

6 Silas Street, East Fremantle Proposed Supermarket Redevelopment

TRANSPORT IMPACT STATEMENT









Prepared for:

Brindle Group

October 2023

6 Silas Street, East Fremantle

Prepared for: Brindle Group
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Date: 26 October 2023

Project number: U23.139

Version control

Version No.	Date	Prepared by	Revision description	Issued to
U23.139.r01	21/10/23	Paul Ghantous	DRAFT	PDS
U23.139.r01a	26/10/23	Paul Ghantous	FINAL	PDS



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Contents

1	INTRODUCTION	5
2	PROPOSED DEVELOPMENT	7
3	VEHICLE ACCESS AND PARKING	8
	3.1 Vehicle access	8
	3.2 Car parking	9
	3.3 Estimated parking demand generation	10
4	PROVISION FOR SERVICE VEHICLES	11
5	HOURS OF OPERATION	12
6	DAILY TRAFFIC VOLUMES AND VEHICLE TYPES	13
	6.1 Traffic generation	13
	6.2 Impact on surrounding roads	
7	TRAFFIC MANAGEMENT ON THE FRONTAGE ROADS	15
8	PUBLIC TRANSPORT ACCESS	18
9	PEDESTRIAN ACCESS	19
10	BICYCLE ACCESS	20
	10.1 Bicycle network	20
	10.2 Bicycle parking	20
11	SITE SPECIFIC ISSUES	21
12	SAFETY ISSUES	22
13	CONCLUSION	24
ΔΡΙ	PENDICES	25

Figures

Figure 1: Subject site Figure 2: Existing site use Figure 3: Existing vehicle access Figure 4: Proposed access arrangements Figure 5: Main Roads WA road hierarchy plan Figure 6: Main Roads WA road speed zoning plan Figure 7: Road types and criteria for Western Australia Figure 8: Closest bus stops serving the proposed development Figure 9: Perth bicycle network plan Figure 10: 5-year crash history map (2018 to 2022)	6 9 16 16 17 18 20
Tables	
Table 1: RTA parking generation rates (seasonally adjusted)	13 13 18 19
Appendices	
Appendix A: Proposed site plans	

1 Introduction

This Transport Impact Statement has been prepared by Urbii on behalf of Brindle Group with regards to the proposed supermarket redevelopment, located at 6 Silas Street, East Fremantle.

The subject site is situated south of Canning Highway, extending between Silas Street and May Street, as shown in Figure 1. There is an existing laneway on the southern boundary of the site. The subject site presently accommodates the Foodworks Supermarket and associated car parking (Figure 2).

It is proposed to redevelop the site into an IGA Good Grocer supermarket. The proposed redevelopment will entail some demolition works and additional car parking will be provided onsite.

The key issues that will be addressed in this report include the traffic generation and distribution of the proposed development, access and egress movement patterns, car parking and access to the site for alternative modes of transport.











Figure 1: Subject site



Figure 2: Existing site use

2 Proposed development

The existing Foodworks supermarket building has an approximate Gross Floor Area (GFA) of 2,363m². There is an existing parking area on the eastern portion of the site, which is accessed via a crossover on May Street. The May Street crossover is shared with the adjoining property to the north. Additional car parking is currently provided on Silas Street, on the western boundary of the site. The waste collection and delivery area is currently on the eastern side of the building and is accessed via May Street.

The proposed IGA supermarket will have a smaller building footprint, at approximately 1,821m² GFA. The smaller building will create space for additional onsite car parking.

Waste and delivery vehicles will be accommodated in the southern laneway, with vehicles reversing in from Silas Street.

People walking and cycling will access the development from the external path network abutting the site.

The proposed site plans are included for reference in Appendix A.









3 Vehicle access and parking

3.1 Vehicle access

The proposed vehicular access arrangements have been reviewed for efficient and safe traffic circulation.

Vehicle access to the loading area and site car park on the eastern portion of the site is presently accommodated via a shared crossover on May Street (Figure 3). The laneway along the southern boundary of the site is presently accessed via the adjoining property to the south-east.



Figure 3: Existing vehicle access

As detailed in the proposed site plans and in Figure 4, some minor modification of the existing crossover on May Street is proposed, to match the new car park design. A new car park is proposed on the eastern portion of the site, with one-way clockwise traffic flow. Supporting signage and linemarking will be installed in the car park.

A new crossover is proposed on Silas Street, to facilitate reversing waste and delivery truck movements. The new crossover will entail the removal of three car parking bays on Silas Street.

Swept path analysis was undertaken for the proposed access and car park circulation, which is presented in Appendix B.



Figure 4: Proposed access arrangements

3.2 Car parking

The existing eastern portion of the site is used for staff car parking, with a capacity of around 9 vehicle spaces. Onsite parking is also provided on Silas Street (9 spaces), therefore there are currently 18 parking bays provided onsite. Parallel car parking is presently available on both sides of May Street and 90-degree parking is available on both sides of Silas Street. This car parking is presently used by customers of the existing Foodworks.

The proposed redevelopment will provide a total of 46 car parking spaces onsite, including three ACROD spaces. This includes 37spaces in the May Street car park and 9 spaces in the Silas Street car park.

The development will also require the removal of 3 spaces on Silas Street. The development will result in a reduction of floor space, and a net increase of around 25 parking spaces.







3.3 Estimated parking demand generation

Reference was made to the RTA NSW *Trip Generation and Parking Demand Surveys of Shopping Centre Analysis Report*, September 2011, to estimate the parking demand generated by the proposed development.

The relevant parking generation rates are detailed in Table 1. A peak parking demand of 67 bays is estimated for the proposed development. There are 46 parking spaces provided onsite, which means that around 21 parking spaces may be used on surrounding streets during peak parking demand times. There are more than 21 parking spaces provided on Silas Street and May Street near the site.

The site benefits from reciprocal parking easements in the precinct to assist with peak parking demand. Overall, the proposed redevelopment will reduce the need for on-street car parking for customers, which should benefit the local area.

Table 1: RTA parking generation rates (seasonally adjusted)

Range in Total Floor Area	Car	Parking Space	es per 100m² GL	per 100m² GLFA				
(GLFA - m ²)	Thursday	Friday	Saturday	Sunday				
0 - 20,000	3.2	3.2	3.7	2.8				
20,000 - 40,000	3.9	3.7	5.3	4.0				
40,000 - 60,000	4.4	4.3	4.9	3.7				
60,000 - 80,000	3.6	3.5	4.4	4.0				
Above 80,000	3.6	3.1	3.5	3.0				

4 Provision for service vehicles

The proposed development provides a consolidated delivery and waste collection area on the southern side of the building, which will be accessed via a laneway connecting to a new crossover on Silas Street.

Swept path analysis has been undertaken for the following design vehicles:

AS2890.2 – 8.8m Medium Rigid Vehicle (MRV).

Swept path analysis confirms satisfactory service vehicle movements and is presented in Appendix B. Service vehicles must reverse into the site from Silas Street and then exit the site in forward gear.

It is recommended that waste collection and delivery vehicles be scheduled outside the peak operating hours of the supermarket.









5 Hours of operation

The proposed supermarket will open 24 hours per day, 7 days per week.

6 Daily traffic volumes and vehicle types

6.1 Traffic generation

The traffic volume that will be generated by the proposed development has been estimated using trip generation rates derived with reference to the following sources:

• RTA NSW *Trip Generation and Parking Demand Surveys of Shopping Centre* Analysis Report, September 2011.

The trip generation rates adopted are detailed in Table 2. The peak hours for retail typically occur on weekday afternoons (WD Peak) and weekends at midday (WE Peak).

Table 2: Adopted trip rates for traffic generation

Land use	Trip rate source	Daily rate	WD Peak	WE Peak	IN	OUT
Shopping Centre (0 - 20,000m2)	RTA NSW	61 trips per 100m2	6.7 trips per 100m2	7.5 trips per 100m2	50%	50%

The estimated traffic generation of the proposed development is detailed in Table 3. The proposed development is estimated to generate a total of 1,111 vehicles per day (vpd), 122 vehicles per hour (vph) and 138 vph in the weekday PM and weekend midday peak hours respectively.

These trips include both inbound and outbound vehicle movements. It is anticipated that most of the vehicle types would be small passenger cars and compact SUVs.

As the floor area of the supermarket will decrease, a net decrease in traffic is expected, as detailed in Table 3.

Table 3: Daily and peak hour traffic generation

Site	GLFA Dail	Daily	WD Book	WE Peak	WD Peak		WE Peak	
Site	(m2)	Trips	WD Feak		IN	OUT	IN	OUT
Existing	2363	1441	158	178	79	79	89	89
Proposed	1821	1111	122	138	61	61	69	69
Net Change	-542	-330	-36	-40	-18	-18	-20	-20









6.2 Impact on surrounding roads

The WAPC Transport Impact Assessment Guidelines for Developments (2016) provides the following guidance on the assessment of traffic impacts:

"As a general guide, an increase in traffic of less than 10 percent of capacity would not normally be likely to have a material impact on any particular section of road but increases over 10 percent may. All sections of road with an increase greater than 10 percent of capacity should therefore be included in the analysis. For ease of assessment, an increase of 100 vehicles per hour for any lane can be considered as equating to around 10 percent of capacity. Therefore, any section of road where development traffic would increase flows by more than 100 vehicles per hour for any lane should be included in the analysis."

The proposed development will not increase traffic flows on any roads adjacent to the site by the quoted WAPC threshold of +100vph to warrant further analysis. Therefore, the impact on the surrounding road network is minor.

7 Traffic management on the frontage roads

Information from online mapping services, Main Roads WA, Local Government, and/or site visits was collected to assess the existing traffic management on frontage roads.

7.1.1 Silas Street

Silas Street near the subject site is an approximately 6m wide, two-lane undivided road. Formal 90-degree car parking is provided on both sides of the road. Paths for walking are also provided on both sides of the road.

Silas Street is classified as an *Access* road in the Main Roads WA road hierarchy (Figure 5) and operates under the default speed limit of 50km/h (Figure 6). Access roads are the responsibility of Local Government and are typically for the provision of vehicle access to abutting properties (Figure 7).

No traffic data was available from the Town of East Fremantle at the time this report was prepared.

7.1.2 May Street

May Street near the subject site is an approximately 10.5m wide, two-lane undivided road. Onstreet car parking is permitted on both sides of the road. Paths for walking are also provided on both sides of the road.

May Street is classified as an *Access* road in the Main Roads WA road hierarchy (Figure 5) and operates under the default speed limit of 50km/h (Figure 6). Access roads are the responsibility of Local Government and are typically for the provision of vehicle access to abutting properties (Figure 7).

No traffic data was available from the Town of East Fremantle at the time this report was prepared.









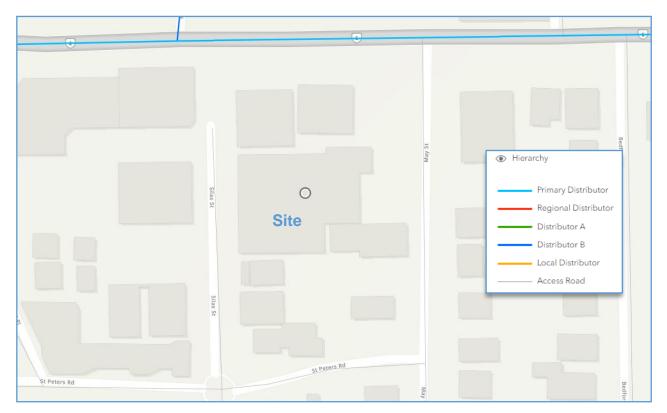


Figure 5: Main Roads WA road hierarchy plan

Source: Main Roads WA Road Information Mapping System (RIM)

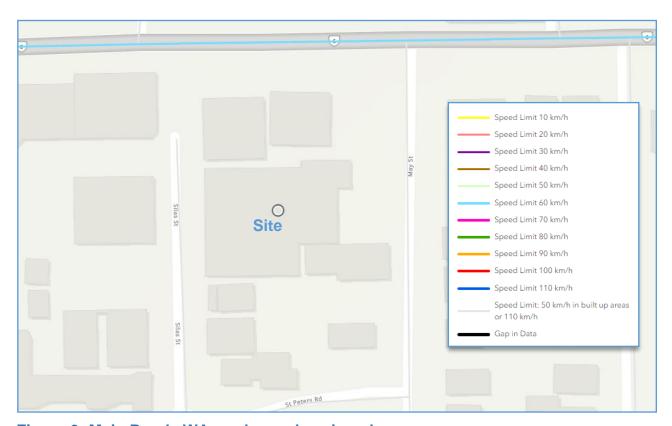


Figure 6: Main Roads WA road speed zoning plan

Source: Main Roads WA Road Information Mapping System (RIM)

ROAD HIERARCHY FOR WESTERN AUSTRALIA

		ROAD 1	TYPES AND CRITERIA (see	Note 1)		
CRITERIA	PRIMARY DISTRIBUTOR (PD) (see Note 2)	DISTRICT DISTRIBUTOR A (DA)	DISTRICT DISTRIBUTOR B (DB)	REGIONAL DISTRIBUTOR (RD)	LOCAL DISTRIBUTOR (LD)	ACCESS ROAD (A)
Primary Criteria						
Location (see Note 3)	All of WA incl. BUA	Only Built Up Area.	Only Built Up Area.	Only Non Built Up Area. (see Note 4)	All of WA incl. BUA	All of WA incl. BUA
Responsibility	Main Roads Western Australia.	Local Government.	Local Government.	Local Government.	Local Government.	Local Government.
3. Degree of Connectivity	High. Connects to other Primary and Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	High. Connects to Primary and/or other Distributor roads.	Medium. Minor Network Role Connects to Distributors and Access Roads.	Low. Provides mainly for property access.
Predominant Purpose	Movement of inter regional and/or cross town/city traffic, e.g. freeways, highways and main roads.	High capacity traffic movements between industrial, commercial and residential areas.	Reduced capacity but high traffic volumes travelling between industrial, commercial and residential areas.	Roads linking significant destinations and designed for efficient movement of people and goods between and within regions.	Movement of traffic within local areas and connect access roads to higher order Distributors.	Provision of vehicle access to abutting properties
Secondary Criteria						
Indicative Traffic Volume (AADT)	In accordance with Classification Assessment Guidelines.	Above 8 000 vpd	Above 6 000 vpd.	Greater than 100 vpd	Built Up Area - Maximum desirable volume 6 000 vpd. Non Built Up Area – up to 100 vpd.	Built Up Area - Maximum desirable volume 3 000 vpd. Non Built Up Area - up to 75 vpd.
Recommended Operating Speed	60 – 110 km/h (depending on design characteristics).	60 – 80 km/h.	60 – 70 km/h.	50 – 110 km/h (depending on design characteristics).	Built Up Area 50 - 60 km/h (desired speed) Non Built Up Area 60 - 110 km/h (depending on design characteristics).	Built Up Area 50 km/h (desired speed). Non Built Up Area 50 – 110 km/h (depending on design characteristics).
7. Heavy Vehicles permitted	Yes.	Yes.	Yes.	Yes.	Yes, but preferably only to service properties.	Only to service properties.
8. Intersection treatments	Controlled with appropriate measures e.g. high speed traffic management, signing, line marking, grade separation.	Controlled with appropriate measures e.g. traffic signals.	Controlled with appropriate Local Area Traffic Management.	Controlled with measures such as signing and line marking of intersections.	Controlled with minor Local Area Traffic Management or measures such as signing.	Self controlling with minor measures.
9. Frontage Access	None on Controlled Access Roads. On other routes, preferably none, but limited access is acceptable to service individual properties.	Prefer not to have residential access. Limited commercial access, generally via service roads.	Residential and commercial access due to its historic status Prefer to limit when and where possible.	Prefer not to have property access. Limited commercial access, generally via lesser roads.	Yes, for property and commercial access due to its historic status. Prefer to limit whenever possible. Side entry is preferred.	Yes.
10. Pedestrians	Preferably none. Crossing should be controlled where possible.	With positive measures for control and safety e.g. pedestrian signals.	With appropriate measures for control and safety e.g. median/islands refuges.	Measures for control and safety such as careful siteing of school bus stops and rest areas.	Yes, with minor safety measures where necessary.	Yes.
11. Buses	Yes.	Yes.	Yes.	Yes.	Yes.	If necessary (see Note 5)
12. On-Road Parking	No (emergency parking on shoulders only).	Generally no. Clearways where necessary.	Not preferred. Clearways where necessary.	No – emergency parking on shoulders – encourage parking in off road rest areas where possible.	Built Up Area – yes, where sufficient width and sight distance allow safe passing. Non Built Up Area – no. Emergency parking on shoulders.	Yes, where sufficient width and sight distance allow safe passing.
13. Signs & Linemarking	Centrelines, speed signs, guide and service signs to highway standard.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs, guide and service signs.	Centrelines, speed signs and guide signs.	Speed and guide signs.	Urban areas – generally not applicable. Rural areas - Guide signs.
14. Rest Areas/Parking Bays	In accordance with Main Roads' Roadside Stopping Places Policy.	Not Applicable.	Not Applicable.	Parking Bays/Rest Areas. Desired at 60km spacing.	Not Applicable.	Not Applicable.

Figure 7: Road types and criteria for Western Australia

Source: Main Roads Western Australia D10#10992









8 Public transport access

Information was collected from Transperth and the Public Transport Authority to assess the existing public transport access to and from the site.

The subject site has access to the following nearby bus services, detailed in Table 4:

Table 4: Existing bus services

Service	Route				
111	Fremantle Stn - East Perth via Canning Hwy & Kwinana Fwy				
148	Fremantle Stn – Como via Bicton & Attadale				
158	Fremantle Stn – Perth via Bicton & Attadale				
500	Bull Creek Stn - Booragoon Bus Stn via Brentwood				
910	Perth - Fremantle Stn via Canning Hwy (High Frequency)				

Bus services provide a viable alternative mode of transport for staff and customers of the proposed development. Bus route 910 operates as a High Frequency Service. Bus stops are accessible on Canning Highway near the subject site (Figure 8).

Bus services provide excellent coverage and connectivity to the rail network.

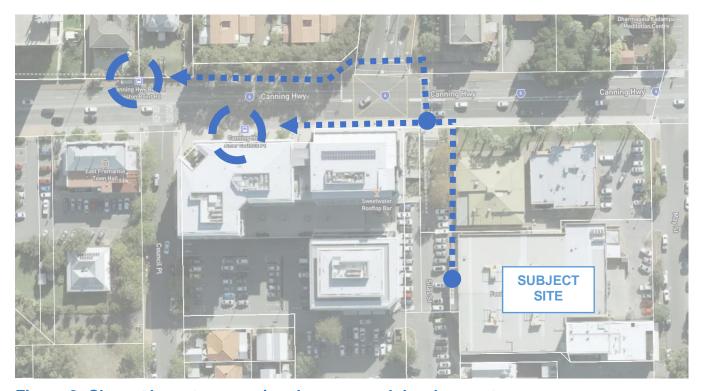


Figure 8: Closest bus stops serving the proposed development

9 Pedestrian access

Information from online mapping services, Main Roads WA, Local Government, and site visits was collected to assess the pedestrian access for the proposed development.

9.1.1 Pedestrian facilities and level of service

Footpaths are provided along both sides of Silas Street and May Street near the site. Pedestrian crossing facilities including kerb ramps are provided at nearby intersections. There is a signalised crossing on Canning Highway at the intersection with Preston Point Road.

The WAPC Transport Impact Assessment Guidelines for Developments (2016) provide warrants for installing pedestrian priority crossing facilities. This is based on the volume of traffic as the key factor determining if pedestrians can safely cross a road. The guidelines recommend pedestrian priority crossing facilities be considered once the peak hour traffic exceeds the volumes detailed in Table 5.

The traffic volumes in this table are based on a maximum delay of 45 seconds for pedestrians, equivalent to Level of Service E.

Traffic volumes on adjacent roads are within the acceptable crossing thresholds.

Table 5: Traffic volume thresholds for pedestrian crossings

Road cross-section	Maximum traffic volumes providing safe pedestrian gap
2-lane undivided	1,100 vehicles per hour
2-lane divided (with refuge)	2,800 vehicles per hour
4-lane undivided*	700 vehicles per hour
4-lane divided (with refuge)*	1,600 vehicles per hour









10 Bicycle access

Information from online mapping services, Department of Transport, Local Government, and/or site visits was collected to assess bicycle access for the proposed development.

10.1 Bicycle network

The Department of Transport Bicycle Network Map (see Figure 9) shows the existing cycling connectivity to the subject site. There is limited cycling specific infrastructure in the locality. Less confident people can legally cycle on footpaths in WA, to access the broader cycling network.

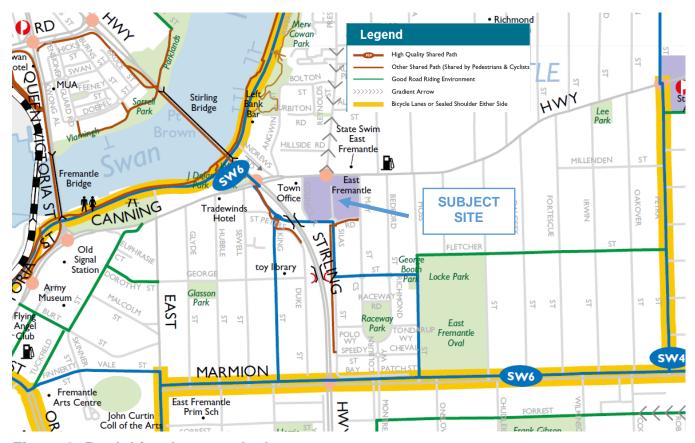


Figure 9: Perth bicycle network plan

10.2 Bicycle parking

It is recommended that 3 x bicycle racks be installed on the paved verge near the main building entry. This will provide parking for six bicycles.

11 Site specific issues

No additional site-specific issues were identified within the scope of this assessment.









12 Safety issues

The Main Roads WA crash mapping facility was used to check the past 5 years of crash records near the site. As depicted in Figure 10, there were six crashes in the study area. The crash data is summarised in Table 6.



Figure 10: 5-year crash history map (2018 to 2022)

Source: Main Roads WA crash map

Table 6: 5-year crash history summary

Severity	No.	%
Fatal	0	0
Hospital	0	0
Medical	1	16.67
PDO Major	4	66.67
PDO Minor	1	16.67
Year	No.	%
2018	2	33.33
2019	1	16.67
2020	3	50.00
Nature	No.	%
Head On	0	0
Hit Animal	0	0
Hit Object	1	16.67
Hit Pedestrian	0	0
Non Collision	0	0
Not Known	0	0
Other / Unknown	2	33.33
Rear End	0	0
Right Angle	1	16.67
Right Turn Thru	0	0
Sideswipe Opposite Dirn	0	0
Sideswipe Same Dirn	2	33.33

Light	No.	%
Dark - Street Lights Not Provided	0	0
Dark - Street Lights Off	0	0
Dark - Street Lights On	2	33.33
Dawn Or Dusk	0	0
Daylight	4	66.67
Not Known	0	0
Conditions	No.	%
Dry	5	83.33
Not Known	0	0
Wet	1	16.67
Alignment	No.	%
Curve	1	16.67
Not Known	0	0
Straight	5	83.33
Total		6
		0
Total		

Period: 2018 to 2022









13 Conclusion

This Transport Impact Statement has been prepared by Urbii on behalf of Brindle Group with regards to the proposed supermarket redevelopment, located at 6 Silas Street, East Fremantle.

The subject site is situated south of Canning Highway, extending between Silas Street and May Street. There is an existing laneway on the southern boundary of the site. The subject site presently accommodates the Foodworks Supermarket and associated car parking.

It is proposed to redevelop the site into an IGA Good Grocer supermarket. The proposed redevelopment will entail some demolition works and additional car parking will be provided onsite.

The site features good connectivity with the existing road and pedestrian network. There is good public transport coverage through nearby bus and train services.

The traffic analysis undertaken in this report shows that there may be a net reduction in traffic due to a reduced floor area and as such would have insignificant impact on the surrounding road network.

It is concluded that the findings of this Transport Impact Statement are supportive of the proposed development.

Appendices

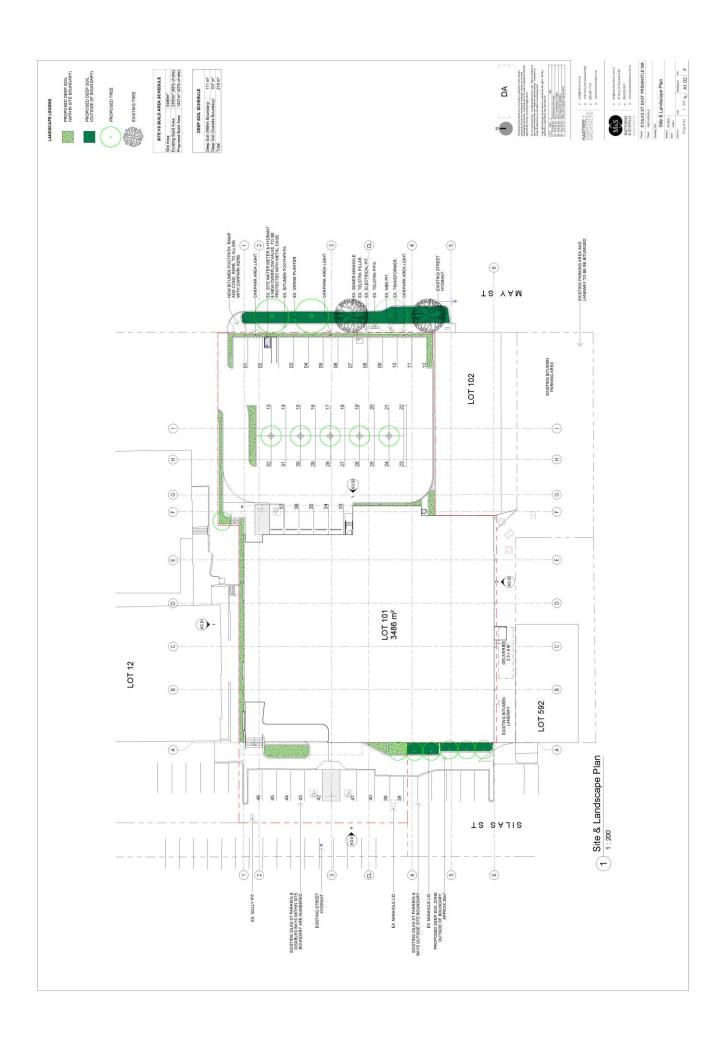
Appendix A: Proposed site plans













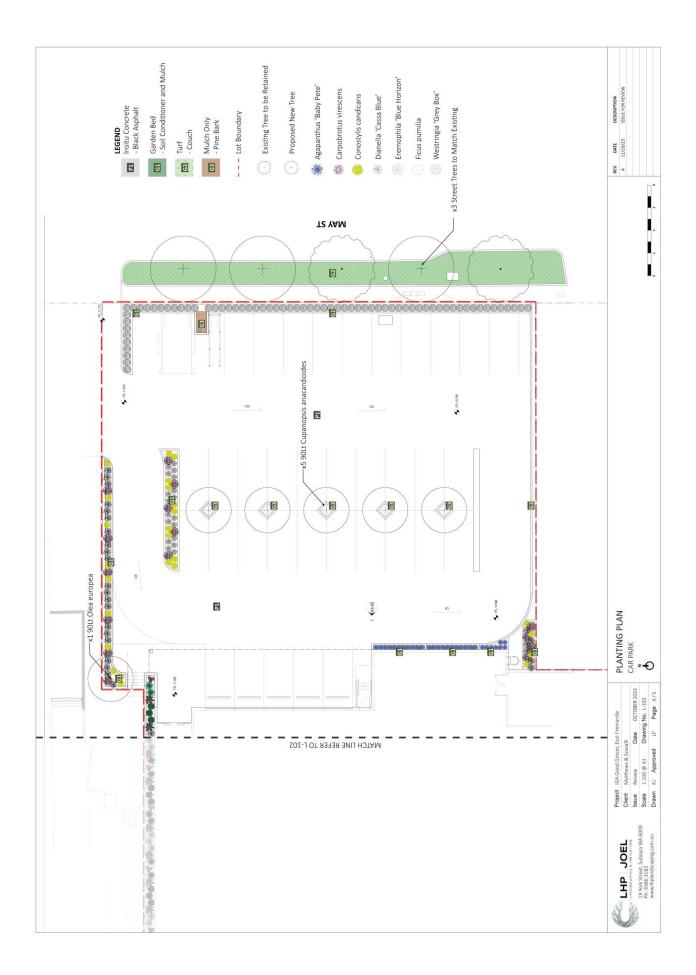










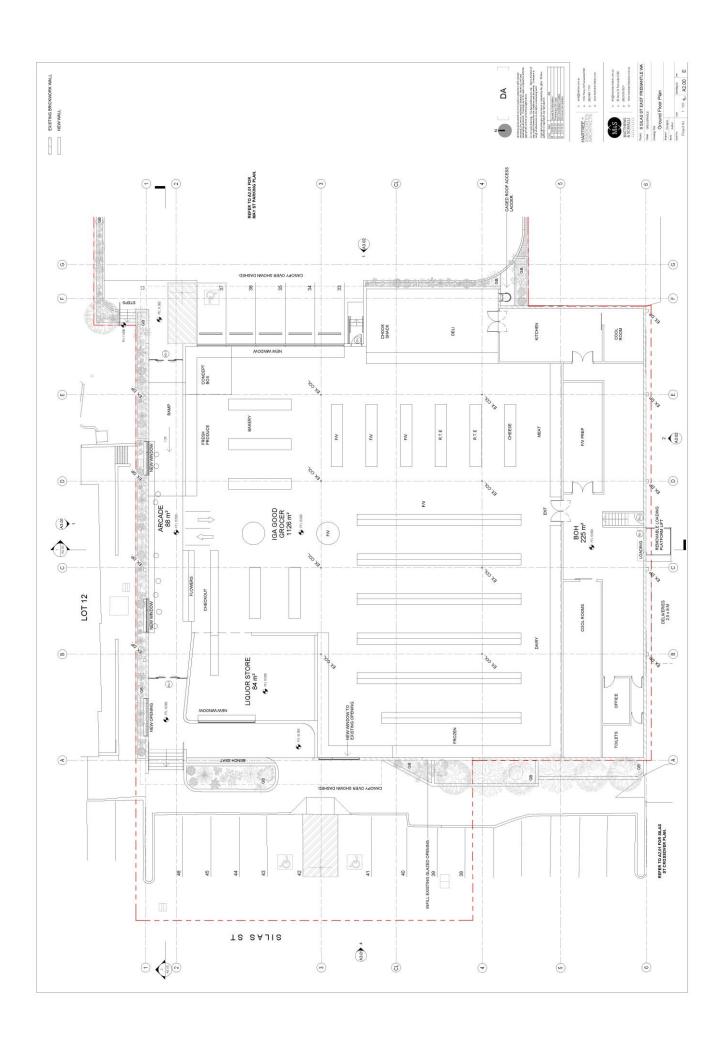


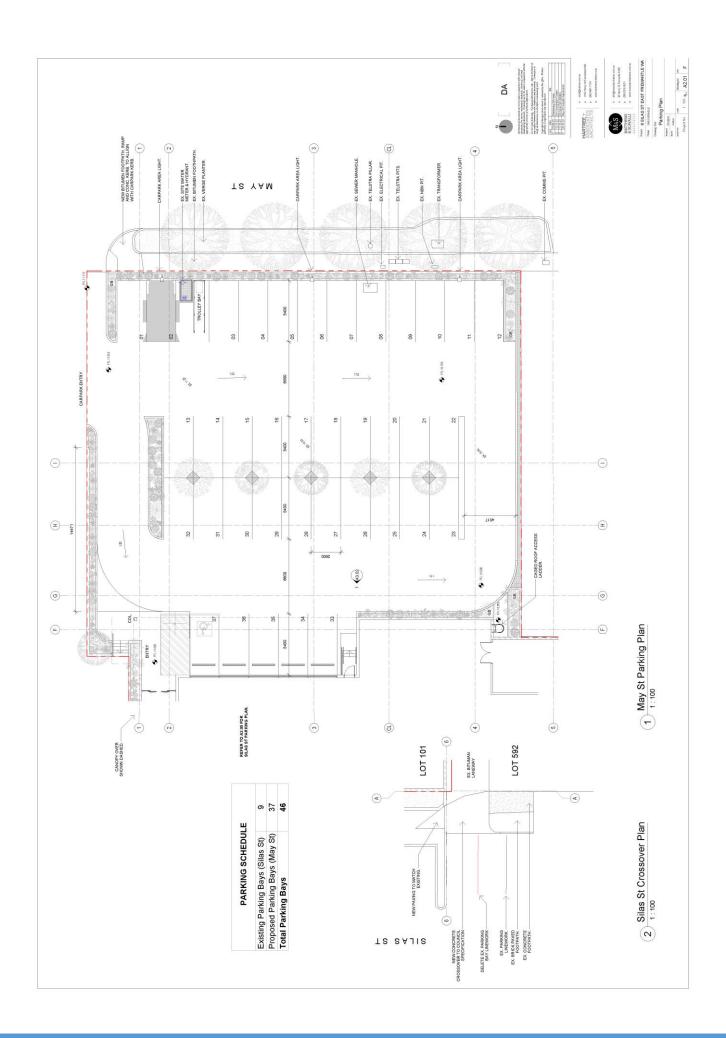










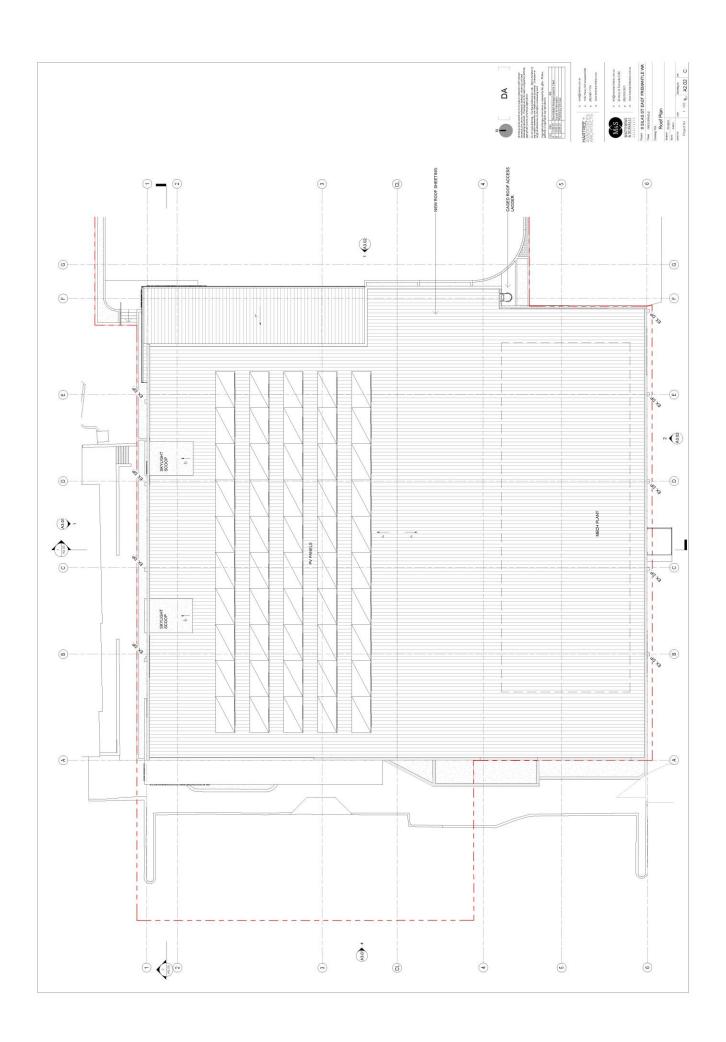












Appendix B: Swept path diagrams

Swept path diagrams are included in this section of the report. Different coloured lines are employed to represent the various envelopes of the vehicle swept path, as described below:

Cyan represents the wheel path of the vehicle

Green represents the vehicle body envelope

Blue represents a buffer 300mm/500mm line, offset from the vehicle swept path

The swept path diagrams are also provided separately in high-quality, A3 PDF format.









