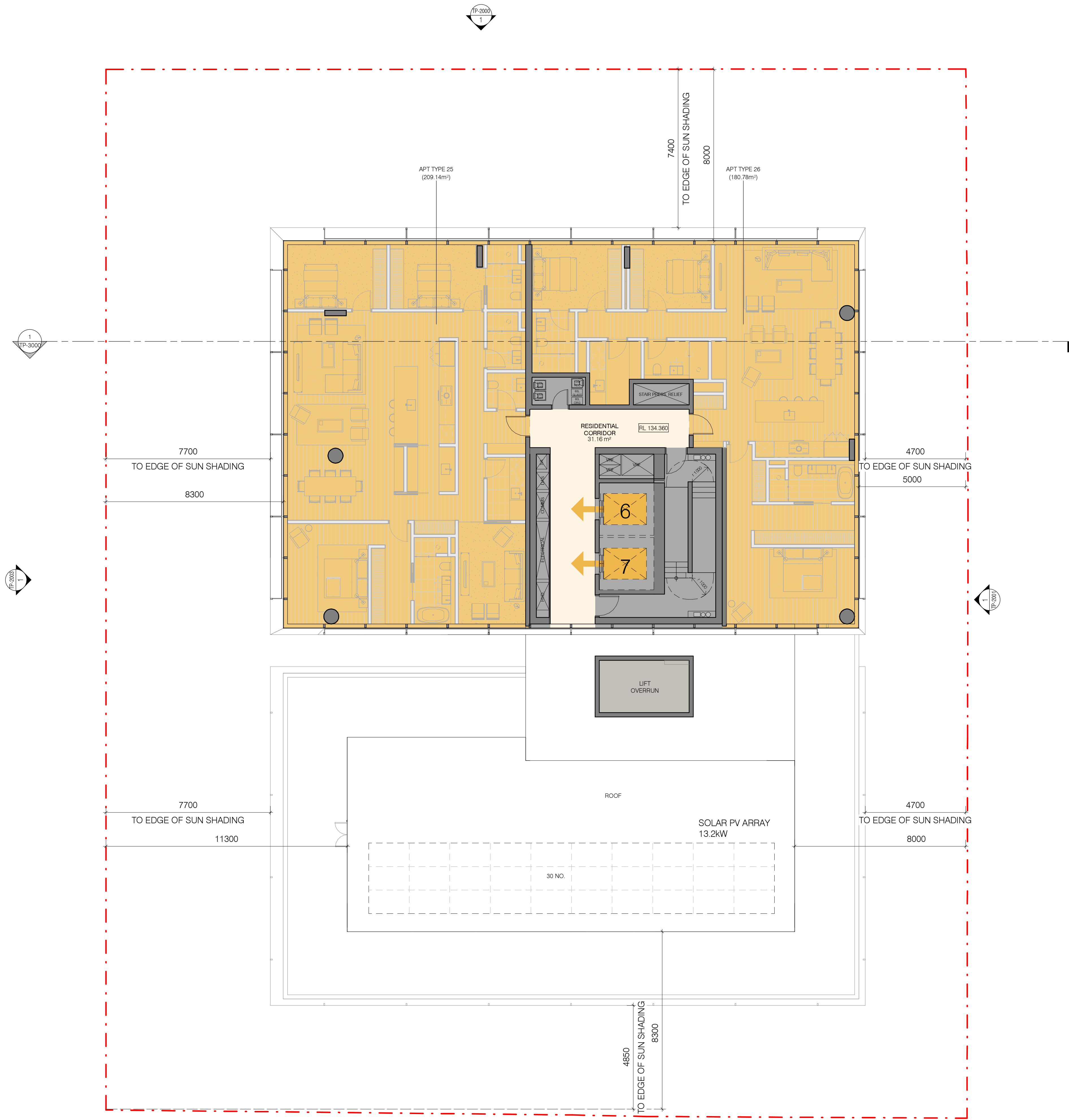
Title FLOOR PLAN - LEVEL 1

Date 12/06/21 Project No 21062

Scale @ A1 1 : 100 Dwg No TP-0301

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NOT FOR CONSTRUCTION



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GENERAL NOTES

LIFT SUMMARY

- 1. COMMERCIAL & ROOFTOP BAR
- 2. HOTEL GOODS
- 3. HOTEL GOODS
- 4. HOTEL GUESTS, BALLROOM & WELLNESS
- 5. HOTEL GUESTS, BALLROOM & WELLNESS
- 6. RESIDENTIAL, PASSENGER & GOODS
- 7. RESIDENTIAL PASSENGER
- 8. RESIDENTIAL PASSENGER

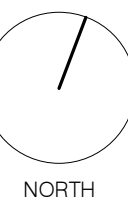
APARTMENT SUMMARY

- 1 BEDROOM
- 2 BEDROOM
- 3 BEDROOM
- PENTHOUSE

B	28/09/2023	REVISED DESIGN ISSUED FOR COORDINATION
A	24/04/2023	TOWN PLANNING APPLICATION

Rev	Date	Chkd	Reason for Issue
-----	------	------	------------------

Based on Drawings Received:



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+61 3 9665 2300
info@carr.net.au
carr.net.au

Project 607 - 623 Collins Street Melbourne

Title FLOOR PLAN - LEVEL 38-41

Date 03/04/2023 Project No 21062

Scale @ A1 1 : 100 Dwg No TP-0338

Drawn By CE Chkd DB Rev B

NOT FOR CONSTRUCTION

APPENDIX B

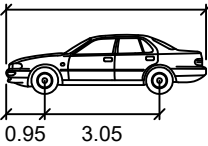
SWEPT PATH DIAGRAMS



VEHICLE PROFILE

VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

5.20*



0.953.05

99th percentile
(AS/NZS 2890.1:2004)

Width

:

1.94

Track

:

1.84

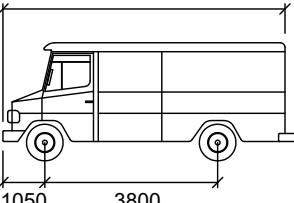
Kerb to Kerb Radius

:

12.5m

* actual template based on 'relevant longitudinal dimensions that affect swept path' as set out in Section B2.1 of AS/NZS 2890.1:2004

6400



10503800

SRV (AS 2890.2)

mm

Width

:

2300

Track

:

2300

Lock to Lock Time

:

6.0

Steering Angle

:

38.0

LEGEND

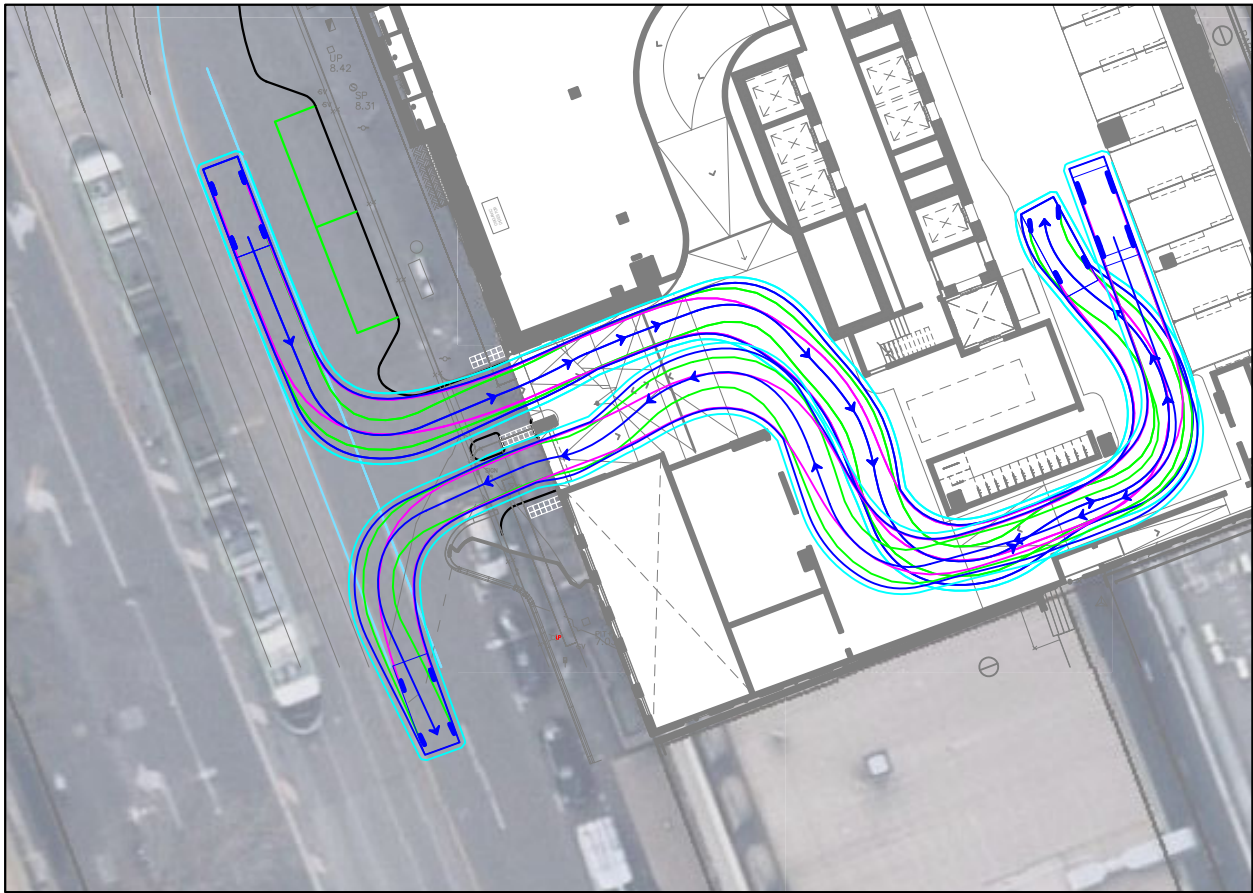
REAR WHEELS

FRONT WHEELS

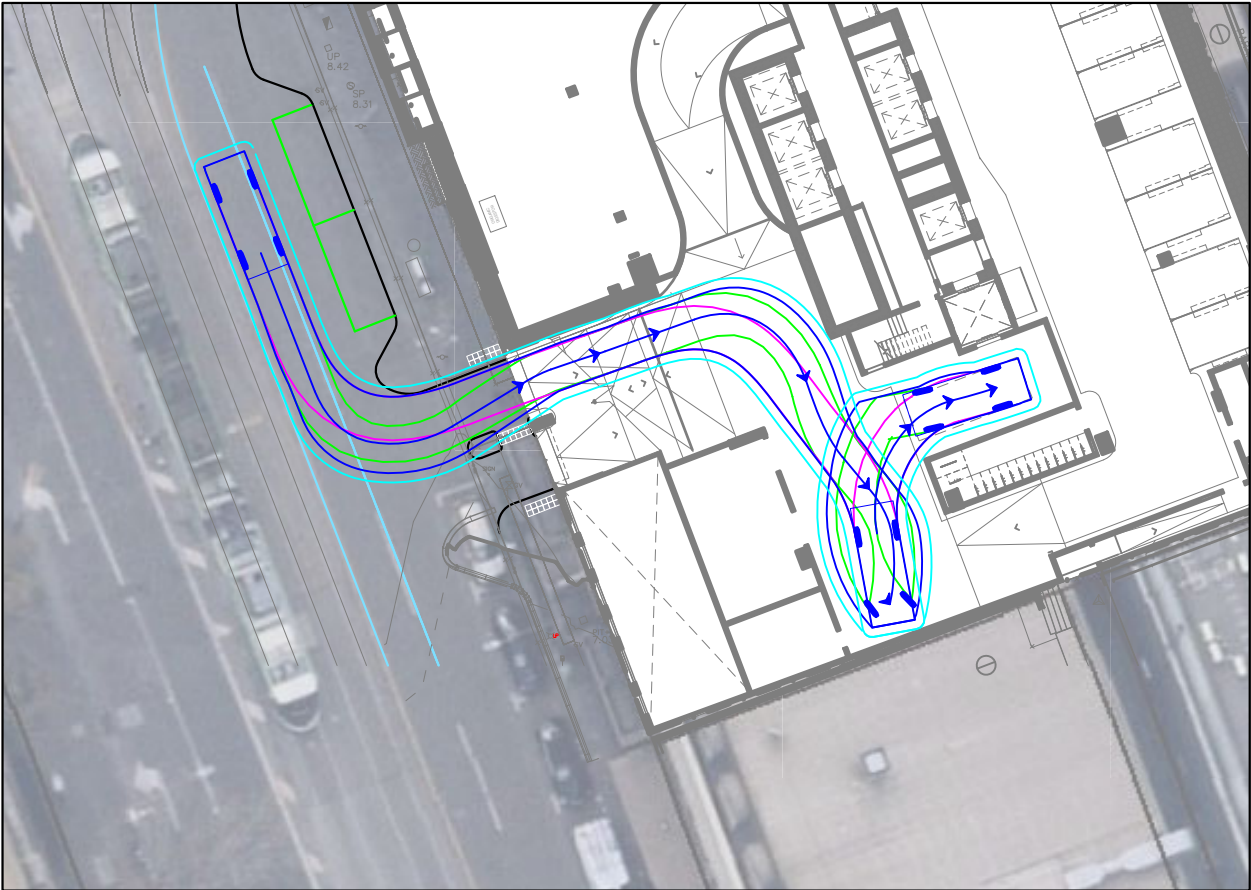
VEHICLE BODY

BODY CLEARANCE

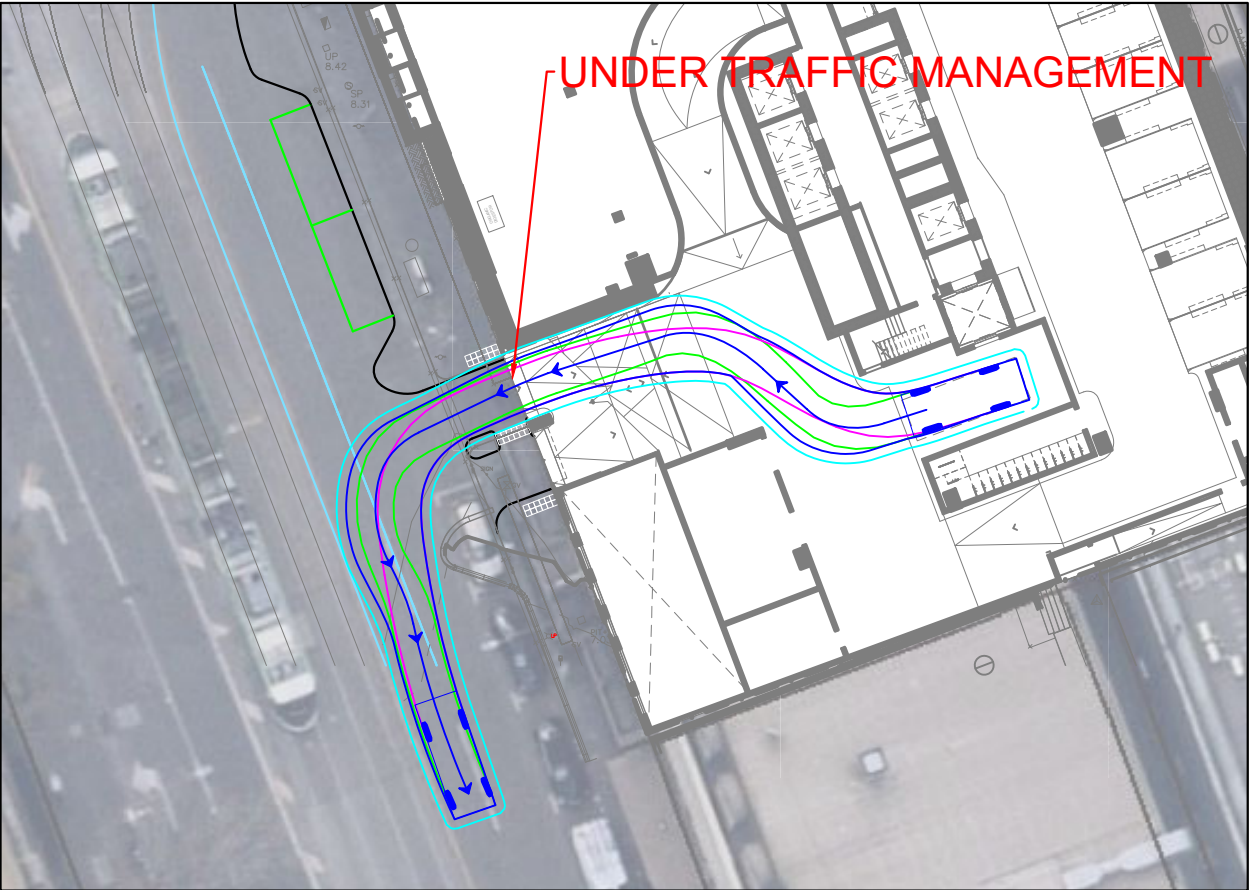
SPENCER STREET SITE ACCESS - B99 PASSING (INGRESS & EGRESS)



SPENCER STREET SITE & LOADING BAY ACCESS - SRV INGRESS



SPENCER STREET SITE & LOADING BAY ACCESS - SRV EGRESS

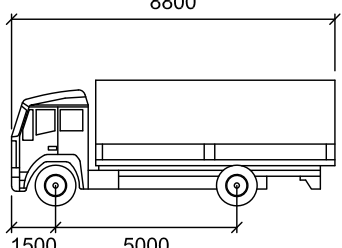


APPENDIX C

SWEPT PATH CONFLICT ANALYSIS



VEHICLE USED IN SIMULATION
(VEHICLE SPEED - 5KM/H)

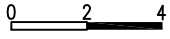
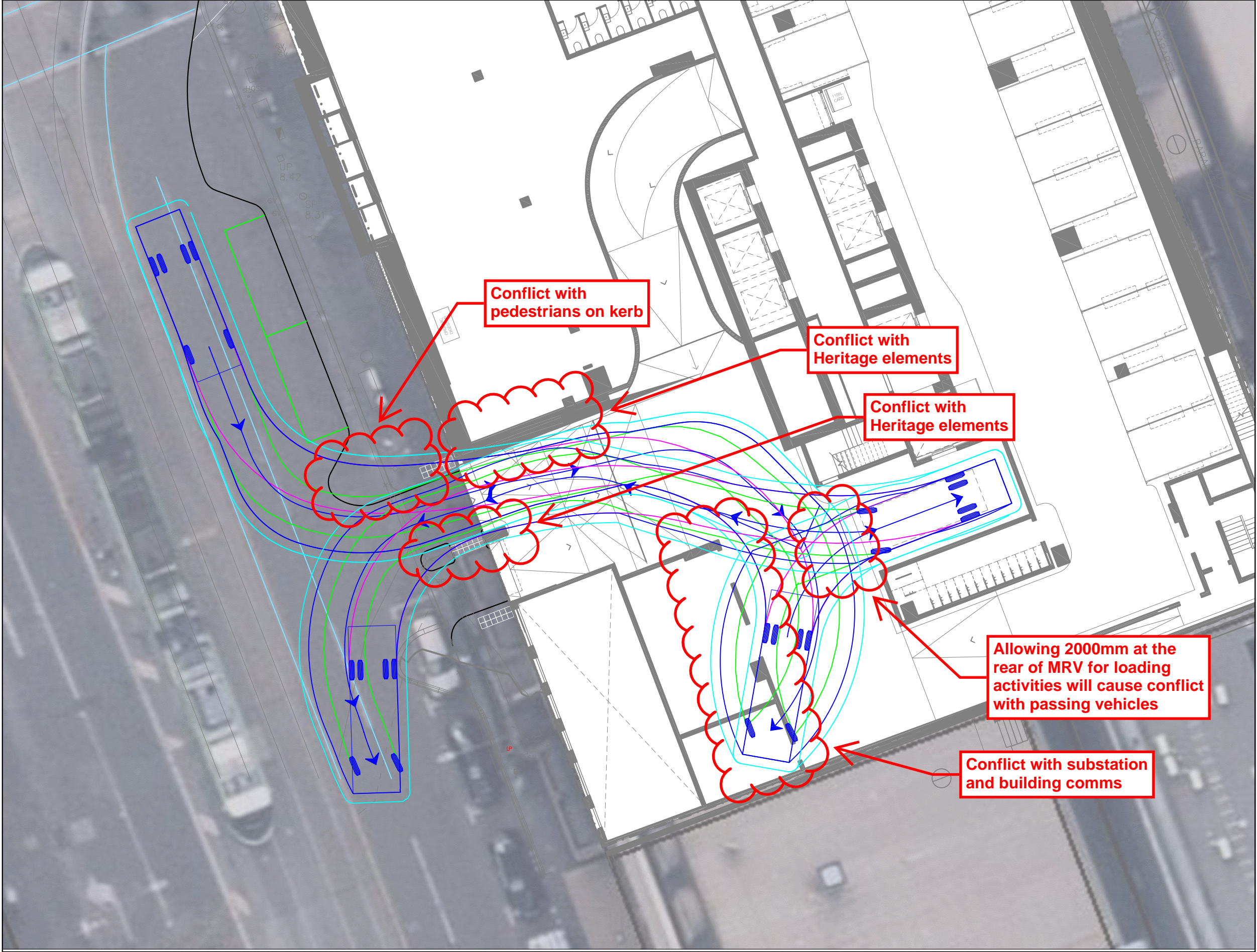


MRV (AS 2890.2) mm

Width	:	2500
Track	:	2500
Lock to Lock Time	:	6.0
Steering Angle	:	34.0

LEGEND

REAR WHEELS	VEHICLE BODY
FRONT WHEELS	BODY CLEARANCE



APPENDIX D

TYPICAL DIGESTER SPECIFICATION





LIQUID FOOD COMPOSTER



reduce waste



reduce cost



reduce CO₂



LFC-100
is pictured

LOOKING FOR A CLEAN AND ENVIRONMENTALLY FRIENDLY WASTE FOOD DISPOSAL SOLUTION?

The LFC (Liquid Food Composter) is a commercial bio digester that decomposes most waste food in less than 24 hours, before safely releasing it to the sewage system. And by diverting your waste food from landfills the LFC helps you significantly reduce your carbon footprint.

The LFC is a fully enclosed automatic commercial bio digester that decomposes waste food at your facility.

Say goodbye to the messy and expensive business of handling waste food forever at facilities including:

- Hotels
- Cafes and restaurants
- Hospitals and aged care homes
- Corporate and university cafeterias
- Convention centers
- Supermarkets and food distribution centers
- Remote sites including mining, immigration and indigenous communities
- Island communities and resorts

The LFC is a clean and environmentally friendly waste food disposal solution that uses a series of processes where microorganisms break down most waste food into grey water that's safe to discharge into the sewage system.

In under 24 hours, the LFC can dispose of most waste food including:

- Fruits and vegetables
- Meat and fish
- Most organic foods
- Cheese
- Bread
- Rice and noodles

With an LFC at your facility your employees won't waste time and risk possible injuries by pushing heavy bins outside for collection. You will dramatically increase your facility's hygiene and reduce flies, rodents and other vermin in and around your waste bins. And by diverting your waste food from landfill, you will be significantly reducing your facility's carbon footprint.

PRODUCT FEATURES

- Decomposes waste food at your facility – can be installed in your kitchen or work area
- Discharge from LFC safe to enter sewage system
- Continuous process allows waste food to be added any time
- No emptying of the LFC is required
- Payback is typically under 24 months
- Waste food weight continuously monitored and reported both graphically and numerically on usage and waste food digested
- Simple, quiet and safe operation with odor free and air tight tank
- All monitoring, reporting, diagnostics and alerts accessible remotely on your PC, Tablet and Smartphone
- Monitor your carbon footprint savings



SIMPLE OPERATION

The LFC is constantly digesting the waste and you can add waste food at any time. Simply open the door, throw it in, and close the door. In this way, you can view the LFC as a bottomless bucket.

The motor on the LFC won't run while the door is open for safety. Your operation can be streamlined because large bins and plastic bags are no longer needed to hold waste food. Instead, smaller bins are used that help avoid injuries to employees.

All configuration, indications, reports, and statistics are available through the touch screen. The operator doesn't need to use the touch screen and for most applications the default settings work well. All configurable parameters are protected by password.

WEIGHING THE AMOUNT OF WASTE

Load cells on each corner of the LFC accurately weigh the amount of waste food in the LFC, the amount that is added, and the amount that is digested. This data is automatically stored and reported graphically and numerically. The data can be viewed by the hour, day, week, month, and year.

As the operator adds waste into the LFC, the touch screen indicates how much more can be added. When the door is closed the LFC indicates with a bright LED when more waste can be added with a simple green indication. As waste is added, the indication becomes yellow when no more waste should be added and red if the operator overloads the LFC.

History	Waste		Door opened
	lb	kg	
Today	145	2	
This week	970	27	
This month	2,313	180	
This year	34,741	1,406	

Carbon Graph Log Exit

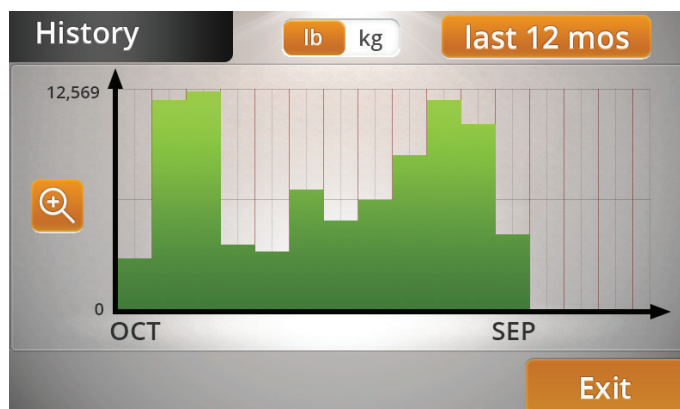
CONNECTION TO THE CLOUD

The LFC can connect through its Ethernet port to a cloud server maintained by Power Knot. The LFC securely sends data about the operation of the LFC to the server and that data is retained for five years. The data includes the amount of waste food digested hourly, daily, weekly, monthly, and yearly; the number of times the door is opened in these periods; and the amount of CO₂ diverted from the landfill during these periods. If you have multiple machines, you can aggregate the data into a single report.

Remotely, you can view the health of the system including all diagnostics and when the LFC requires scheduled maintenance.

You have access to view and manipulate the data from any computer, tablet, or smartphone anywhere in the world. This access is available as long as you own the LFC at no charge to you.

The LFC Cloud can send you an e-mail with daily, weekly, or monthly statistics, alert you when it is time for periodic maintenance, and send an e-mail if there seems to be a problem with the LFC. Whilst the LFC is under warranty, Power Knot can also monitor your LFC at no charge.



HOW IT WORKS



Install the Liquid Food Composter (LFC) onsite



Add waste food into the LFC



Microorganisms rapidly decompose waste food

The LFC uses a series of processes in which micro-organisms break down biodegradable material in the presence of oxygen. The environment of the LFC, with our proprietary mixture of microbes and enzymes, accelerates the digestion of most food products and bio-plastics within 24 hours. The output is grey water that is environmentally safe. You can discharge this down the drain or use it to enrich your landscape.

The LFC is a practical alternative to the traditional disposal of waste food. Anything you can eat, including fruits,

vegetables, meat, fish, cheese, bread, rice, and noodles can go into the LFC. The machine can compost both raw and cooked foods. The process is totally green because it uses no chemicals.

As one of earths' oldest processes, composting is the most effective means of stabilizing and converting bio-degradable waste. The waste food is not being chopped but it is decomposed to such a degree that it becomes a liquid and can exit the machine only through a fine mesh screen. The rich by-product is therefore safe and replenishes nature.

WHAT CAN GO IN THE LFC?



Fruit



Vegetables



Banana and skin



Fruit without stones



Nuts



Meat



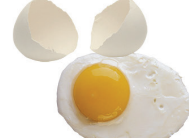
Fish and bone



Crustaceon



Stew (when cool)



Egg and eggshell



Bread



Noodles



Cheese



Pineapple heads (cut)



Corn



CAPACITY

The amount of food that can be decomposed depends on the type of food, the frequency with which it is added to the machine, and the duration of the working day. The rated capacity of a machine is based on a mixture of raw and

cooked food as may be found in a typical restaurant added over a 12 hour to 16 hour working day. The upper capacities in the table below assume that you add waste food over a 24 hour day. Cooked rice, pasta, or bread are some of the foods that are rapidly decomposed and if added in equal portions throughout the day then the capacities can be more than those listed in the table below.

INSTALLATION

The LFC is usually installed inside the area where the food is prepared or it can be placed outside under a suitable protective cover. The machine has castors so it can be rolled into position. The feet on the load cells are then lowered onto the supplied rubber pads that help to reduce vibrations and noise.

The LFC requires hot and cold water input and a 1¼" to 3" drain out (depending on model). It also requires an electrical supply.

SIZES OF LFCs

	LFC-20	LFC-50	LFC-70	LFC-100	LFC-200	LFC-300	LFC-500	LFC-1000
Capacity per day	20 kg	50 kg	70 kg	100 kg	200kg	300 kg	500 kg	1000 kg
Size, width x depth x height, cm	56 x 49 x 73	87 x 68 x 101	95 x 72 x 108	115 x 75 x 111	148 x 81 x 127	154 x 105 x 149	190 x 120 x 162	260 x 141 x 174
Weight when empty	80 kg	168 kg	220 kg	247 kg	350 kg	520 kg	820 kg	1250 kg
Electrical supply	240 V - 50 Hz	240 V - 50 Hz	240 V - 50 Hz	240 V - 50 Hz	240 V - 50 Hz / 415 V - 50 Hz	415 V - 50 Hz	415 V - 50 Hz	415 V - 50 Hz
Maximum power	200 W	650 W	650 W	1.1 kW	1.1 kW	2.0 kW	2.8 kW	4.5 kW
Energy per day	2.3 kWh	3.9 kWh	3.9 kWh	6.2 kWh	6.2 kWh	11 kWh	15 kWh	24 kWh
Water per day	55 litre	150 litre	190 litre	250 litre	530 litre	800 litre	1200 litre	1900 litre

SPECIFICATIONS

Construction: all stainless steel (chassis, side panels, drum, shaft, arms, paddle, and load cells)

Water: ½" FIP, 200 to 700 kPa (29 to 100 psi, 2 to 7 kg/cm²)

AC Power: 240 V - 415 V - 50 Hz (based upon model)

Weighing Accuracy: ±1%

MMI: 22 mm 3-color LED and 4" or 7" touch screen with 65k colours

Ethernet: RJ45, 100 baseT, DHCP or fixed IP address

Operating environment: indoors or covered patio

Operating temperature: 4°C to +35°C

Ingress protection: IP54 – splash proof and dust proof

Operating lifetime: expected to be 15 to 25 years

Warranty: three years on all parts and components

Safety: certified to UL430 (waste disposal machines); CAN/CSA-C22.2 No. 60335-1:11 and EN 60335-1:2010+AMD1:2013 (general safety); CAN/CSA-C22.2 No. 60335-2-16:16 and EN 60335-2-16:2002+A1:2008+A2:2011 (waste food disposers)
RoHS: compliant for EU and China



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