



**Sydney International Convention Exhibition
and Entertainment Precinct (SICEEP)
Darling Square - North Plot and The Square
SSDA10**

Traffic, Transport and Accessibility - Addendum Report

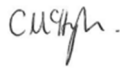
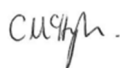
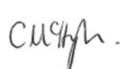



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Reference: 15SYT0046
24 November 2016

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1. Introduction

1.1. Background

This addendum report provides a response to submissions and assessment of the proposed amended development in relation to the State Significant Development (SSD) Development Application (DA) for the development of the North Plot and Square in Darling Square (SSD 7021).

The SSD DA was publicly exhibited for a period of 47 days from 17 March 2016 to 2 May 2016. During this time, ten (10) submissions were received from government agencies and the City of Sydney Council.

This report should be read in conjunction with the original assessment prepared by TTM Consulting dated 10 February 2016 to support the development of the North Plot and Square (SSD 7021). This report should also be read in conjunction with a concurrent s96 modification application to the North-East Plot (SSD 6626), with consequential amendments to this approval proposed in order to accommodate servicing and functions generated by the North Plot.

1.2. Proposed Amended Development

Since public exhibition of the proposal, generally minor amendments and improvements have been made to the proposed development. The final project design includes amendments made by Lend Lease pursuant to Clause 55 of the Environmental Planning & Assessment Regulation, including changes to address matters raised in the submissions.

The following key amendments have been made to the proposal:

- minor increase in overall site area;
- minor increase in Gross Floor Area;
- changes to the external building design including a revision of the external stair, shifting of floor plates and resultant changes of revised internal planning;
- slight adjustment to the site boundary, increasing to accommodate the revised Darling Exchange building and public domain interface enhancements;
- revisions and enhancements to the proposed public domain treatments;
- revised loading and servicing strategy; and
- inclusion of fitout and operation of the child care facility.

The final proposal seeks approval for the following key development:

- Construction and use of a six (6) storey building (known as The Darling Exchange) containing the following uses:
 - Retail tenancies/market hall (such as market stalls, food and beverage premises and bar/restaurant operations);
 - Community uses (such as a library including IQ Hub and child care); and

- Fitout and operation of the ground level and mezzanine market hall, the child care facility, and the food and beverage offering (bar/restaurant) within The Darling Exchange.
- Public domain improvements, including:
 - Creation of a new publicly accessible square (The Square) with space for markets, outdoor events, passive and active recreation;
 - Provision of a timber canopy extending from The Darling Exchange along the western edge of The Square;
 - Provision of two kiosk-style retail pods below the canopy;
 - Creation of Little Hay Street, a new pedestrian only laneway between the North-East Plot and South-East Plot; and
 - Completion of general interface works to connect areas of new public domain with the existing public domain.
- Remediation as may be required; and
- Extension and augmentation of physical infrastructure/utilities as required.

1.3. TfNSW Submission

TfNSW has submitted a response to the Lodged DA in its letter dated 16 May 2016. In relation to the proposed loading areas within the Darling Square Precinct it states:

“TfNSW advises that new developments should cater for all loading, servicing and drop off/ pick up to be conducted on site. The applicant should not rely on the kerb side restrictions space and restrictions to conduct their business activities. Kerb side restrictions space is allocated are set to suit the wider community needs and are constantly subject to change based on network requirements.

TfNSW requests that the applicant be conditioned to prepare a loading area management plan for the endorsement of the CBD Coordination Office within TfNSW. The loading area management plan shall include, but not be limited to, the following:

- *Details of vehicles accessing the loading areas including the estimated number of movements and type of heavy vehicles;*
- *Loading area management details including service vehicle movements during peak periods;*
- *Management of conflicts between vehicles accessing the site and pedestrian movements in the precinct in particular reversing service vehicles at the public places;*
- *Details of alternate loading zones to redirect vehicles due to extensive queuing at the access to the precinct; and*
- *Management of incidents at the access to the loading areas.”*

This report addresses the issues raised by TfNSW in relation to the operation of the North Plot and The Square.

2. Previously Proposed Servicing Arrangements (exhibited proposal)

The exhibited proposal sought on-street parking for servicing of the North Plot and the Square. The loading areas were to be shared by all uses with servicing occurring between 5.00 am and 8.00 pm.

The development proposal associated with the exhibited proposal included 5 loading areas around the Darling Square precinct North Plot building. Waste collection facilities were provided at 2 locations. The loading areas and waste servicing locations are shown in Figure 2-1. They include:

- Location A – (For larger vehicles) Harbour Street layby opposite Factory Street
- Location C – North of the North Plot via Little Pier Street
- Location D – The Boulevard via Hay Street (a supplementary and occasional option only, for special events and the markets)
- Location E – Theatre Access Lane
- Location F – Access to within the square itself for setting up and removing goods associated with special events
- Waste collection B – in the North East Plot loading dock
- Waste collection C – North of the North Plot via Little Pier Street (a supplementary and occasional option only)

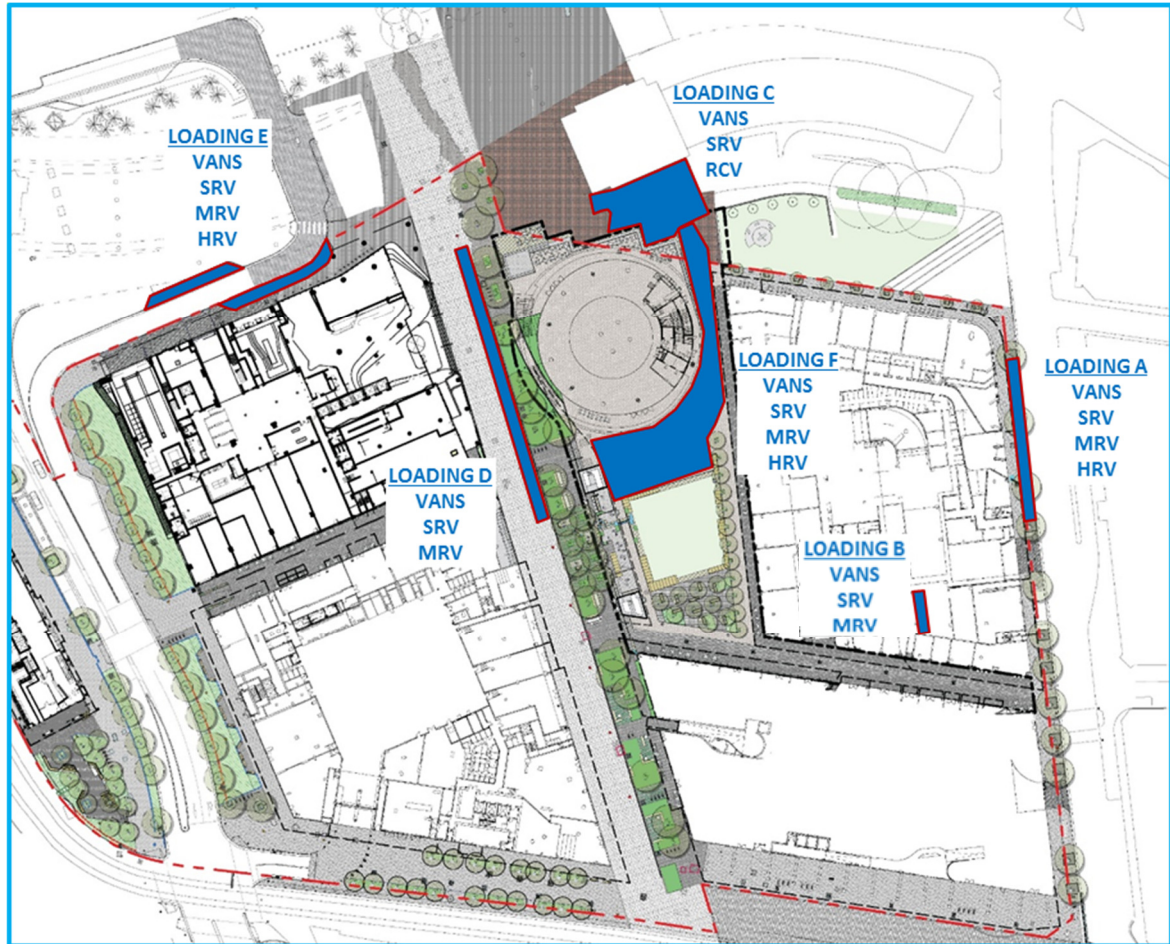


Figure 2-1: Location of Loading Areas (exhibited proposal)

3. Amended Servicing Arrangements (Current Proposal)

The amended servicing arrangements recognises that there are two different types of servicing arrangements required for the site. They are:

1. Servicing arrangements required for the day to day operations of the North Plot. This includes deliveries to the retail and bar/restaurant uses, servicing of the long day care centre, the requirements of the library, and waste collection.
2. Servicing arrangements for special events held in The Square plus waste collection for The Square / public spaces.

In general terms servicing arrangements for the day to day operation of the North Plot are better suited to be provided off-street whilst special events which involve set up and take down activities are better undertaken as close as possible to The Square and managed by marshals.

Based on these considerations two servicing arrangements are proposed, one for the North Plot and one for The Square. Each of these arrangements are presented separately below.

3.1. Servicing Arrangements for the North Plot (Current Proposal)

The Current Proposal for the North Plot involves relocation of servicing to the basement of the North East Plot. There is limited reliance on dedicated on-street loading zones. Loading Area F adjacent to Harbour Street is to be retained for servicing of the community in general (including the Darling Square Precinct). The changed arrangements are presented in Figure 3-1.

The provision of service vehicle parking within the North East Plot to service the North Plot would be:

- 2 x Van Bays – New
- 4 x SRV Bays – New
- 1 x 8.8 metre MRV bay (already approved as part of North East Plot DA)
- 1 x 10.3 metre MRV bay (already approved as part of North East Plot DA)

Plant within the North East Plot building has been relocated to accommodate the new van and SRV bays. Sharing of the MRV bays allocated to the North East Plot results in better utilisation of these spaces. The previously proposed servicing arrangements (exhibited proposal) included use for the North East Plot as the primary waste collection facility for the North Plot. This part of the proposed sharing arrangement is no different to the exhibited proposal.

The arrangements within the North East Plot are the subject of a separate Modification Application for the North East Plot.

The service area will be accessible 24 hours a day. A loading area management plan will be implemented once the facility is fully operational. It will include a booking system with time slots allocated to the various uses within the North Plot. Before and after hours access will be

encouraged. Specific details of vehicles to be accommodated and the times of access can only be determined once the tenancies are finalised.

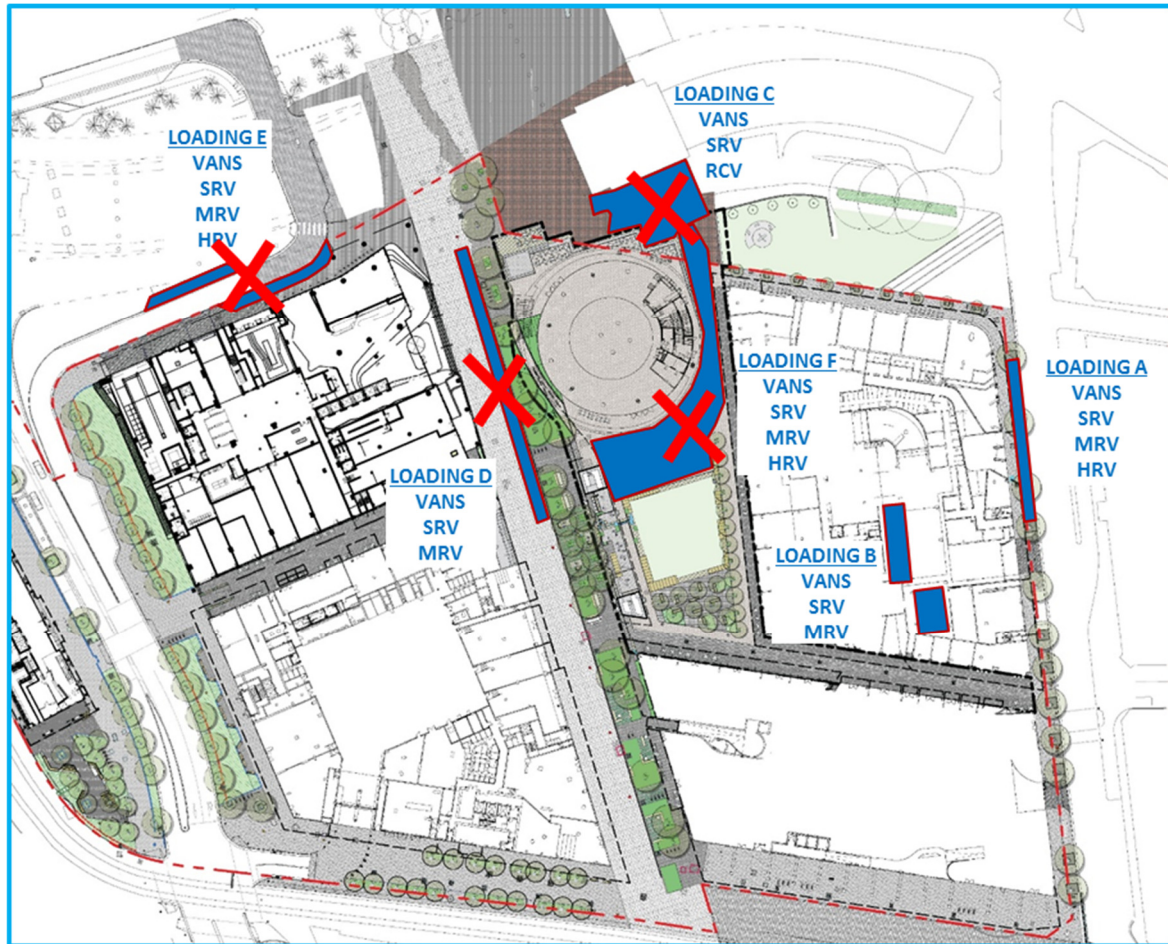


Figure 3-1: Location of Loading Areas within the North Plot (Current Proposal)

Details of loading areas for the North Plot under the Current Proposal are shown in Figure 3-2. Swept paths for each loading bay are also shown (Further details in Appendix A). Boom gates will separate residential and service vehicle parking.

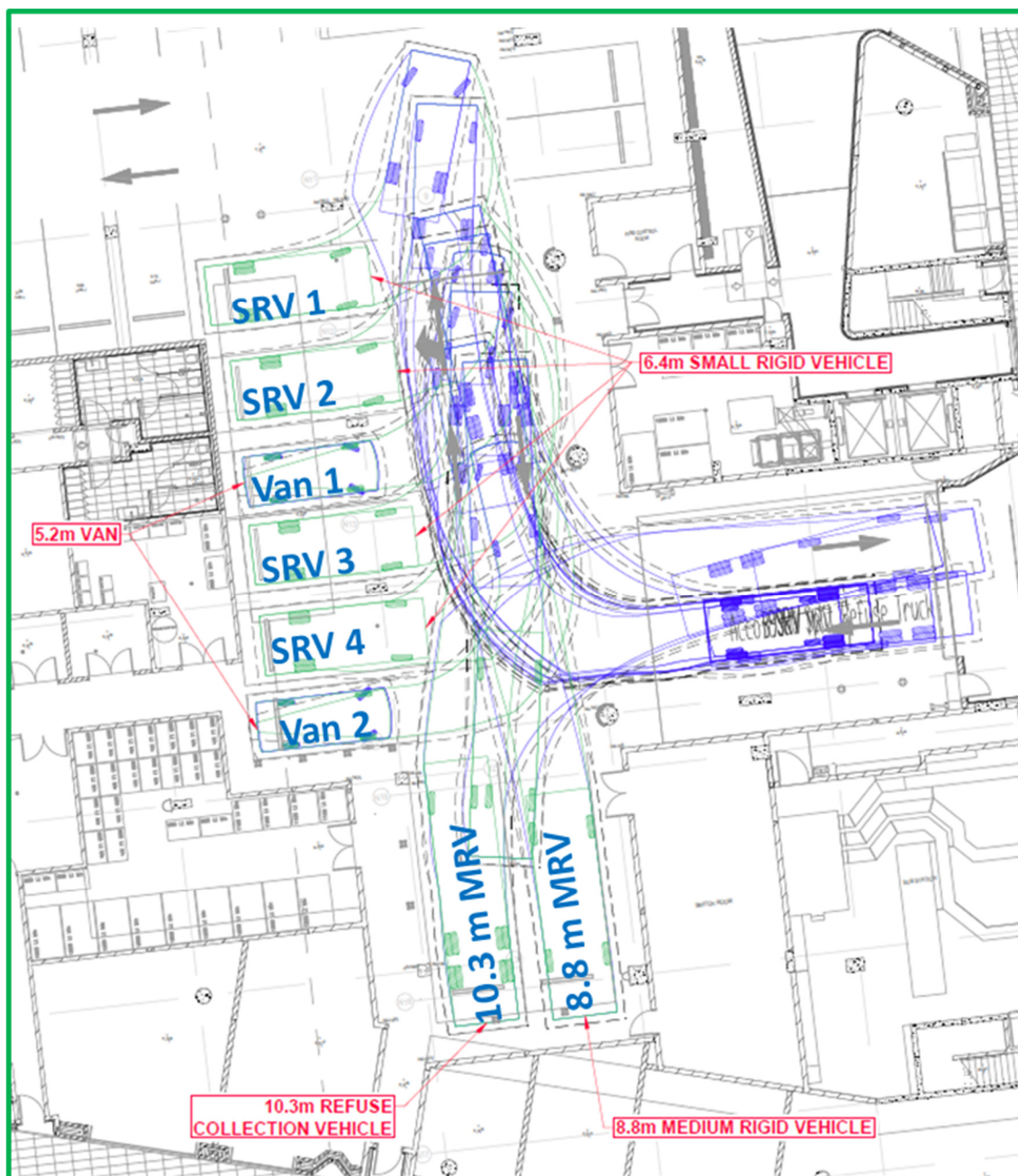


Figure 3-2: Details of Loading Areas within the North Plot (Current Proposal)

3.2. Servicing Arrangements for The Square (Current Proposal)

The Square's primary function is to accommodate special events. Two retail pods are located at the edge of the square. These pods will be serviced like other pod style uses elsewhere in the CBD, with small deliveries occurring when necessary. Given their small scale they are not a significant traffic generator and do not require dedicated service bays.

The Current Proposal for special events at The Square involves unloading and loading to occur prior to and after special events from the Boulevard. Service vehicle access via the Boulevard will be denied during the operation of the special events. Access arrangements at The

Boulevarde will be managed by traffic marshals. Figure 3-3 presents the proposed servicing locations.

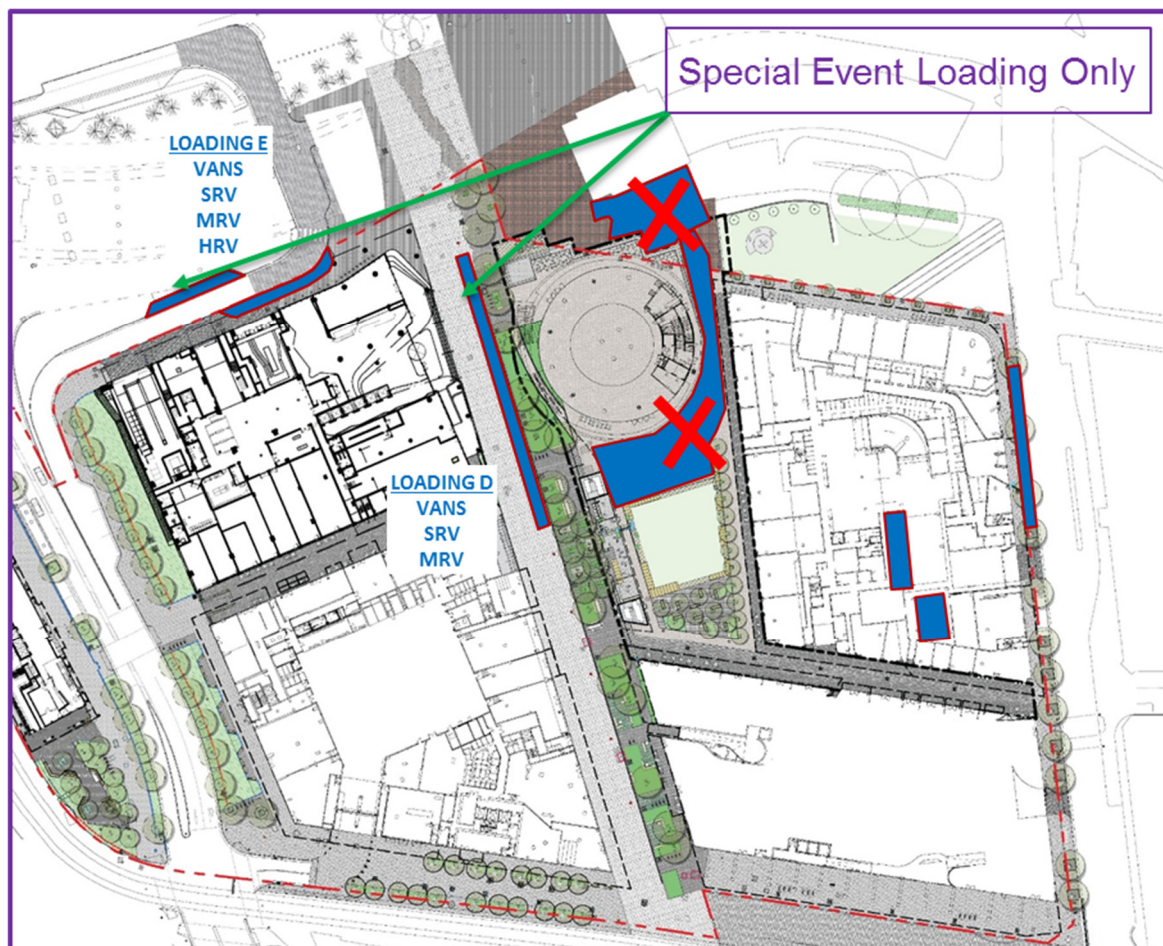


Figure 3-3: Location of Loading Areas for The Square (Current Proposal)

The principles applying to access for servicing special events at The Square are:

1. The Boulevarde provides access prior to and after special events only. It is used for set up and take down only.
2. Vehicles are stored elsewhere or are simply used to deliver and take away.
3. Traffic marshals on-site will manage activities on The Boulevarde.

3.2.1. Access to The Boulevarde

Service vehicles will enter The Boulevarde from the north and exit via the south onto Darling Drive. This route has been designed to accommodate emergency service vehicles and can also accommodate service vehicle access. The intersection with Darling Drive will be signalised. There is no conflict with the operations of Sydney Light Rail. The Boulevarde is 11 metres wide. This provides ample room for pedestrians to pass while the service vehicles are accessing the square.

3.2.2. Theatre Access Lane

Two indented parking bays are provided in Theatre Access Lane. Theatre Access Lane will provide for occasions that overflow demands occur. It can also accommodate larger vehicles if required for a particular special event. It is not proposed that the parking bays in Theatre Lane are dedicated for the exclusive use of the operation of The Square. Demands are expected to be low and in keeping with sharing of on-street parking with the wider community needs.

4. Updated Floor Areas and Estimates of Service Vehicle Demands

4.1. Updated Floor Areas

The floor areas have been recalculated to accord with the latest plans. The changes are presented below.

Table 4-1: Floor Areas

Land Use	Previous TTM Reports	Current Proposal
Ground Floor Market	31 tenancies	18 tenancies
Mezzanine Food and Beverage	486m ² GFA	500m ² GFA
Bar/Restaurant	555m ² internal GFA	476m ² internal GFA 842m ² total GFA

The number of tenancies in the ground floor market has been reduced.

The library is unchanged. The child care centre is still designed to accommodate 90 places.

The internal area for the bar/restaurant has been decreased.

4.2. Estimates of Service Vehicle Demands

The original assessment prepared by TTM Consulting provided a broad overview of service vehicle requirements based on compliance with various codes and surveys plus assumed delivery times. These estimates have been re-examined given the proposal to schedule and co-ordinate deliveries and waste removals for the North Plot and the North East Plot. Details of the analysis and resultant demands is presented in the following sections.

4.2.1. North Plot Service Vehicles (excluding waste)

North Plot service vehicles have been estimated using data from several sources. This includes:

1. Ground Floor Market deliveries are based on deliveries surveyed for similar sized market stalls at Erina Fair, Craigieburn Central, and Sunshine Plaza. The average daily deliveries were 1.22 vehicles per stall assuming all deliveries occurred during the five day work week.
2. The vehicle mix for deliveries to the ground floor markets is 68% vans or cars and 38 % small rigid vehicles. This is based on surveys undertaken at South Melbourne markets.
3. The mezzanine food and beverage and the restaurant deliveries are based on a typical 60 seat / 180 m2 restaurant receiving 2 rounds of deliveries per day (1 Van and 1 SRV per round). That is, 4 deliveries per day per 180 m2. This is conservatively high as the rooftop bar/restaurant will likely result in some consolidation of deliveries.
4. One delivery per day is assigned to the library. This is the daily book delivery and collection service.
5. Two deliveries per day are assigned to the child care centre (one laundry and one food).

The resultant demands by vehicle type are presented in Table 4-2.

Table 4-2: Service Bay Requirements for North Plot (excluding waste)

Land Use	Measure	Quantity	Vehicle Mix		
			Car/Van	SRV	MRV
Ground Floor Market	Stalls	18	68%	32%	0%
Mezzanine Food and Beverage	m ² GFA	500	50%	0%	50%
Library	Deliveries	1	100%	0%	0%
Child Care Centre	Deliveries	2	100%	0%	0%
Restaurant and Bar	m ² GFA	842	50%	0%	50%
Land Use	Deliveries per day		1 Hour Slots required per day		
			Car/Van	SRV	MRV
Ground Floor Market	1.22 / stall		15	7	0
Mezzanine Food and Beverage	2 per 180m ² GFA		3	0	3
Library	1/day		1	0	0
Child Care Centre	2/day		2	0	0
Restaurant and Bar	2 per 180m ² GFA		5	0	5
Total Slots Required per day			26	8	8

4.2.2. North Plot Waste Vehicles

Waste vehicles have been estimated for the North Plot based on volumes contained in the waste management plan¹. These volumes and the required daily vehicles are presented below.

Assuming separate collection of general, cardboard, commingled, and organic recycling results in up to 4 waste collections per day (see Table 4-3).

Table 4-3: North Plot Waste Vehicles

Waste Type	Rate	Volume per day (litres)	Vehicles per day
General Waste	1 truck per 10 m ³ (10,000 litres) compacted volume	3,887	1
Cardboard Recycling	1 truck per 10 m ³ (10,000 litres) compacted volume	1,926	1
Commingled Recycling	1 truck per 10 m ³ (10,000 litres) compacted volume	966	1
Organics Recycling	1 truck per 10 m ³ (10,000 litres) compacted volume	834	1
Total Slots Required per day for waste services			4

4.2.3. North East Plot Domestic Waste Vehicles

Vehicles collecting domestic waste have been estimated using rates from the City of Sydney Policy for Waste Minimisation in new developments. Average loads are 10,000 litres per vehicle. This results in a demand for 8 collections per week (see Table 4-4).

Table 4-4: North East Plot Domestic Waste Vehicles

Waste Type	Rate per week (litres/unit)*	Units	Volume / week (litres)	Waste vehicles / week
General Waste	80	577	46,160	5
Mixed Recycling	40		23,080	3
Total Slots Required per week for domestic waste services				8

*Source: City of Sydney Policy for Waste Minimisation in new developments

¹ Source: The North Plot & The Square Waste Management Plan" by Waste Audit and Consultancy Services, dated October 2015.

4.2.4. North East Plot Retail Waste Vehicles

Vehicles collecting waste associated with the retail component of the North East Plot have been estimated using rates from the NSW EPA “Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities” (2012). One general and one recycling waste vehicle is allowed for each day for each waste type. This is a worst case scenario.

Table 4-5: North East Plot Retail Waste Vehicles

Waste Type	Rate per day (litres/100m2)*	Area (GFA)	Volume / day (litres)	Waste Vehicles / day
General Waste	80	1,975.87	1,581	1
Mixed Recycling	70		1,383	1
Total Slots Required per day week for retail waste services				2

*Source: Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (2012)

4.3. Total Service and Waste Vehicles

As indicated earlier in this report it is proposed that deliveries and waste collection are managed by allocation of time slots. One hour times slots are proposed during the following periods:

- Vans and small rigid vehicles – 18 one hour slots between 4.00 am and 10.00 pm.
- 12 one hour slots for medium rigid and Waste Vehicles between 6.00 am and 6.00 pm.

The 4.00 am start for the small rigid vehicles is based on observations at Melbourne South Market. The 6.00 am start and finish for medium rigid and waste vehicles is keeping large vehicles movements to occurring during daylight hours.

Table 4-6 presents the resultant weekly demands and available one hour slots. It can be seen that the proposed supply satisfies the demands. There are ample spare slots for the small rigid vehicles which be used as a buffer should demand exceed those forecast. There is also spare capacity within the standard medium rigid vehicle space for removalists (20 hours per weekday). Removalists would also have the opportunity to use spare capacity over the weekend.

Table 4-6: Summary of one hour slot requirements

Table: Summary of One Hour Slot Requirements					
Location	Vehicle Type	Daily	5 Day Week	Available	Satisfied
North Plot	Van	26	130	180	Yes
	SRV	8	40	360	Yes
	MRV	8	40	60	Yes
	MRV Waste	4	20	-	-
North East Plot Retail	MRV Waste	2	10	-	-
North East Plot Resident	MRV Waste	-	8	-	-
All Plots (MRV Waste On	MRV Waste	-	38	60	Yes

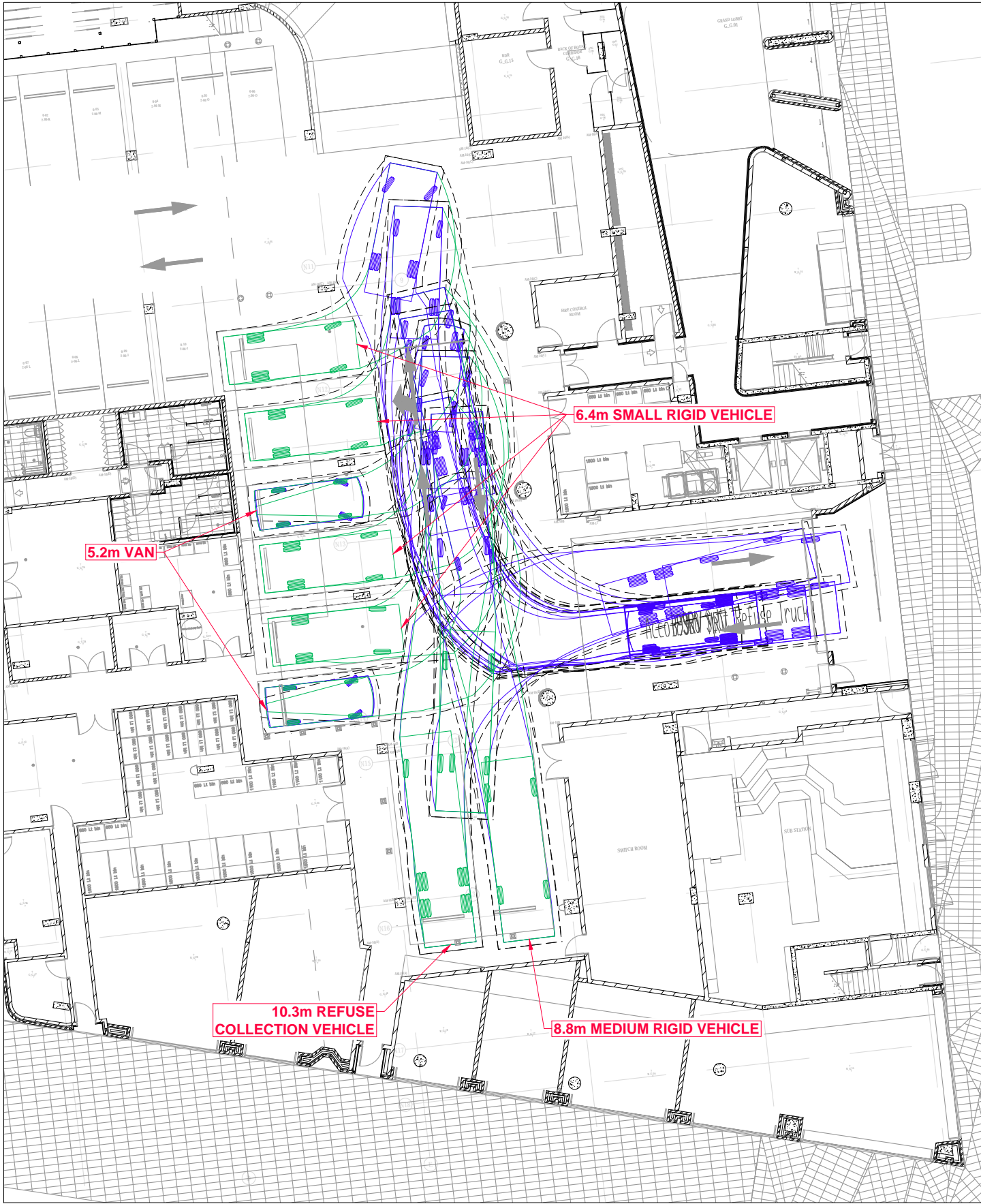
5. Summary of the Current Proposal

The current proposal replaces the servicing arrangements contained in the exhibited proposal. They essentially involve relocating servicing arrangements for the North Plot from off street to within the North-East Plot and managing of service vehicles associated with special events.

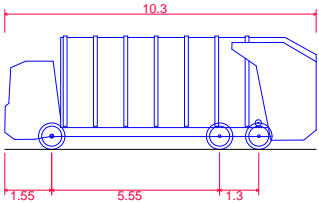
- Day to day servicing operations for the North Plot are accommodated within the building of the North-East Plot.
- A loading area and management plan will be prepared allocating time slots to deliveries.
- The layby off Harbour Street will be retained for use by the general public for servicing.
- Loading and servicing associated with special events will be accommodated via The Boulevard prior to and after such events. The Boulevard will be closed to traffic at other times.
- Traffic marshals will ensure safety is maximised during special events.
- Theatre Access Lane will provide relief if a particular special event generates a higher than expected demand.

The proposed allocation of one hour slots provides sufficient capacity to accommodate service and waste vehicles associated with both the North Plot and the North East Plot.

Appendix A Service Vehicle Swept Paths

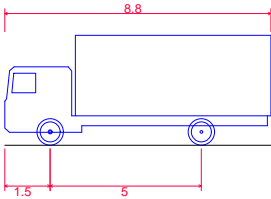


DESIGN VEHICLES



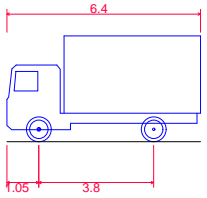
Acco 2350 Split Refuse Truck

Overall Length	10.300m
Overall Width	2.500m
Track Width	2.500m
Wall to Wall Turning Radius	11.300m



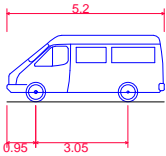
MRV - Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	10.000m



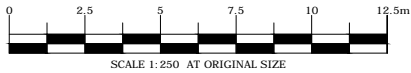
SRV - Small Rigid Vehicle

Overall Length	6.400m
Overall Width	2.330m
Overall Body Height	3.500m
Min Body Ground Clearance	0.398m
Track Width	2.330m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	7.100m



B99 Vehicle / VAN (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	2.200m
Min Body Ground Clearance	0.312m
Track Width	1.840m
Lock to Lock Time	4.00 sec
Curb to Curb Turning Radius	6.250m



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