

APPLICATION ON NOTIFICATION – CATEGORY 2

Applicant:	P C Infrastructure Pty Ltd C/- Peregrine Corporation
Development Number:	080/E021/16V1
Nature of Development:	Demolition of existing service station complex and construction of a new service station complex with automatic car washes and a drive through facility.
Development Type:	Merit
Subject Land:	1 Main Road, Belair.
Development Plan:	Mitcham Council Development Plan: Consolidated
Zone / Policy Area:	Neighbourhood Centre Zone
Contact Officer:	Malcolm Govett
Phone Number:	7109 7094
Consultation Start Date:	21 November 2018
Consultation Close Date:	5 December 2018
<p>During the notification period, hard copies of the application documentation can be viewed at the Department of Planning, Transport and Infrastructure, Level 5, 50 Flinders St, Adelaide, during normal business hours. Application documentation may also be viewed during normal business hours at the local Council office (if identified on the public notice).</p>	

Written representations must be received by the close date (indicated above) and can either be posted, hand-delivered or emailed to the State Commission Assessment Panel.

Any representations received after the close date will not be considered.

Postal Address:

The Secretary
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Street Address:

Development Division
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
ADELAIDE

Email Address: scapreps@sa.gov.au

Fax Number: (08) 8303 0753

**South Australian
DEVELOPMENT ACT, 1993
REPRESENTATION ON APPLICATION – CATEGORY 2**

Applicant: P C Infrastructure Pty Ltd C/- Peregrine Corporation.
Development Number: 080/E021/16V1
Nature of Development: Demolition of existing service station complex and construction of a new service station complex with automatic car washes and a drive through facility.
Development Type: Merit
Zone / Policy Area: Neighbourhood Centre Zone
Subject Land: 1 Main Road, Belair.
Contact Officer: Malcolm Govett
Phone Number: 7109 7094
Close Date: 5 December 2018

My Name: _____ My phone number: _____

Primary method(s) of contact: Email: _____
Postal Address: _____ Postcode: _____

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:
(please tick one)

- owner of local property
- occupier of local property
- a representative of a company/other organisation affected by the proposal
- a private citizen

The address of the property affected is: _____
Postcode _____

My interests are:
(please tick one)

- I support the development
- I support the development with some concerns
- I oppose the development

The specific aspects of the application to which I make comment on are: _____

I: wish to be heard in support of my submission
(please tick one) do not wish to be heard in support of my submission
(Please tick one)

By: appearing personally
(please tick one) being represented by the following person
(Please tick one)

Signature: _____
Date: _____

DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: STATE COMMISSION ASSESSMENT PANEL

APPLICANT: PC INFRASTRUCTURE PTY LTD

Postal Address: PO BOX 322
KENSINGTON PARK SA 5068

Owner: OTR 113 PTY LTD AND OTR 114 PTY LTD

Postal Address: PO BOX 322
KENSINGTON PARK SA 5068

BUILDER: TO BE ADVISED

Postal Address: _____

_____ Licence No: _____

CONTACT PERSON FOR FURTHER INFORMATION

Name: ANDREW CASPAR a.caspar@peregrine.com.au

Telephone: 8331 6856 [work] _____ [Ah]

Fax: _____ [work] _____ [Ah]

EXISTING USE: OTR INTEGRATED SERVICE STATION

FOR OFFICE USE

Development No: _____

Previous Development No: _____

Assessment No: _____

- Complying
- Non Complying
- Notification Cat 2
- Notification Cat 3
- Referrals/Concurrences
- DA Commission

Application forwarded to DA

Commission/Council on

/ /

Decision: _____

Type: _____

Date: / /

	Decision required	Fees	Receipt No	Date
Planning:	_____	_____	_____	_____
Building:	_____	_____	_____	_____
Land Division:	_____	_____	_____	_____
Additional:	_____	_____	_____	_____
Development Approval				

DESCRIPTION OF PROPOSED DEVELOPMENT: VARIATION TO EXISTING DEVELOPMENT PLAN CONSENT FOR OTR INTEGRATED SERVICE STATION

LOCATION OF PROPOSED DEVELOPMENT: _____

House No: _____ Lot No: _____ Street: 1 MAIN ROAD Town/Suburb: BELAIR 5052

Section No [full/part] A8 FP151163 Hundred: _____ Volume: 5705 Folio: 90

Section No [full/part] A7 FP151162 Hundred: _____ Volume: 5715 Folio: 788

LAND DIVISION:

Site Area [m²] _____ Reserve Area [m²] _____ No of existing allotments _____

Number of additional allotments [excluding road and reserve]: _____ Lease: YES NO

BUILDING RULES CLASSIFICATION SOUGHT: _____ Present classification: _____

If Class 5,6,78 or 9 classification is sought, state the proposed number of employees: Male: _____ Female: _____

If Class 9a classification is sought, state the number o persons for whom accommodation is provided: _____

If Class 9b classification is sought, state the proposed number of occupants of the various spaces at the premises: _____

DOES EITHER SCHEDULE 21 OR 22 OF THE DEVELOPMENT REGULATIONS 2008 APPLY? YES NO

HAS THE CONSTRUCTION INDUSTRY TRAINING FUND ACT 2008 LEVY BEEN PAID? YES NO

DEVELOPMENT COST [do not include any fit-out costs]: \$ 2,100,000

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the Development Regulations 2008.

SIGNATURE:  _____

Dated: 12 / 10 / 2018

DEVELOPMENT REGULATIONS 1993
Form of Declaration
(Schedule 5 clause 2A)

To: STATE COMMISSION ASSESSMENT PANEL

From: PC INFRASTRUCTURE PTY LTD

Date of Application: 12 / 10 / 2018

Location of Proposed Development:

House No: Lot No: Street: 1 MAIN ROAD Town/Suburb: BELAIR 5052

Section No (full/part): Hundred: A8 FP 151163
A7 FP 151162


Volume: 5705 Folio: 90
5715 788

Nature of Proposed Development:

VARIATION TO EXISTING DEVELOPMENT PLAN CONSENT FOR OTR INTEGRATED SERVICE STATION

I ANDREW CASPAR being ~~the applicant/~~
a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the *Electricity Act 1996*. I make this declaration under clause 2A(1) of Schedule 5 of the *Development Regulations 1993*.

Date: 12 / 10 / 2018

Signed: 

Note 1

This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 4(1) of the *Development Act 1993*), other than where the development is limited to –

- a) an internal alteration of a building; or
- b) an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2

The requirements of section 86 of the *Electricity Act 1996* do not apply in relation to:

- a) a fence that is less than 2.0 m in height; or
- b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3

Section 86 of the *Electricity Act 1996* refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4

The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually also comply.

Particular care needs to be taken where high voltage powerlines exist; where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5

Information brochures 'Powerline Clearance Declaration Guide' and 'Building Safely Near Powerlines' have been prepared by the Technical Regulator to assist applicants and other interested persons. Copies of these brochures are available from council and the Office of the Technical Regulator. The brochures and other relevant information can also be found at www.technicalregulator.sa.gov.au

Note 6

In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

PLN/06/0024

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5705 Folio 90

Parent Title(s) CT 3100/14
Creating Dealing(s) CONVERTED TITLE
Title Issued 29/10/1999 **Edition** 2 **Edition Issued** 28/08/2014

Estate Type

FEE SIMPLE

Registered Proprietor

OTR 113 PTY. LTD. (ACN: 163 644 611)
OF 270 THE PARADE KENSINGTON PARK SA 5068

Description of Land

ALLOTMENT 8 FILED PLAN 151163
IN THE AREA NAMED BELAIR
HUNDRED OF ADELAIDE

Easements

NIL

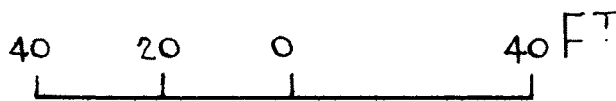
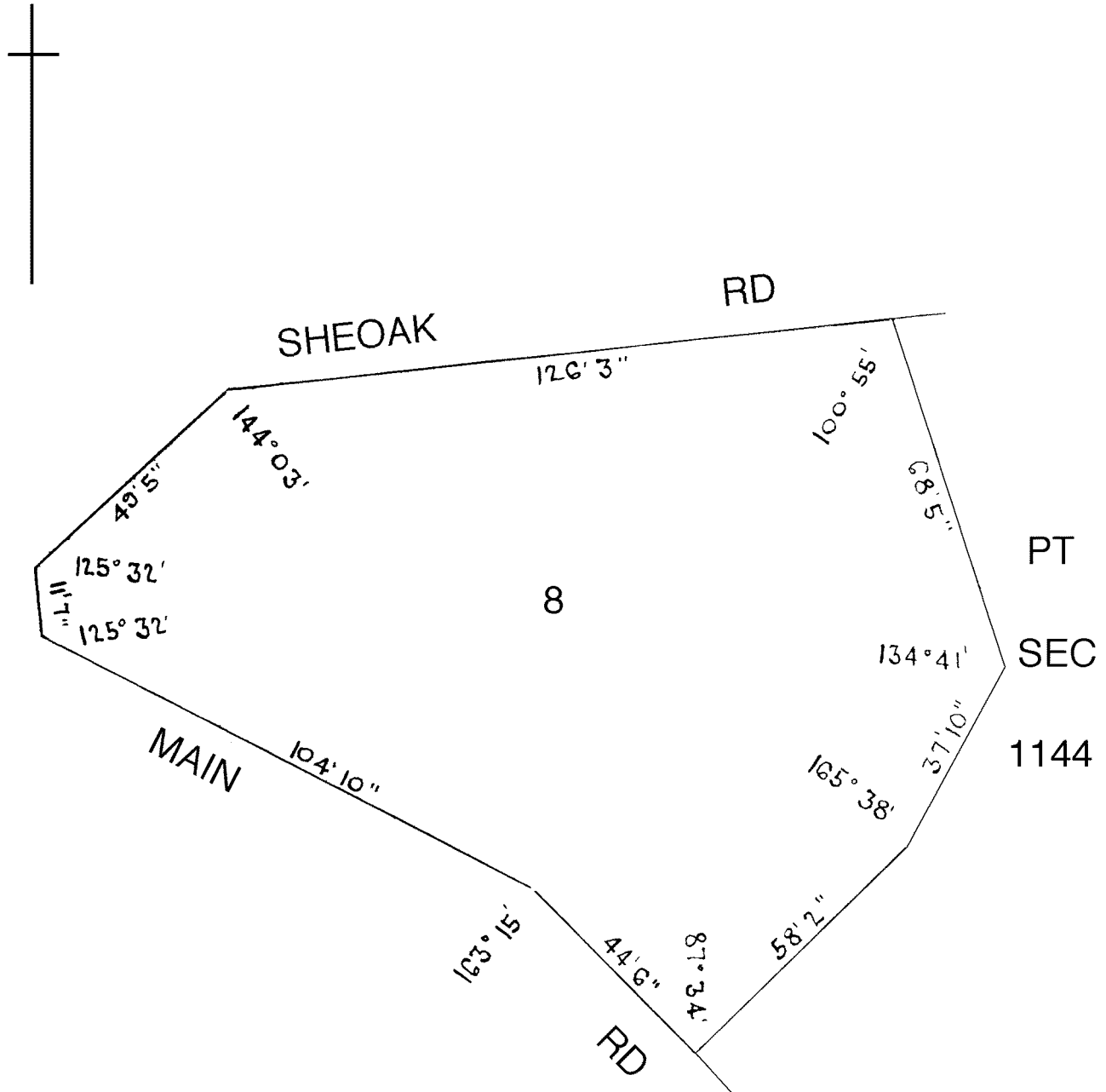
Schedule of Dealings

Dealing Number	Description
12565110	MORTGAGE TO WESTPAC BANKING CORPORATION (ACN: 007 457 141)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 3100/14



**DISTANCES ARE IN FEET AND INCHES
 FOR METRIC CONVERSION**
 1 FOOT = 0.3048 METRES
 1 INCH = 0.0254 METRES

NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 5715 Folio 788

Parent Title(s) CT 3100/15
Creating Dealing(s) CONVERTED TITLE
Title Issued 02/12/1999 **Edition** 3 **Edition Issued** 09/08/2016

Estate Type

FEE SIMPLE

Registered Proprietor

OTR 114 PTY. LTD. (ACN: 163 644 620)
OF 270 THE PARADE KENSINGTON PARK SA 5068

Description of Land

ALLOTMENT 7 FILED PLAN 151162
IN THE AREA NAMED BELAIR
HUNDRED OF ADELAIDE

Easements

NIL

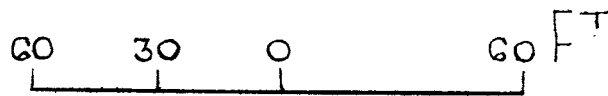
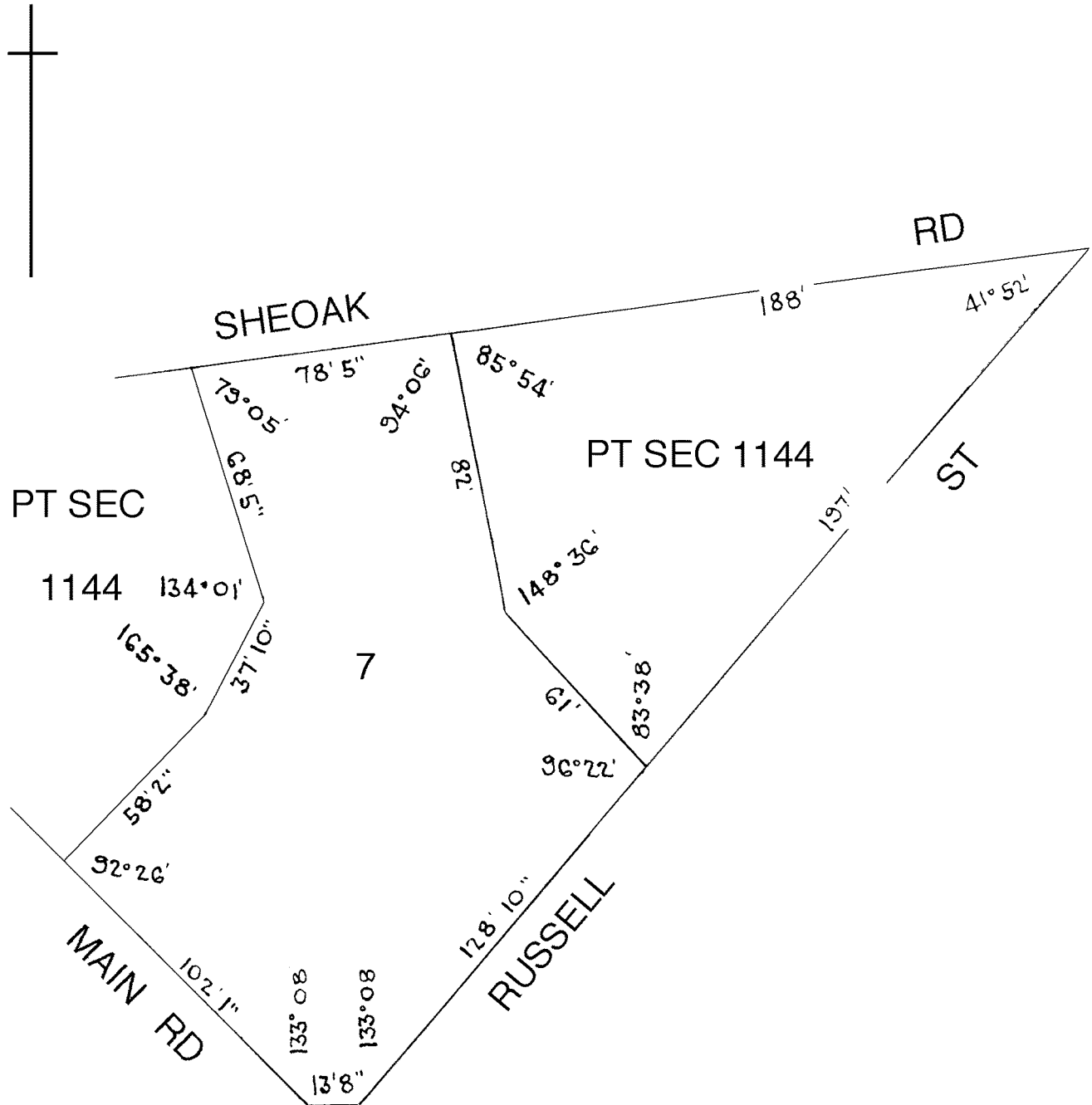
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 1 FOOT = 0.3048 METRES
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NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION



12 October 2018

Mr. Malcolm Govett
Planning Officer
Department of Planning, Transport and Infrastructure

malcolm.govett@sa.gov.au

Dear Malcolm

**Application to vary and extend Development Plan Consent 080/E021/16
Integrated service station complex, 1 Main Road, Belair 5052**

I refer to the Development Plan Consent for the above development, issued by the State Commission Assessment Panel on 7 November 2017.

Request for variation and extension

Pursuant to section 39(6) of the *Development Act 1993*, Peregrine Corporation hereby applies on behalf of PC Infrastructure Pty Ltd for variation of the Development Plan Consent.

We also hereby apply for an extension of the expiry of the Development Plan Consent, so that the Development Plan Consent expires 12 months from the date of Notification in respect of this variation application.

Nature of variation

The variation we seek is to amend the Development Plan Consent in the manner shown by the marked-up text on the pages accompanying this letter.

If approved, the variation will result in a re-arrangement of the built form elements currently approved for the site. The control building will be re-oriented so that its long axis is generally aligned with the southern site boundary, with its main boundary better aligned and more visible to pedestrians and drivers approaching from Sheoak Road and Main Road. The fuel canopy, closer to the site's Main Road frontage, will similarly be better positioned for access and egress by motorists. Retention of the existing site access from and (with a reduction in width) egress to Sheoak Road will give customers who are entering or leaving the site to the north with a more direct and convenient pathway.

For reasons set out in the following parts of this letter, there will be no adverse amenity or other impacts as a result of the proposed variation.

Supporting material

The following supporting material accompanies this letter:

- The current text of relevant conditions to the Development Plan Consent, marked up to show the changes we are seeking.
- The updated plans and elevations referred to in Condition 1 of the Development Plan Consent (as we seek to vary it).

- Completed application form.
- Completed electricity declaration.
- Certificate of Title searches for the subject site.
- Site Traffic Compliance Statement (TCS) prepared by GTA Consultants in respect of the proposed development (as we seek to vary it), as well as the Generic Parking and Traffic Updated Traffic Management Report referred to in the TCS.
- Environmental Noise Assessment prepared by Sonus in respect of the proposed development (as we seek to vary it).

We will provide the updated Landscape Plan referred to in Condition 1 of the Development Plan Consent (as we seek to vary it) as soon as possible.

No change to the conditions of the Development Plan Consent is sought apart from these specific changes.

Impact of proposed variation

The proposed variation will substantially improve the function, accessibility and appearance of the proposed development in a number of respects, while not resulting in any increase in the potential amenity impacts on the locality. In particular:

- The Site Traffic Compliance Statement demonstrates that should the variation be approved, the development will meet relevant traffic, access and parking requirements, including:
 - the provision of adequate parking for an OTR with a drive-through facility in accordance with the Generic Parking and Traffic Updated Traffic Management Report prepared by GTA to determine car parking requirements in respect of OTR facilities;
 - compliance of the proposed car parking layout and access points with applicable Australian Standards;
 - provision of required queuing space to the fuel dispensers in accordance with the standards set out in the Generic Parking and Traffic Updated Traffic Management Report;
 - provision of swept paths for relevant classes of fuel delivery, general delivery and waste collection vehicles which will use the facility, and for light vehicle access to the drive-through and the car wash;
 - that there will be no significant change in traffic volumes at the site arising from the operation of the existing OTR, given that most traffic will be from passing trade. A net increase of 209 vehicles per hour is estimated as a result of the proposed development. It is not expected that the quantum of the expected increase will vary as a result of the variation proposed in this letter. The anticipated increase in traffic as a result of the proposed development will not have an adverse impact on the safety or operation of the adjacent road network.

We have discussed the revised site layout and in particular the retention of existing access points to Main Road and Sheoak Road with DPTI SSD officers Paul Bennett and Peta McBride. They have indicated that in general terms DPTI SSD agrees with the access arrangements under the revised proposal.

- The Environmental Noise Assessment prepared by Sonus assesses the variation proposed in this letter including the revised general site layout and the addition of an outdoor seating area. The report makes recommendations in relation to the screening and attenuation of mechanical plant to the control building, construction and insulation of the car wash facilities and drive-through, restriction to the hours of operation of the

proposed outdoor seating area and restriction to the hours of fuel deliveries and waste collection.

All of the recommendations within the Environmental Noise Assessment are reflected in the existing conditions or, to the extent not currently reflected, are embodied in the revised or additional conditions set out in the marked-up text accompanying this letter.

The Environmental Noise Assessment finds that subject to the recommended acoustic treatment measures and operational measures, the noise from the development, as we now seek to vary it, will achieve the relevant assessment criteria under the *Environment Protection (Noise) Policy 2007* at nearby dwellings, and that the proposal will not therefore cause a nuisance or impair the amenity of the locality.

I trust that the material accompanying this letter will enable you to assess this variation application, however please contact me on telephone (08) 8331 6856 or by email a.caspar@peregrine.com.au if there is any further information I can provide.

Yours faithfully



Andrew Caspar
Senior Town Planner
Peregrine Corporation

Application to vary Development Plan Consent 080/E021/16 Integrated service station complex, 1 Main Road, Belair 5052

Proposed revisions to Conditions

1. That except where minor amendments may be required by other relevant Acts, or by conditions imposed by this application, the development shall be established in strict accordance with the details and the following plans submitted in Development Application No. 080/E021/16:

Prepared by ADS Architects:

- Site ~~and Floor~~ Plan, Reference Number 14/JN1186.2/sk01j, Dated ~~30 October 21 September 2017~~ 2018;
- ~~North & South~~ Elevations – Control Building, Reference Number 14/JN1186.2/sk02a, Dated ~~7 June 2016~~ 21 September 2018;
- ~~East & West~~ Elevations – North, South-east and South-west, Reference Number 14/JN1186.2/sk03, Dated ~~3 May 2016~~ 21 September 2018;
- Elevations – Canopy – South-west and South-east, Reference Number 14/JN1186.2/sk04, Dated 21 September 2018;
- ~~North, West & East~~ Elevations – for Car Wash, Reference Number 14/JN1186.2/sk04esk05, Dated ~~26 July 2016~~ 21 September 2018.

Prepared by Oxigen:

- Landscape Plan, Reference Number ~~15.047.007, Draft C~~ [to be advised], Dated ~~13 October 2017~~ [to be advised].

Reports and Correspondence:

- ~~Planning Report prepared Letter, by~~ Peregrine Corporation, dated ~~7 February 2017~~ 12 October 2018;
- Site Traffic Compliance Statement prepared by GHDGTA Consultants, Project File 33-18137-18GTA Reference S1177734 - Final, Dated ~~December 2016~~ 12 October 2018;
- Environmental Noise Assessment prepared by Sonus, Project Number S5070.4C1 Document Reference S4928C2, Dated ~~December 2016~~ October 2018;
- Car Park lighting Modelling Report Prepared by TMK Consulting Engineers, Job Number 1703226, Dated 18 April 2017;
- Construction Environment Management Plan prepared by Fyfe Pty Ltd., Reference Number 80017-23-1, Dated 24 May 2016.

5. The egress driveway for the co-branded drive through facility from the development site to ~~Sheoak Road~~ Russell Street shall be clearly delineated with appropriate line marking in order to facilitate the safe movement of people and vehicles.
6. A ~~2.5-2.1~~ metre high solid barrier shall be constructed along the northern property boundary of the site to the extent shown in Appendix ~~BC~~: Extent of Acoustic Treatment contained in the Environmental Noise Assessment report (~~S4928C1~~ S4928C2) prepared by Sonus and dated ~~6 June 2016~~ October 2018. The solid barrier shall be constructed from Colorbond sheet steel and be sealed airtight at all junctions including with the ground and shall be lined with acoustic insulation on the facility line in accordance with Detail 2 of the Environmental Noise Assessment report.
7. A ~~1.5-1.8~~ metre high barrier shall be constructed along the northern property boundary of the site to the extent shown in Appendix ~~BC~~: Extent of Acoustic Treatment contained in the Environmental Noise Assessment report (~~S4928C1~~ S4928C2) prepared by Sonus and dated ~~6 June 2016~~ October 2018. The solid barrier shall be constructed of Colorbond sheet steel and be sealed airtight at all junctions including with the ground.
8. All mechanical services plant and equipment shall be located within the designated area on the roof of the control building and behind the mechanical plant screen to the extent

- shown in Appendix ~~B~~C: Extent of Acoustic Treatment contained in the Environmental Noise Assessment report (~~S4928C1~~~~S4928C2~~) prepared by Sonus and dated ~~6 June 2016~~October 2018. Acoustic insulation 50mm thick and having a minimum density of 32 kg/m³ shall be provided to the underside of the covered roof area to the extent shown in Appendix C: Extent of Acoustic Treatment and in accordance with Detail 1 shown on page 7 of the Environmental Noise Assessment report.
13. Acoustic insulation 50mm thick and having a minimum density of 32 kg/m³ shall be incorporated to the underside of the roof structure of the automatic car wash and manual car wash bays and to the underside of the covered roof area of the control building to the extent shown in Appendix C: Extent of Acoustic Treatment and in accordance with Detail 1 shown on page ~~97: Extent of Acoustic Treatment contained in of~~ the Environmental Noise Assessment report (~~S4928C1~~~~S4928C2~~) prepared by Sonus and dated ~~6 June 2016~~October 2018.
 15. Acoustic insulation shall be installed to the internal walls of the manual car wash bays in accordance with Appendix ~~B~~C and Detail 2 shown on page ~~107~~: Extent of Acoustic Treatment contained in the Environmental Noise Assessment report (~~S4928C1~~~~S4928C2~~) prepared by Sonus and dated ~~6 June 2016~~October 2018. In addition 2.5 metre high nib walls will be provided to each of the manual car wash bays and the wall height of the manual car wash bays will be extended to 2.5 metres to the extent shown in Appendix C: Extent of Acoustic Treatment of the Environmental Noise Assessment report (S4928C2) prepared by Sonus and dated October 2018.
 17. Access to the outdoor seating area will be allowed only between the hours of 7:00am and 10:00pm on any day.
 18. Noise from alarms produced by equipment (such as tyre filling stations, car wash pay station and vacuum bays) will be reduced as far as practical.
 19. As far as practical the ground surface will be smooth and all inspection points, grated trenches and the like will be correctly fixed to remove the potential generation of noise when a vehicle is driven over them.
- Existing conditions 17 to 34 are renumbered as 20 to 37 respectively.

Proposed OTR Integrated Service Station

Site Traffic Compliance Statement

Site: OTR Belair	GTA Reference: S1177734	Date Issued: 12 October 2018
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Site Layout

Location	1 Main Road, Belair
Description of Subject Site	<ul style="list-style-type: none"> ○ 3,310 sq.m Total Site Area ○ 365 sq.m Total Floor Area ○ 6 fuelling points in Starter Gate layout ○ Air and water facilities ○ 3 manual car wash bays and one automatic car wash ○ Quick Service Restaurant (QSR)
Relevant Documents (attached)	<ul style="list-style-type: none"> ○ ADS Drawings 14JN1186.2sk01, dated 21/09/18 ○ GTA Sketches S1177734-AT03 to AT07, dated 08/10/18

Technical Layout Review

This review should be read in conjunction with the GTA '*Generic Parking and Traffic Updated Traffic Management Report*', Issue 3, dated 29/11/2017.

Parking Provision	Applicable Rates	Required Spaces	Provided Spaces	Complies
Proposed layout provides adequate parking in accordance with the ' <i>Generic Parking and Traffic Updated Traffic Management Report</i> ', Issue 3, dated 29/11/2017?	2.5/100sq.m (with drive-thru facilities)	10	14	✓
	3.3/100sq.m (without drive-thru facilities)	N/A	N/A	N/A
Additional Comments:				

Parking Layout	Parking Space	Typical Dimensions	Complies	
Proposed car parking layout conforms with Australian Standard/New Zealand Standard for Off Street Car parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009)?	Parking	2.6m wide, 4.8m long (with 600mm overhang), set within a minimum 6.6m wide aisle.	✓	
	Disability Parking and Shared Space	2.6m wide, 4.8m long (with 600mm overhang), set within a minimum 6.6m wide aisle.	✓	
Additional Comments:				
Access Points	Comments		Complies	
The proposed access arrangements comply with Figure 3.1 in AS/NZS2890.1:2004?	Access points proposed on the Sheoak Road, Main Road and Russell Street frontages. The access Sheoak Road will be via existing separate access and egress crossovers, Main Road will be an existing left in only access and Russell Street will support left and right turn movements.		✓	
Additional Comments:	<p>The existing Sheoak Road access crossover will be retained while the egress will be increased in width from approximately 12 metres to 25 metres by introducing a flare to accommodate the heavy vehicle swept path.</p> <p>The existing left in access on Main Road will be retained without modification.</p> <p>The width of the existing Russell Street access will be increased from approximately 9 metres to 11 metres.</p>			
Queuing	Fuelling Layout	Required Queue Space	Provided Queue Space	Complies
Proposed fuelling layout provides sufficient queue spaces as per the ' <i>Generic Parking and Traffic Updated Traffic Management Report</i> ', Issue 3, dated 29/11/2017?	Starter Gate	1	1	✓
	Domino	N/A	N/A	N/A
	Additional Comments:	The fuel bowsers are positioned approximately parallel to Sheoak Road and are offset from each other in a south east direction, with a minimum of 9.1 metres from closest bower to the nearest kerb along the boundary and at the control building, allowing sufficient space for vehicles to pass to queue behind other bowsers.		

Turn Paths	Vehicle	Design Vehicle	Complies
Design vehicles able to traverse through the proposed layout? Swept paths of the heavy vehicles are enclosed at the end of the checklist	Fuel Delivery	10.2m Rigid Vehicle	N/A
		16.4m Semi Trailer	✓
		26.0m B Double	N/A
	Waste Collection	10.0m Refuse Vehicle	✓
		8.8m MRV	N/A
	Deliveries	12.5m HRV	N/A
		8.8m MRV	✓
	Drive Thru	B99 Light Vehicle	✓
Car Wash	B99 Light Vehicle	✓	

Additional Comments:	
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Traffic Generation	Traffic Generator	Applicable Rate (per hr)	Traffic Generation (trips per hr)	
What is the expected traffic generation of the proposed development?	Control Building/Bowsers	0.6 trips × 365 sq.m (Total Floor Area)	219	
	Drive-Thru	120 trips	120	
	Subtracting Existing OTR Generation	0.6 trips × 216 sq.m (Total Floor Area)	-130	
	Total PM Peak Period			209

Additional Comments:	<p>Given the access arrangements and location on the corner of Main Road, Sheoak Road and Russell Street, it is anticipated that most traffic will be from passing trade.</p> <p>It is noted that an existing OTR operates on the subject site, with a control building of approximately 216 sq.m (based on aerial imagery). Given the existing operation of an OTR on the existing site, there will be no significant change in traffic volumes at the site (that is much of the traffic is already using the site). Hence, a nett increase of 209 vehicles per hour is anticipated across Main Road, Sheoak Road and Russell Street.</p> <p>The proposed drive-thru traffic generation rate outlined above is based on rates for a Hungry Jacks drive-thru associated with an OTR site. It is anticipated that the proposed drive-thru will generate a lower demand of traffic than indicated above which should be considered a worst-case scenario.</p>
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Traffic Impact	Traffic Impact
<p>What is the expected traffic impact that the traffic generated by the proposed development will have on the surrounding road network?</p>	<p>Petrol stations are typically located to capture passing trade based on a convenient location and access arrangement.</p> <p>Due to the location of the proposed development on the corner of Main Road, Sheoak Road and Russell Street, it is expected that a high proportion of the traffic generated by the subject site will be passing trade already present on the local network.</p> <p>Given the expected high proportion of passing trade, and the existing land uses on the subject site, the proposed development is not anticipated to have an adverse impact on the safety or operation of the adjacent road network.</p>
<p>Additional Comments:</p>	

DPTI Comments and Response

No formal comments received

TRAFFIC COMPLIANCE STATEMENT CERTIFICATION

It is hereby certified that the proposed development described in this document and shown on the attached drawings is in accordance with the "On the Run" Service Stations Generic Parking and Traffic – Updated Traffic Management Report (updated July 2017) with regards to the parking and traffic operation specified.

The proposed development has been designed with consideration of Austroads Guidelines and Australian Standards, and Traffic Code applicable to the design of traffic management and parking in South Australia.

GTA verifies that the detailed design will be able to meet the requirements of the relevant guidelines, standards and code.

GTA CONSULTANTS



Paul Morris
Director
M.TransTraff, MAITPM

Attachments:
Turn Paths

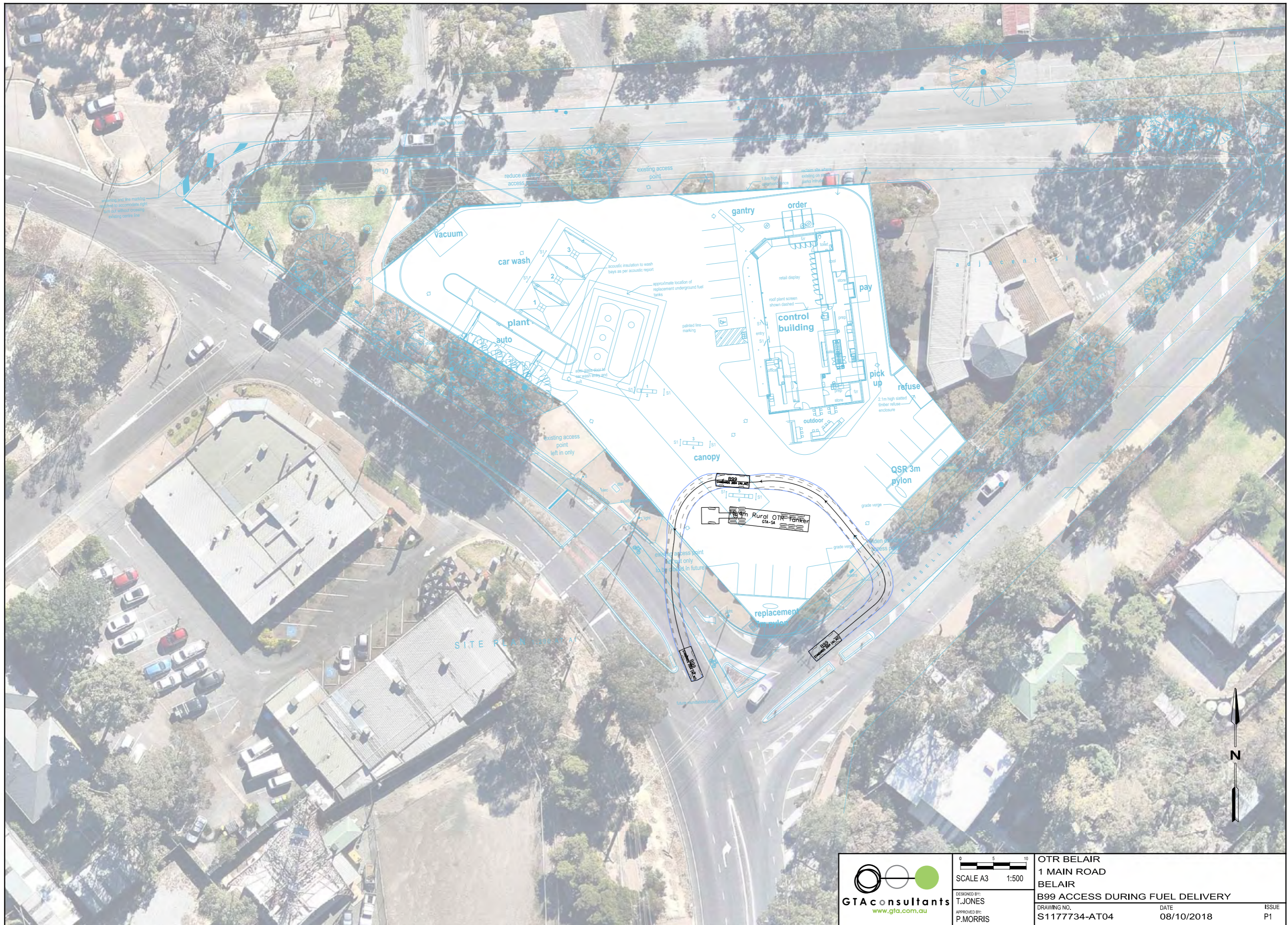


SITE PLAN (A3) AT



SCALE A3 1:500
 DESIGNED BY: T.JONES
 APPROVED BY: P.MORRIS

OTR BELAIR 1 MAIN ROAD BELAIR		DATE	ISSUE
16.4m FUEL DELIVERY ACCESS		08/10/2018	P1
DRAWING NO.	DATE		ISSUE
S1177734-AT03	08/10/2018		P1

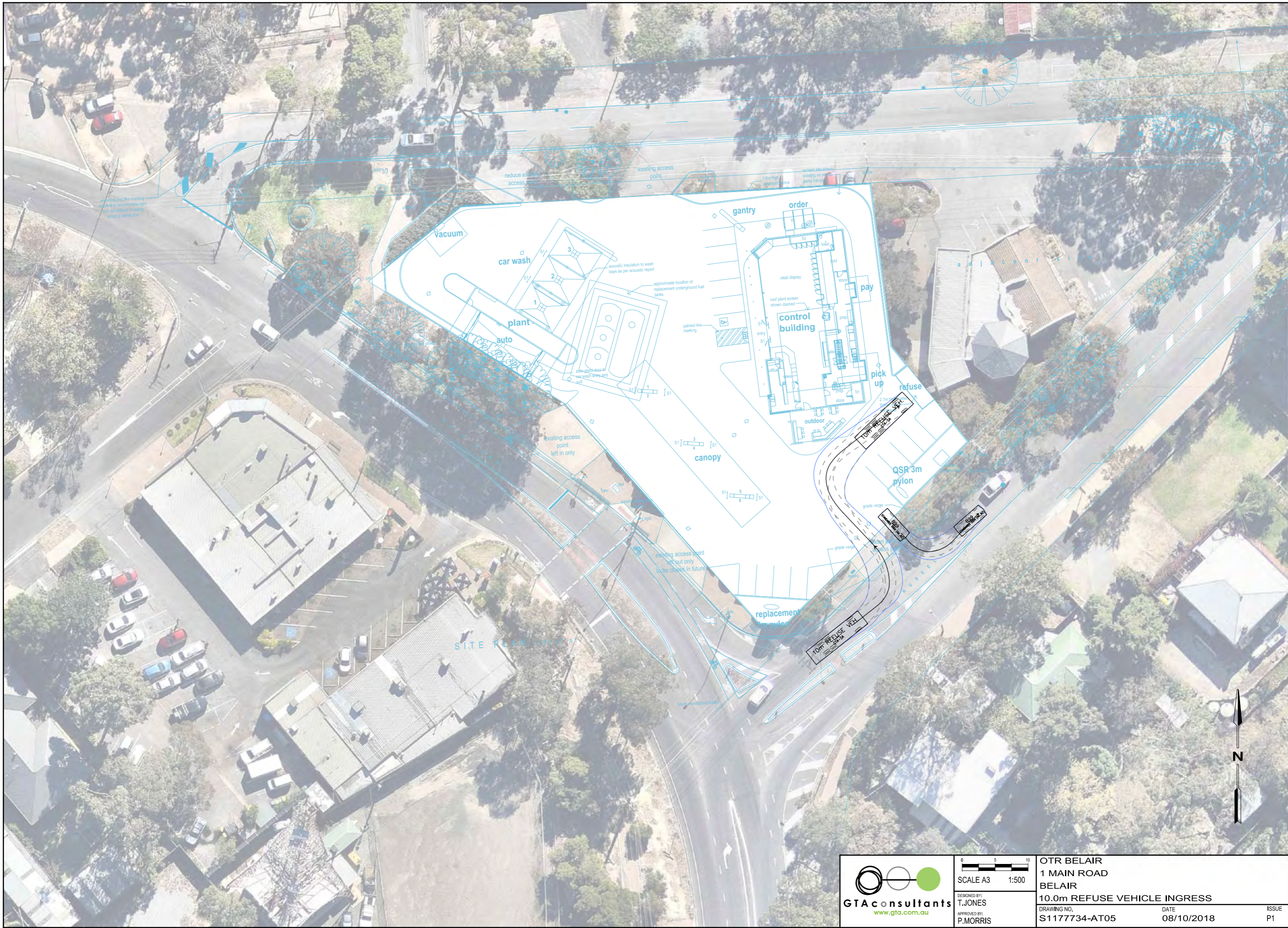


SITE PLAN (A3) AT



SCALE A3 1:500
 DESIGNED BY: T.JONES
 APPROVED BY: P.MORRIS

OTR BELAIR 1 MAIN ROAD BELAIR		ISSUE P1
B99 ACCESS DURING FUEL DELIVERY		DATE 08/10/2018
DRAWING NO. S1177734-AT04		



SITE PLAN (PART A)




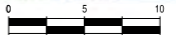
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SCALE A3 1:500
DESIGNED BY:
T.JONES
APPROVED BY:
P.MORRIS

OTR BELAIR
1 MAIN ROAD
BELAIR
10.0m REFUSE VEHICLE INGRESS
DRAWING NO. S1177734-AT05 DATE 08/10/2018 ISSUE P1



SITE PLAN (1:500)

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	DESIGNED BY: T.JONES APPROVED BY: P.MORRIS	10.0m REFUSE VEHICLE EGRESS DRAWING NO. S1177734-AT06	
			ISSUE P1





OTR Service Station Generic Parking and Traffic Management Report (updated July 2017)


Client // OTR
Office // SA
Reference // S1177712
Date // 29/11/2017

OTR Service Station Generic Parking and Traffic Management Report (updated July 2017)

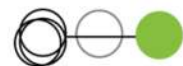
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Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
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1. Introduction

1.1 Purpose

The purpose of this report is to provide an update to traffic and parking demands for OTR Integrated Service Station sites from the previous Traffic Management Report (GHD, 23 December 2014).

The Traffic Management Report (2014) provided recommendations based on data collected at the time of that study as well as relevant guidelines including Austroads and best engineering knowledge at the time.

This report will supersede the previous report and inform development applications for new sites and provide guidance on appropriate levels of parking and access arrangements for each site. This report will be based on new surveys of recently developed OTR sites to provide a comparison to the previous traffic and parking demands, and determine if revised application rates should be considered.

This report considers three different OTR petrol station sites in Fullarton, Surrey Downs and Thorngate.

1.2 Methodology

1.2.1 Objectives

- Review the parking demand at each site and subsequent peak parking demand rates
- Review the traffic movements and subsequent generation rates at each site
- Review the degree of queuing

1.2.2 Site Inspections

Observations of the sites were made on Thursday 25th May 2017 with video recordings of each site by AusTraffic. These observations over a 24-hour period enable a record of:

- Parking demand at each site;
- Traffic movements to and from the site at each access point;
- Use of the drive-thru lane (where present);
- Queuing at the bowsers.

1.3 Scope and Limitations

The following report sets out the results of the analysis of three sites – Fullarton, Surrey Downs and Thorngate. Surrey Downs site is further from the Adelaide CBD whereas Fullarton and Thorngate sites are in reasonably similar proximity to the CBD. The opinions, conclusions and any recommendations in this report are based on the conditions encountered at each of these sites and the information reviewed for the preparation of this report. Three sites are not generally considered sufficient to draw conclusions regarding trends or patterns of car parking behaviour, traffic generation or queuing characteristics.

These surveys and analysis are based on metropolitan sites which may have a different operation to regional sites.

2. Site Selection and Characteristics

Three sites have been selected to be analysed as part of this assessment. Details of the three sites are set out in the following sections.

2.1 OTR Fullarton

OTR Fullarton is located at 390 Fullarton Road in Fullarton, on the north-eastern corner of Fullarton Road and Fisher Street. The location of the Fullarton site and its surrounds is shown in Figure 2.1 and layout shown in Figure 2.2.

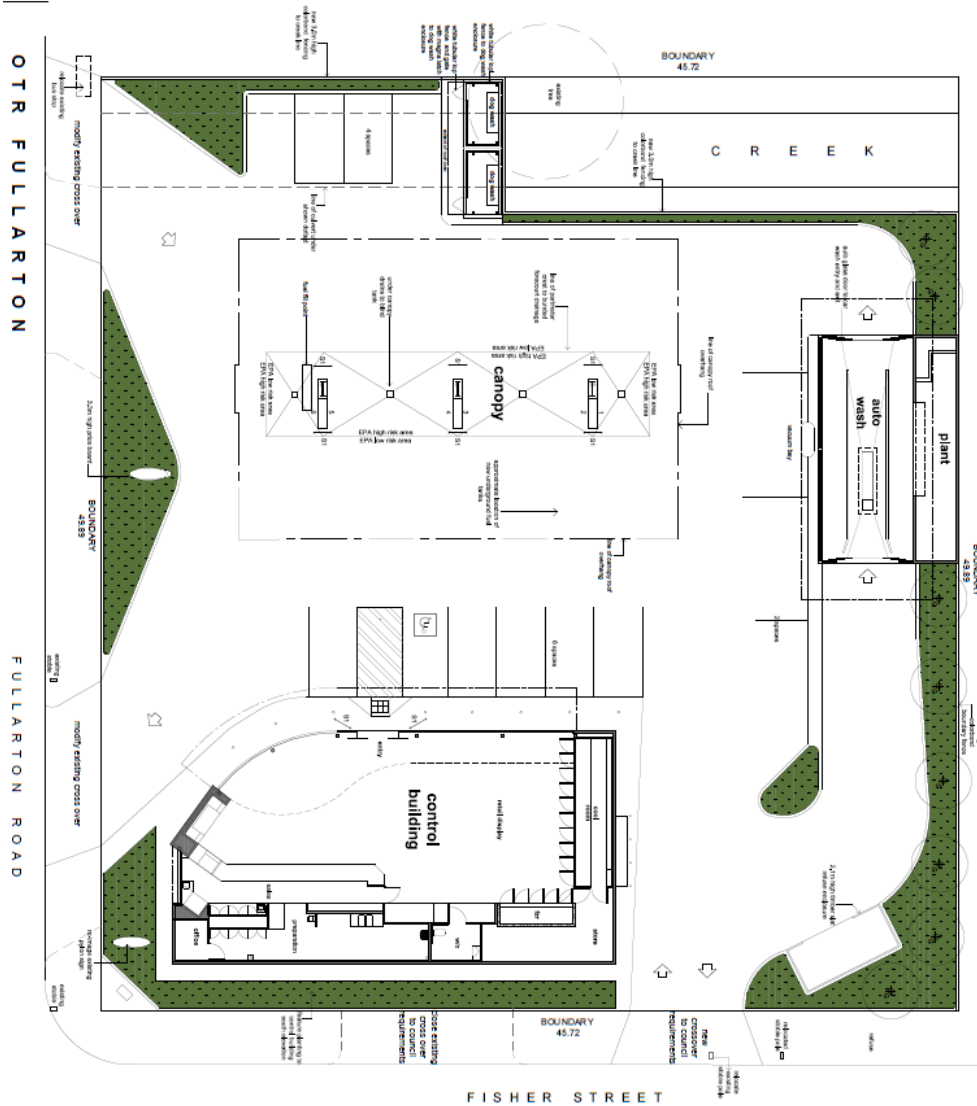
Figure 2.1: OTR Fullarton Site and Surrounds



Access to the site is via two one-way crossovers to Fullarton Road (one ingress and one egress) and one two-way crossover to Fisher Street. The site includes a Brumby's, Moe's Dog and Shake, Happy Wash and C Coffee.

The site is configured as a three pump "starter gate" parallel to Fullarton Road providing six petrol filling positions under one canopy area, as shown on the site plans (Figure 2.2). Six parking spaces are provided immediately adjacent the control building, with another four spaces available adjacent the dog wash on the northern edge of the site. The site also includes an auto carwash with vacuum bays on the eastern boundary.

Figure 2.2: OTR Fullarton Site Layout



Fullarton Road carries approximately 25,500 vehicles per day (DPTI Annual Average Daily Traffic Volumes, dated 14 September 2015).

2.2 OTR Surrey Downs

OTR Surrey Downs is located at 665 Golden Grove Road in Surrey Downs on the eastern side of Golden Grove Road to the north of Grenfell Road. The location of the Surrey Downs site and its surrounds is shown in Figure 2.3 with the site layout shown in Figure 2.4.

Figure 2.3: OTR Surrey Downs Site and Surrounds

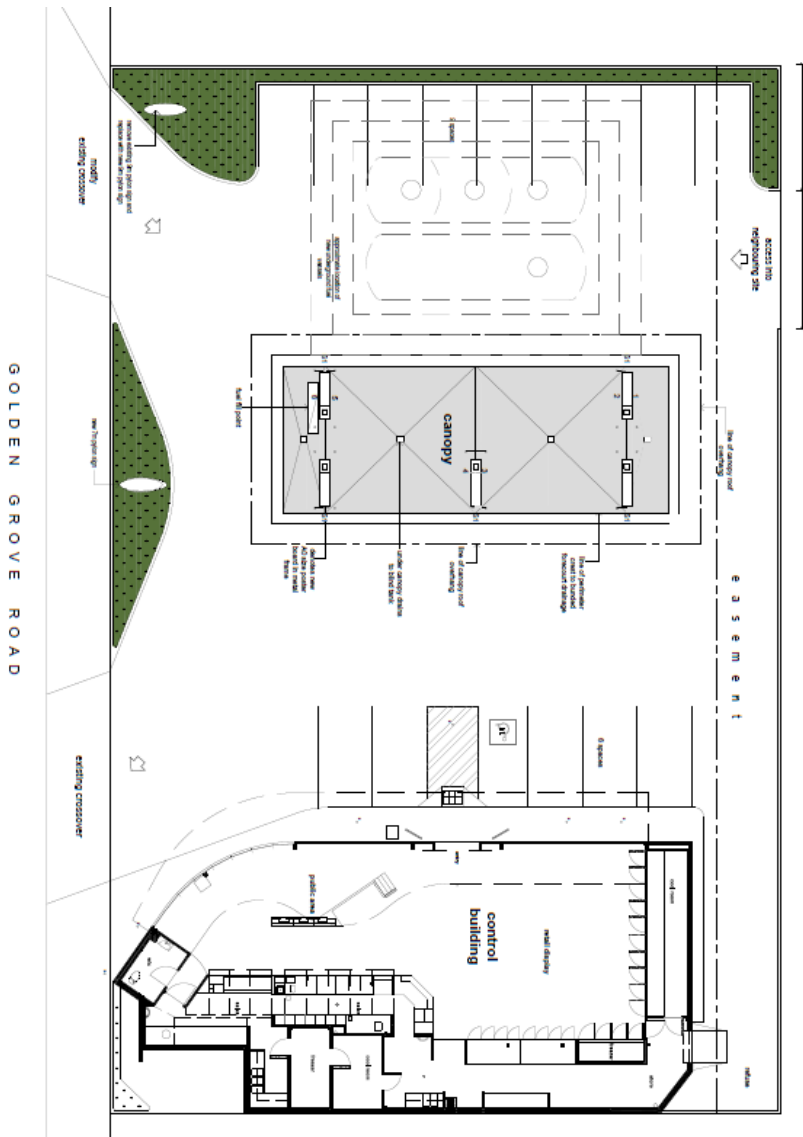


This site includes a Wok in a box (QSR), Moe's Dog & Shake, EAT Bakery, C Coffee and CHILL. Access to the site is via two one-way crossovers to Golden Grove Road (one ingress and one egress).

The site is configured as a six pump "starter gate" perpendicular to Golden Grove Road providing twelve petrol filling positions under one canopy area, as shown on the site layout.

A total of 15 parking spaces are provided with six parking spaces are provided immediately adjacent the control building, with another nine spaces available on the north-eastern edge of the site.

Figure 2.4: OTR Surrey Downs Site Layout



Golden Grove Road carries approximately 15,800 vehicles per day (DPTI Annual Average Daily Traffic Volumes, dated 14 September 2015).

2.3 OTR Thorngate

OTR Surrey Downs is located at 20A Main North Road in Thorngate on the western side of Main North Road on the corner of Carter Street. The location of the Thorngate site and its surrounds is shown in Figure 2.5 with the site layout shown in Figure 2.6.

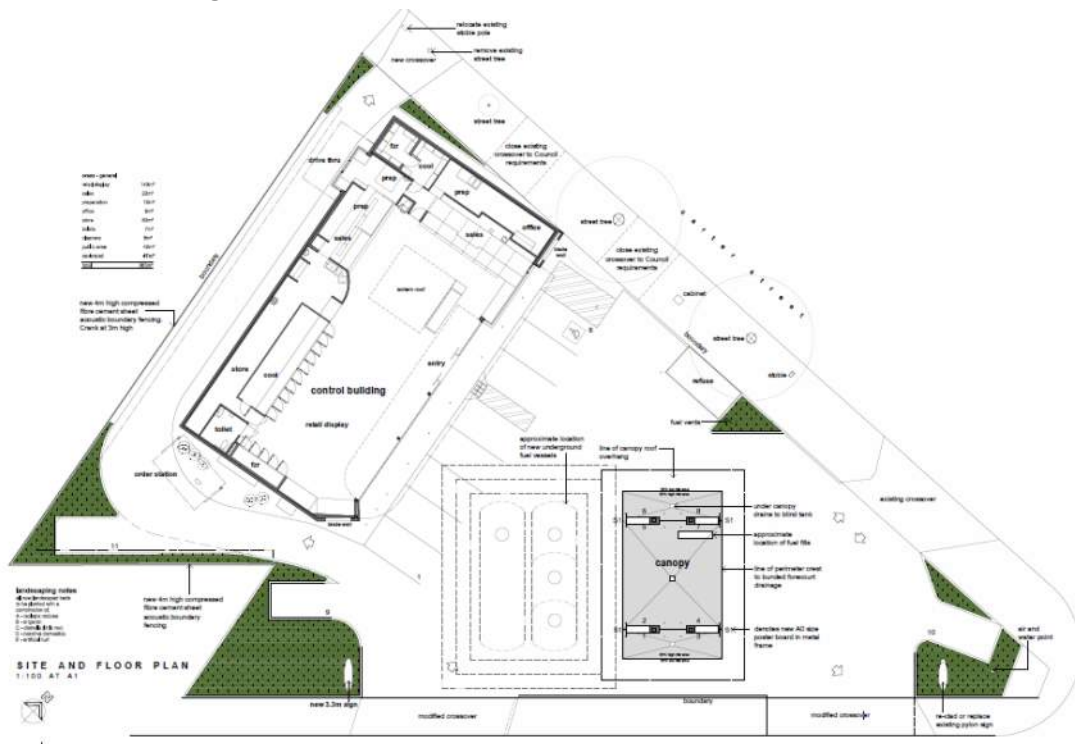
Figure 2.5: OTR Thorngate Site and Surrounds



This site includes an Oporto (Drive-thru, QSR), C Coffee, Moe's and EAT. Access to the site is via two one-way crossovers to Main North Road (one ingress and one egress) and one two-way crossover and one one-way egress (drive-thru) crossover to Carter Street.

The site is configured as a four pump "domino" perpendicular to Main North Road providing eight petrol filling positions under one canopy area, as shown on the site layout. Eight parking spaces are provided immediately adjacent the control building, with another two spaces singularly placed in landscaping areas. The site includes a drive-thru (for Oporto) which exits onto Carter Street.

Figure 2.6: OTR Thorngate Site Plans



Main North Road carries approximately 52,900 vehicles per day (DPTI Annual Average Daily Traffic Volumes, dated 14 September 2015).

2.4 Site Summary

Table 2.1 and Table 2.2 summarise the site details for each of the three sites.

Table 2.1: Land Use Details

Site Location	Retail Floor Area	Total Floor Area	Site Area	No Refilling Positions	Parking Spaces
OTR Fullarton	150 sq.m	276 sq.m	2,050 sq.m	6	12
OTR Surrey Downs	164 sq.m	310 sq.m	1,575 sq.m	6	15
OTR Thorngate	143 sq.m	363 sqm	1,600 sq.m	8	10

Table 2.2: Services at Each Site

Site Location	Brumby's	Moe's Dog and Shake	Happy Wash	C Coffee	EAT Bakery	CHILL	Wokinabox (QSR)	Oporto (with Drive-Thru) (QSR)
OTR Fullarton	•	•	•	•				
OTR Surrey Downs		•		•	•	•	•	
OTR Thorngate		•		•	•	•		•

3. Car Parking

3.1 Car Parking Supply

The car parking provision, as well as the different areas of the site for comparison, at each of the three OTR sites is summarised in Table 3.1.

Table 3.1: Car Parking Supply

Site Location	Floor Areas			No Refilling Positions	Car Parking Supply		
	Retail Floor Area	Total Floor Area	Site Area		Retail	Vacuum Bays	Total
OTR Fullarton	150 sq.m	276 sq.m	2,050 sq.m	6	10	2	12
OTR Surrey Downs	164 sq.m	310 sq.m	1,575 sq.m	6	15	0	15
OTR Thorngate	143 sq.m	363 sqm	1,600 sq.m	8	10	0	10

3.2 Car Parking Demand

Based on the surveys undertaken Table 3.2 summarises the peak parking demands observed at each site.

Table 3.2: Peak Car Parking Demand

Site Location	Spaces Available	Peak Parking Demand	Surplus Spaces	Peak Parking Time	Parking Occupancy
OTR Fullarton	12	9	3	8:15 AM	75%
OTR Surrey Downs	15	10	5	7:00 PM	67%
OTR Thorngate	10	6	4	12:00 PM	60%

Based on the above peak parking rates Table 3.3 sets out the peak parking demand rates based on these survey results. Rates have been calculated for spaces per 100sq.m of retail floor, gross floor and site area.

Table 3.3: Peak Car Parking Rates

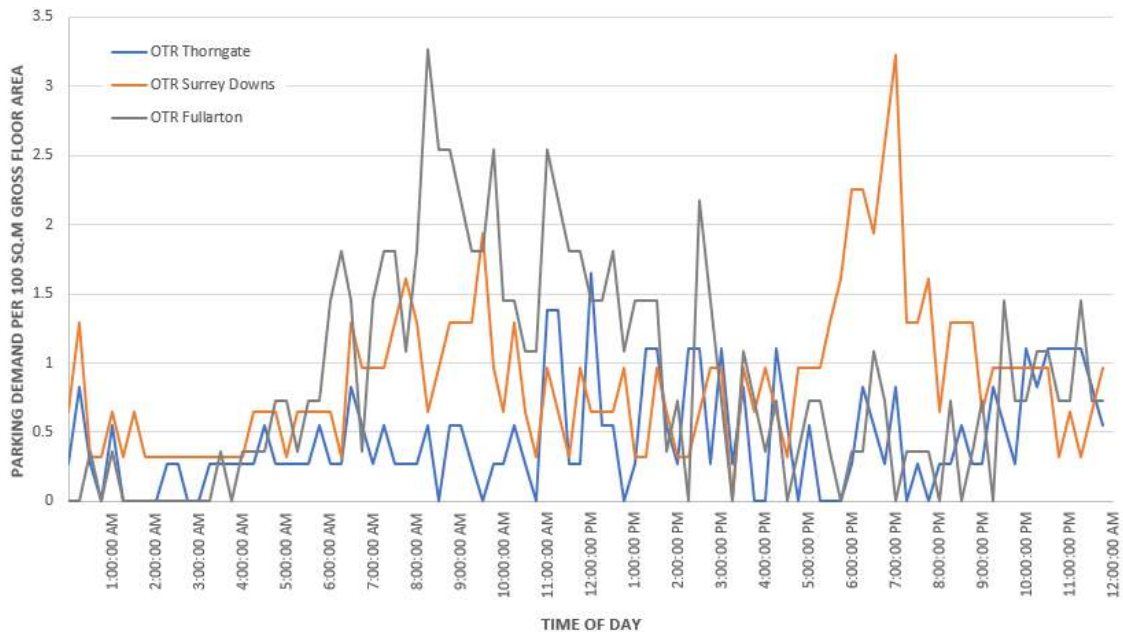
Site Location	Spaces per 100sq.m Retail Floor Area	Spaces per 100sq.m Total Floor Area	Spaces per 100sq.m Site Area
OTR Fullarton	6.0	3.3	0.4
OTR Surrey Downs	6.1	3.2	0.6
OTR Thorngate	4.2	1.7	0.4

3.3 Temporal Car Parking Profiles

3.3.1 Demand Profiles

Figure 3.1 compares the car parking rates for the three sites across the 24-hour period surveyed.

Figure 3.1: Car Parking Demand Profiles



The above shows that the daytime period is generally busier than the very late night and very early morning for all sites. The Fullarton site sees a large peak in the morning at around 8:25am which coincides with the morning commuter peak hour.

The Surrey Downs site has a significant evening peak at 7:00pm likely due to the fact this site also contains a Wokinabox which would provide a dinner service.

While Thorngate has Oporto, this offers a drive-thru option which Wokinabox does not.

Thorngate does not have a significant spike in parking.

3.3.2 Car Parking Demand Rate

By way of comparison the GHD report considering 8 different OTR sites resulted in the following car parking generation rate;

- 2.5 spaces per 100sq.m GFA for sites < 300sq.m without quick service restaurant
- 3.3 spaces per 100sq.m GFA for sites between 300sq.m and 400sq.m with quick service restaurant
- 1.8 spaces per 100sq.m GFA for sites > 400sq.m with quick service restaurant

The above was based off a 99th percentile parking generation rate but excluded staff parking.

Table 3.4 summarises the comparison of the above rates when applied to the three sites assessed within this report.

Table 3.4: Car Parking Rate Comparison

Site Location	Total Floor Area (sq.m)	No. Fuel Points	Peak Demand (spaces)	Spaces per 100sq.m Total Floor Area
OTR Fullarton	276	6	9	3.3
OTR Surrey Downs	310	6	10	3.2
OTR Thorngate	363	8	6	1.7

Table 3.4 shows how the Thorngate sites peak parking demand differs significantly from the other 2 sites when relating simply to Total Floor Area.

3.4 Summary

Peak parking was recorded at each site as follows;

- **OTR Fullarton** peak parking demand 9 spaces of 12 at 8:15am
- **OTR Surrey Downs** peak parking demand 10 spaces of 15 at 7:00pm
- **OTR Thorngate** peak parking demand 6 spaces of 10 at 12:00pm

Peak parking was calculated at each site as the following parking rates;

- OTR Fullarton
 - 3.3 spaces per 100sq.m Total Floor Area
- OTR Surrey Downs
 - 3.2 spaces per 100sq.m Total Floor Area
- OTR Thorngate
 - 1.7 spaces per 100sq.m Total Floor Area

Given the available sample, it is recommended to use apply peak parking rates of:

3.3 spaces per 100sq.m Total Floor Area for sites without drive-thru, and

2.5 spaces per 100sq.m Total Floor Area for sites with drive-thru.

4. Traffic Generation

These sections set out the observed traffic generation relating to the operation of petrol pumps and facilities, excluding drive through. Drive-thru is considered in Section 4.3 for the one site that had drive-thru facilities.

4.1 Traffic Generation

Table 4.1 sets out the recorded traffic generation for each site. This includes daily volumes (24 hour), the AM and PM road network peak hours (approximately 8:00am to 9:00am and 5:00pm to 6:00pm respectively) as well as the site AM and PM site peak periods where they differ from the network peaks.

Table 4.1: Surveyed Traffic Generation

Site Location	Daily	Road Network AM Peak Hour	Road Network PM Peak Hour	AM Site Peak Hour		PM Site Peak Hour	
				Time	Trips	Time	Trips
OTR Fullarton	2260	230	165			2:30-3:30pm	179
OTR Surrey Downs	1953	144	166				
OTR Thorngate	1550	56	80	11am-12pm	107	2:30-3:30pm	141

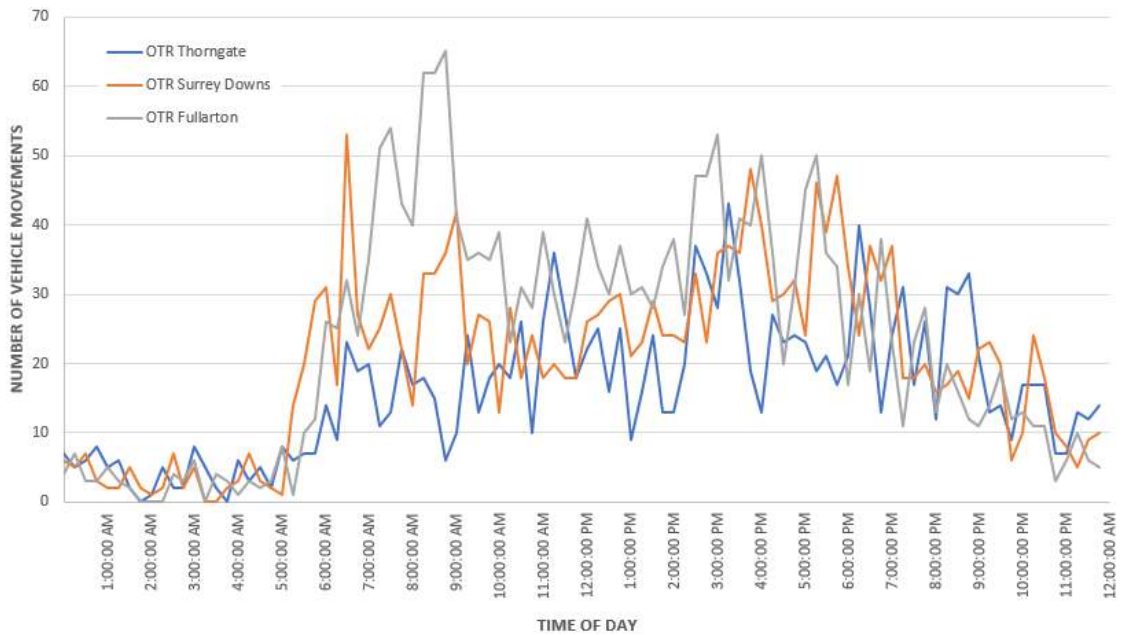
Based on the above survey results the following is noted;

- daily traffic generation ranges from 1,550 vehicles per day to 2,260 vehicles per day for the sites surveyed;
- the AM road network peak ranges from 56 to 230 vehicles per hour;
- This correlates to a maximum PM peak hour generation of 0.83 trips per square metre of total floor area;
- the PM road network peak ranges from 80 to 165 vehicles per hour;
- this correlates to a maximum PM peak hour generation of 0.6 trips per square metre of total floor area;
- Thorngate had a peak in the AM between 11:00am and 12:00pm;
- Fullarton and Thorngate both had a peak in the PM with up to 179 vehicles per hour between 2:30pm to 3:30pm.

4.2 Temporal Traffic Profile

Figure 4.1 shows the temporal traffic profile across the 24-hour period surveyed, in 15 minute intervals for the three sites surveyed.

Figure 4.1: Temporal Traffic Profile



The above shows that while the overall trend is similar across all three sites, the Fullarton site has a clear peak between 8am and 9am, which corresponds to the commuter peak period. The Surrey Downs site has a peak during the network peak, but also has a substantial peak at 6:30am.

4.2.1 Traffic Generation Rate Comparison

The Traffic Management Report (2014) referred to the RTA Guide for traffic generation rates for service stations (petrol stations) as follows;

$$\text{Evening peak hour vehicle trips} = 0.04 A(S) + 0.3 A(F).$$

$$\text{Or Evening peak hour vehicle trips} = 0.66 A(F)$$

Where $A(S)$ = area of site (m^2) and $A(F)$ = Total Floor Area of convenience store (m^2).

Hence, a typical OTR store has been previously calculated to generate in the order of 260 trips in the evening peak hour based on the RTA Guide.

Analysis of the highest PM Network Peak (165 trips) for OTR Fullarton suggests a similar relationship to the RTA Guide based on Total Floor Area ($A(F)$) below) of 276 sq.m:

$$\text{OTR evening peak hour vehicle trips} = 0.6 A(F)$$

Based on the analysis across three sites, it was established that a similar relationship to the RTA Guide exists with the sites ranging from 0.22 to 0.6 times the Total Floor Area. All three sites were recorded as lower than the RTA Guide calculations.

4.3 Drive-Thru Traffic Generation

The below drive-thru traffic analysis has been undertaken based on surveys conducted by AusTraffic at the OTR Thorngate site's Oporto drive-thru, as well as data provided by OTR for the number of customers served through the drive through window on an hourly basis for the 12 June 2017. GTA notes these consider number of vehicles utilising the drive-thru, which corresponds to two trips per vehicle (one entry and one exit movement per vehicle).

4.3.1 Oporto

Table 4.2 summarises the traffic generation of Oporto drive-thru sites based on the surveyed Thorngate site and three other sites provided by OTR.

Table 4.2: Oporto Drive-Thru Traffic Generation

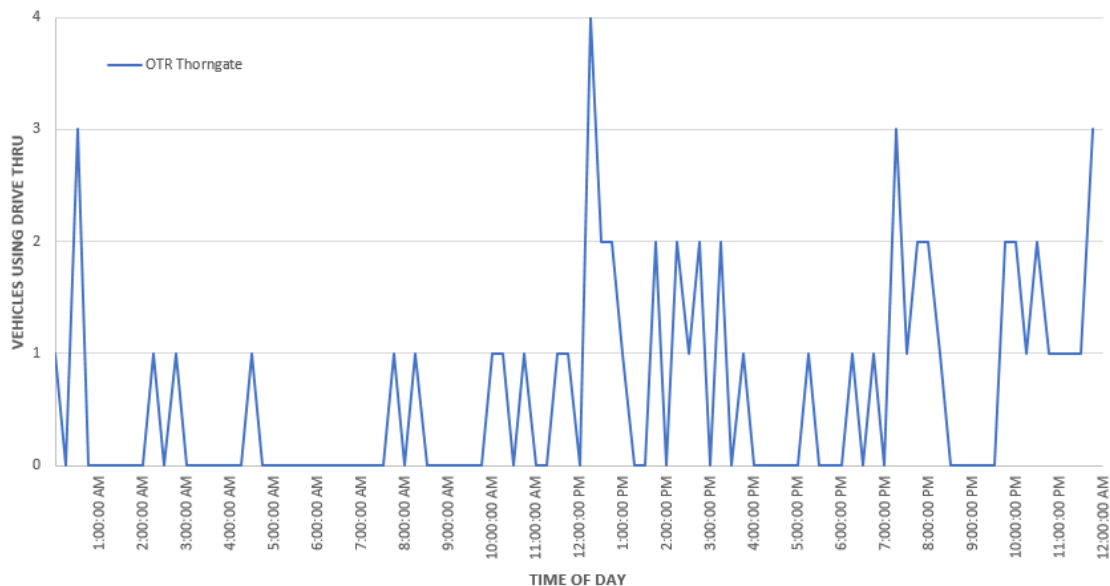
Site Location	Daily Volume	Network Peak Volume		Site Peak Volume	
		8:00am to 9:00am	5:00pm to 6:00pm	Time	Peak Volume
Thorngate	118	1	1	12:15pm-1:15pm	9
Glenside	123	1	10	4:00pm-5:00pm	13
Mawson Lakes	125	0	10	6:00pm-7:00pm	12
Pulteney Street	134	0	7	12:00pm-1:00pm	14
MAXIMUM	134	1	10		14
AVERAGE	125	1	7		12

Based on the above the use of Oporto drive-thru's are very low, particularly in the network peak periods. Of the sites two peaked during the lunchtime period, and the other two around the evening period but just outside of the typical network peak.

Temporal Use

Figure 4.2 shows the temporal traffic profile across the 24-hour period surveyed for the Thorngate Oporto drive-thru, in 15-minute intervals.

Figure 4.2: Drive-Thru Temporal Demand – Every 15mins



4.3.2 Hungry Jacks

Table 4.3 summarises the traffic generation of Hungry Jacks drive-thru sites based on information provided by OTR.

Table 4.3: Hungry Jacks Drive-Thru Traffic Generation

Site Location	Daily Volume	Network Peak Volume		Site Peak Volume	
		8:00am to 9:00am	5:00pm to 6:00pm	Time	Peak Volume
Nuriootpa	373	8	33	12:00pm-1:00pm	53
Aldinga	450	5	46	5:00pm-6:00pm	46
Dry Creek	215	7	14	12:00pm-1:00pm	25
Glen Osmond	360	14	29	12:00pm-1:00pm	33
Murray Bridge Adelaide Road	314	9	28	12:00pm-1:00pm & 1:00pm-2:00pm	38
Renmark	176	3	14	1:00pm-2:00pm	18
MAXIMUM	450	14	46		53
AVERAGE	315	8	27		36

The above shows that the traffic generation for a Hungry Jacks is significantly more than that of an Oporto, in the order of 3 times the traffic generation. The above also indicates that Hungry Jacks drive-thru's typically peak during the lunchtime period (somewhere between 12:00pm and 2:00pm), although typically still have a reasonable spike in usage during the PM peak.

4.3.3 Subway

Table 4.4 summarises the traffic generation of Subway drive-thru sites, based on information provided by OTR.

Table 4.4: Subway Drive-Thru Traffic Generation

Site Location	Daily Volume	Network Peak Volume		Site Peak Volume	
		8:00am to 9:00am	5:00pm to 6:00pm	Time	Peak Volume
South Plympton	336	7	16	12:00pm-1:00pm	30

Given information for only one Subway drive-thru site was provided the conclusions that can be drawn are limited. The above data suggests that while the daily volume is relatively high (compared to Oporto and Hungry Jacks) the peak periods have lower volumes.

4.3.4 Conclusion

The traffic generation of the drive-thru is much less than suggested by the RTA Guide (typically in the order of 180 trips (90 vehicles) per hour in the PM peak), and as used in current assessments.

The above analysis suggests Oporto drive-thru's have up to 135 vehicles use them per day, and up to 14 vehicles per hour in the site peak hour (10 in the PM peak). For the Hungry Jacks sites, higher volumes were indicated but these still fall well short of the RTA Guide (180vph). Daily Hungry Jacks volumes were recorded up to 450 vehicles per day, with up to 53 in the site peak hour recorded (46 in the PM peak). These volumes are well below the RTA Guide (and current assessment rate) of 180 trips in the PM peak hour.

Based on the above it is recommended that 60 vehicles entering and exiting per hour (corresponding to 120 trips per hour) be used to test the drive-thru facilities in the overall traffic generation of the site. For some uses this may be particularly conservative and is thus an appropriate sensitivity analysis.

4.4 Summary

The traffic surveys indicate that the traffic generation recommended in the Traffic Management Report 2014 are still applicable (based on the RTA Guide) from the sample of sites surveyed for the PM network peak hour. Hence, the calculation of **0.6 trips x (Total Floor Area sq.m)** should be applied for testing the traffic impacts of OTR sites for the PM road network peak hour. During the AM road network peak hour, a calculation of **0.83 trips x (Total Floor Area sq.m)** should be applied.

The recorded traffic generation of drive-thru's is much less than calculated using the RTA Guide rates, and as used in current assessments. Typical development applications for OTR sites with fast food outlets are assessed based on in the order of 180 trips in the evening peak. This is significantly higher than observed use. Hence it is recommended that a sensitivity analysis of **120 vehicles per hour (two-way trips) based on 60 vehicles entering and exiting could be used to test drive-thru facilities.**

Further data should be collected to provide a metropolitan sample suitable for more detailed analysis with regards to traffic generation.

5. Queuing Characteristics

5.1 Introduction

At the same time as the traffic and parking surveys the queues at each bowser were recorded for all three sites. GTA notes that the Fullarton and Surrey Downs sites have their fuel pumps arranged in a “starter gate” arrangement, while the Thorngate site fuel pumps are in a “domino” arrangement.

Figure 5.1 and Figure 5.2 show the two arrangements of fuel pumps.

Figure 5.1: “Starter gate” fuel pump arrangement

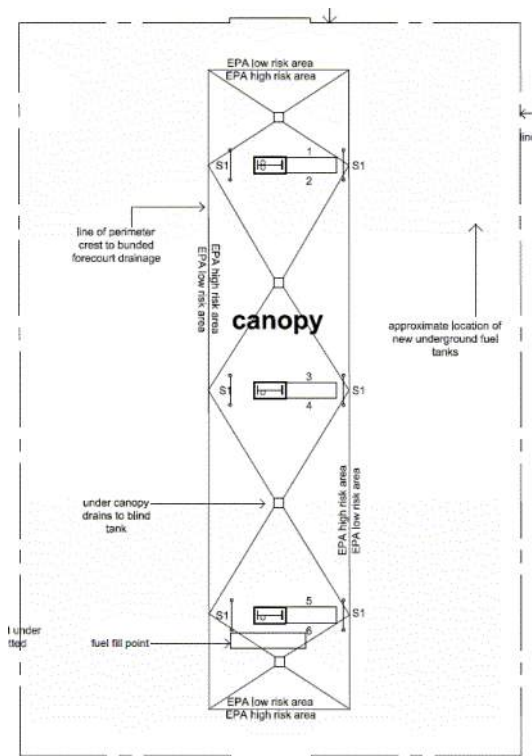
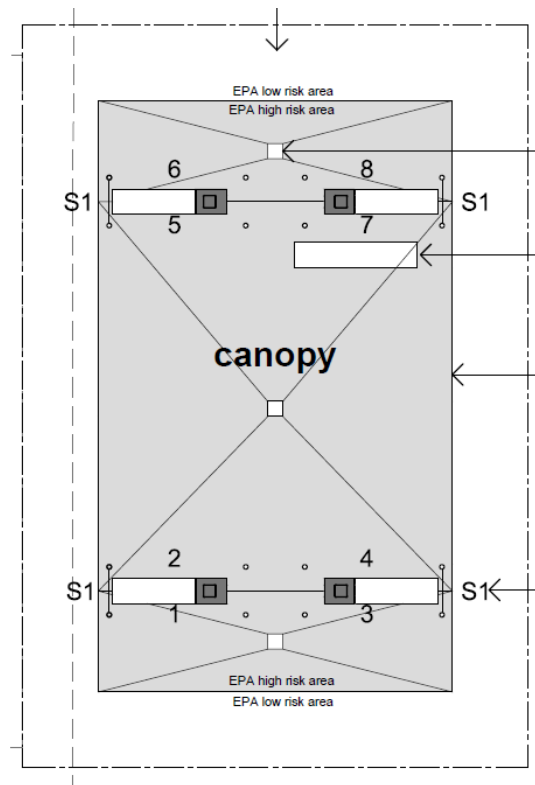


Figure 5.2: “Domino” fuel pump arrangement



5.2 OTR Fullarton

OTR Fullarton’s fuel pumps are set out in a starter gate arrangement. Table 5.1 sets out the peak queues observed at each fuel bowser at the Fullarton site and the number of times the peak queue occurred across the 24-hour survey period.

Table 5.1: OTR Fullarton Queuing

Fuel Pump	Peak Queue at Bowser (not including vehicle using fuel pump)	Number of times this length queue occurred
Bowser 1	1	16
Bowser 2	1	5
Bowser 3	1	15
Bowser 4	1	3
Bowser 5	2	1
Bowser 6	1	4

Queue capacity would be technically counted as 1, although would be possible depending on bowser and direction for a second car to queue without blocking access to other bowsers.

The occurrence of queuing was relatively infrequent. Not every bowser had someone waiting to access it at the same time as all the other bowsers had a queue. GTA notes that some queuing would have occurred even when there were free bowsers, given the preference of drivers to have the fuel pump on the same side of the vehicle as the vehicle fill point.

During the AM Network Peak of the 122 inbound vehicles into the site, 19 queued for a pump, meaning 16% of vehicles queued. During the PM Network Peak of the 80 inbound vehicles into the site, 2 queued for a pump, meaning 2.5% of vehicles queued. The queues were not observed reaching the roadway at any point during the 24-hour period surveyed.

5.3 OTR Surrey Downs

OTR Surrey Downs' fuel pumps are set out in a starter gate arrangement. Table 5.2 sets out the peak queues observed at each fuel bowser at the Surrey Downs site and the number of times the peak queue occurred across the 24-hour survey period.

Table 5.2: OTR Surrey Downs Queuing

Fuel Pump	Peak Queue at Bowser (not including vehicle using fuel pump)	Number of times this length queue occurred
Bowser 1	0	-
Bowser 2	2	1
Bowser 3	0	-
Bowser 4	2	1
Bowser 5	0	-
Bowser 6	1	1
Bowser 7	0	-
Bowser 8	0	-
Bowser 9	0	-
Bowser 10	1	6
Bowser 11	0	-
Bowser 12	0	-

Queue capacity would be technically counted as 1, although would be possible depending on bowser and direction for a second car to queue without blocking access to other bowsers.

The occurrence of queuing was infrequent and minor. At this site, many of the bowser did not have a queue at any point across the day. GTA notes that some queuing would have occurred even when there were free bowser, given the preference of drivers to have the fuel pump on the same side of the vehicle as the vehicle fill point.

During the AM Network Peak of the 50 inbound vehicles into the site, 0 queued for a pump, meaning 0% of vehicles queued. During the PM Network Peak of the 78 inbound vehicles into the site, 5 queued for a pump, meaning 6.4% of vehicles queued. The queues were not observed reaching the roadway at any point during the 24-hour period surveyed, which was expected given the very low amount of queuing observed.

5.4 OTR Thorngate

OTR Thorngate's fuel pumps are set out in a domino arrangement. Table 5.3 sets out the peak queues observed at each fuel bowser at the Thorngate site and the number of times the peak queue occurred across the 24-hour survey period

Table 5.3: OTR Thorngate Queuing

Fuel Pump	Peak Queue at Bowser (not including vehicle using fuel pump)	Number of times this length queue occurred
Bowser 1	1	1
Bowser 2	2	3
Bowser 3	2	2
Bowser 4	2	1
Bowser 5	0	-
Bowser 6	0	-
Bowser 7	0	-
Bowser 8	1	1

Queue capacity would be technically counted as 1, although would be possible depending on bowser and direction for a second car to queue without blocking access to other bowser. Queueing into the crossover would be plausible depending on direction of access and how vehicles park in queue, generally though 2 car queues should not spill into crossover/onto adjacent road network.

The occurrence of queuing was infrequent. At this site, several of the bowser did not have a queue at any point across the day. GTA notes that some queuing would have occurred even when there were free bowser, given the preference of drivers to have the fuel pump on the same side of the vehicle as the vehicle fill point.

During the AM Network Peak of the 29 inbound vehicles into the site, 0 queued for a pump, meaning 0% of vehicles queued. During the PM Network Peak of the 46 inbound vehicles into the site, 9 queued for a pump, meaning 20% of vehicles queued. The queue was not observed reaching the roadway at any point during the 24-hour period surveyed.

5.5 Drive-Thru Queuing

Peak queues of 3 vehicles queuing in the Thorngate Oporto drive-thru occurred in the following 15 minute blocks;

- 12:15pm-12:30pm
- 7:15pm-7:30pm
- 12:15am-12:45am

A queue length of 3 vehicles is considered minor and was not observed impacting the function of the rest of the site or the road network.

5.6 Summary

In the AM peak period between 0% and 16% of vehicles queued to use a fuel pump. In the PM peak period between 2.5% and 20% of vehicles queued to use a fuel pump.

At all three sites the peak queue was two vehicles waiting for a fuel pump. At the Fullarton site this peak queue occurred once, at Surrey Downs twice and 6 times at Thorngate. As such there was very minimal queuing observed, and at no point was the queue observed impacting upon the surrounding road network.

Based on the above analysis and discussion, a peak bowser queue of **one vehicle should be assessed in the design of OTR sites with a “starter gate” arrangement** of fuel points. A peak bowser queue of **two vehicles should be assessed in the design of OTR sites with a “domino” arrangement** of fuel points.

6. Conclusions

The following conclusions are made from the analysis contained in this report:

6.1 Parking

- i Peak parking was observed at each site as follows:
 - o **OTR Fullarton** peak parking demand 9 spaces of 12 at 8:15am
 - o **OTR Surrey Downs** peak parking demand 10 spaces of 15 at 7:00pm
 - o **OTR Thorngate** peak parking demand 6 spaces of 10 at 12:00pm
- ii Peak parking was calculated at each site as the following parking rates:
 - o **OTR Fullarton:** 3.3 spaces per 100sq.m Total Floor Area
 - o **OTR Surrey Downs:** 3.2 spaces per 100sq.m Total Floor Area
 - o **OTR Thorngate:** 1.7 spaces per 100sq.m Total Floor Area

Given the available sample, it is recommended to use apply peak parking rates of:

3.3 spaces per 100sq.m Total Floor Area for sites without drive-thru, and
2.5 spaces per 100sq.m Total Floor Area for sites with drive-thru.

6.2 Traffic

- i Daily Traffic generation was observed as follows for each site;
 - o OTR Fullarton: 2260 trips
 - o OTR Surrey Downs: 1953 trips
 - o OTR Thorngate: 1550 trips
- ii AM network peak hour traffic generation was observed as follows for each site;
 - o OTR Fullarton: 230 trips
 - o OTR Surrey Downs: 144 trips
 - o OTR Thorngate: 56 trips
- iii PM network peak hour traffic generation was observed as follows for each site;
 - o OTR Fullarton: 165 trips
 - o OTR Surrey Downs: 166 trips
 - o OTR Thorngate: 80 trips
- iv The OTR Thorngate site has an AM peak outside of the Network peak;
 - o 11:00am-12:00pm 107 trips
- v The OTR Fullarton and OTR Thorngate sites have a PM peak outside of the Network peak;
 - o OTR Fullarton 2:30-3:30pm 179 trips
 - o OTR Thorngate 2:30-3:30pm 141 trips

The traffic surveys indicate that the traffic generation recommended in the Traffic Management Report 2014 are still applicable (based on the RTA Guide) from the sample of sites surveyed for the network PM peak hour.

Hence, the calculation of **0.6 trips x (Total Floor Area in sq.m)** should be applied for testing the traffic impacts of OTR sites during the PM road network peak hour. During the AM road network peak hour, a calculation of **0.83 trips x (Total Floor Area sq.m)** should be applied.

6.3 Drive-Thru

It is recommended that **120 vehicles per hour (two-way trips from 60 vehicles) be applied to the drive-thru** component of an OTR site for a sensitivity analysis, based on assessment of a variety of Oporto, Hungry Jacks and one Subway drive-thru at various OTR sites that revealed the actual generation is significantly lower than assessed in typical traffic impact statements.

6.4 Bowser Queueing

- i OTR Fullarton
 - "Starter gate" arrangement of fuel points
 - 16% and 2.5% of vehicles queued in the AM and PM peak respectively
 - Peak queue of 2 vehicles waiting occurred once
- ii OTR Surrey Downs
 - "Starter gate" arrangement of fuel points
 - 0% and 6.4% of vehicles queued in the AM and PM peak respectively
 - Peak queue of 2 vehicles waiting occurred twice
- iii OTR Thorngate
 - "Domino" arrangement of fuel points
 - 0% and 20% of vehicles queued in the AM and PM peak respectively
 - Peak queue of 2 vehicles waiting occurred 6 times

Therefore, site designs should allow sufficient space for at least to **1 vehicles to queue at each pump aisle where the fuel pumps are in a "starter gate" arrangement**, and at least to **2 vehicles to queue at each pump aisle where the fuel pumps are in a "domino" arrangement**.

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On The Run Belair

1 Main Road, Belair

Environmental Noise Assessment

S4928C2

October 2018

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Environmental Noise Assessment

Document Reference : S4928C2

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1 INTRODUCTION

An environmental noise assessment for the proposed redevelopment of the existing integrated service facility at 1 Main Road, Belair (DA 080/E021/16) was conducted and summarised in the Sonus Report “S4928C1”, dated 6 June 2016 (the Original Assessment).

A variation to the approved facility is being sought to incorporate the following changes:

- a revised general site layout; and,
- the addition of an outdoor seating area associated with the fast food service.

Besides the potential noise from patrons in the outdoor seating area, there are no additional noise sources introduced to the site as part of the variation.

This assessment has been conducted to ensure that the changes will not cause a nuisance or impair the amenity at the surrounding dwellings, and has been based upon the following:

- ADS Architects drawing “14/JN1186.2/sk01” through “14/JN1186.2/sk05” (inclusive), all dated 21 September 2018;
- an inspection of the existing site and noise measurements of the operation of the existing automatic car wash facility and vacuum unit, conducted on 20 May 2016;
- noise measurements of car park activity, vehicle movements, automatic and manual car wash bays and associated plant, vacuum bays and mechanical plant at other similar facilities;
- noise measurements of patrons in dining areas; and,
- low level background music (music at a level which does not require patrons to raise their voice to be heard) being played inside the service/control building and no speakers outside (and on that basis, music has not been considered further in this assessment).

The closest dwellings to the site front Main Road, Sheoak Road and Russell Street (refer to the figure in Appendix A). The existing acoustic environment of the area is generally dominated by traffic on these roads; however the influence is reduced late in the evening and at night when there is significantly less traffic.

2 ASSESSMENT CRITERIA

Assessment criteria for the proposed development have been established in the Original Assessment, which are consistent with the requirements of the *Environment Protection (Noise) Policy 2007* (the Policy) and the relevant provisions of the City of Mitcham Development Plan.

The assessment criteria are summarised below:

Noise Source	Assessment Criteria	
	Daytime	Night-time
New (Drive-through facility, manual car washes and automatic car wash for period between 12 am and 6am, patrons in outdoor seating area)	47 dB(A) L_{eq}	40 dB(A) L_{eq} 60 dB(A) L_{max}
All (New noise sources above, mechanical services plant, automatic car wash between 6am and 12am, vacuum unit, vehicle movements, car park activity and fuel delivery)	52 dB(A) L_{eq}	45 dB(A) L_{eq}
Waste Collection	Activity to only occur between the hours of 9am and 7pm on Sundays or public holidays, and between 7am and 7pm on any other day, except where it can be shown that the maximum (L_{max}) noise level from such activity is less than 60 dB(A).	

Note: The average noise levels (L_{eq}) above includes a 5 dB(A) penalty for modulation.

3 ASSESSMENT

Noise levels at the dwellings in the vicinity of the development have been predicted based on a range of previous noise measurements, manufacturer’s data and observations at other similar facilities, which include:

- mechanical plant serving the control building;
- car park activity such as people talking as they vacate or approach their vehicles, the opening and closing of vehicle doors, vehicles starting, vehicles idling, and vehicles moving into and accelerating away from their park position;
- movements of general vehicles and fuel delivery trucks on site;
- drive-through activity such as people ordering at the customer order device, queuing and idling while waiting for an order, collecting and paying for orders at the window, and vehicle movements through the drive-through;
- wash and dry cycles for an automatic car wash, manual car wash bay and operation of the associated plant room;
- operation of a standalone vacuum unit; and,
- patrons in dining areas.

The sound power levels for the noise sources and activities above are provided in Appendix B.

The predictions have been based on the following operational assumptions for the level of activity that occur in any 15 minute¹ period:

<i>Day Time (7am to 10pm)</i>	<i>Night Time (10pm to 7am)</i>
<ul style="list-style-type: none"> • continual use of the automatic car wash ; • continual use of the high pressure spray in all three manual car wash bays; • continual use of the vacuum; • continual use of the drive through facility; • 24 patrons within the outdoor seating area; • continuous operation of mechanical plant on the control building; • car park activity associated with one vehicle in each of the designated car park bays, the vacuum bay and fuel filling bays; and, • a fuel delivery truck attending to site. 	<ul style="list-style-type: none"> • a single use of the automatic car wash; • continual use of the high pressure spray in a manual car wash bay; • continual use of the vacuum bay; • 15 cars using the drive through facility; • 24 patrons within the outdoor seating area; • continuous operation of mechanical plant on the control building; • car park activity associated with one vehicle in each of the designated car park bays, the vacuum bay and fuel filling bays; and, • a fuel delivery truck attending to site.

¹ Default assessment period of the Policy.

Based on the predictions, the following acoustic treatment measures are recommended for the site in order to achieve the noise criteria of the Policy:

Mechanical Services Plant to the Control Building

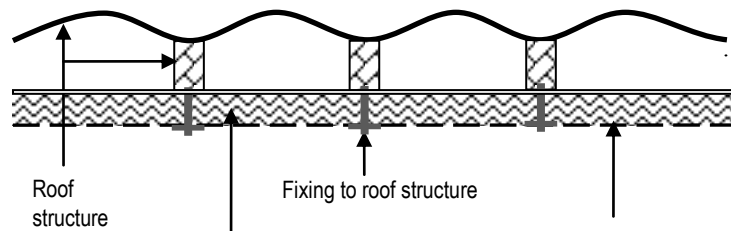
- Locate all mechanical services plant and equipment within the designated area on the control building roof, behind the mechanical plant screen within the area shaded yellow on the figure in Appendix C.
- Ensure that the mechanical plant screen is constructed to a height that is at least equivalent to the tallest piece of equipment it surrounds. The screen should be sealed airtight along all vertical joins and be constructed from sheet steel or a material with an equivalent or greater surface density. The bottom of the screen should continue as close as practicable to the roof deck below. It is noted that a small gap may be left between the bottom of the screen and the roof deck, as may be required for drainage.
- Ensure a proprietary in-line attenuator is incorporated to the discharge side of any significant exhaust fan.

It is noted that the above extent of treatment has been based on typical equipment selection at other similar OTR facilities, as listed in Appendix B. These treatment measures should be reviewed during the detailed design phase of the project, once final equipment selections have been made.

Automatic Car Wash

- Restrict the maximum opening height of the automatic car wash entry to 2.5m and exit to 3m. The material used for the infill should have a surface density of at least 8kg/m^2 (such as 6mm thick compressed fibre cement sheet or 10.38mm thick laminated glass) and should be sealed airtight at all junctions.
- Install glass doors to the entry and exit of the automatic car wash that automatically close during operation of the car wash (i.e., closed before the start of the wash cycle, and do not open until the wash cycle, including any drying, has ceased). The doors should be constructed from 10.38mm thick laminated glass (or a material with a higher surface density in kg/m^2) and be sealed as close to airtight² as possible at all junctions when closed.
- Incorporate 50mm thick acoustic insulation (having minimum density of 32kg/m^3) to the underside of the roof structure, in accordance with Detail 1.

² Achieving an airtight seal around the doors may not be practicable due to operational limitations, however a reasonable seal can be provided with the use of brush seals around the gaps, as incorporated to the glass door system at the On The Run Hyde Park facility.



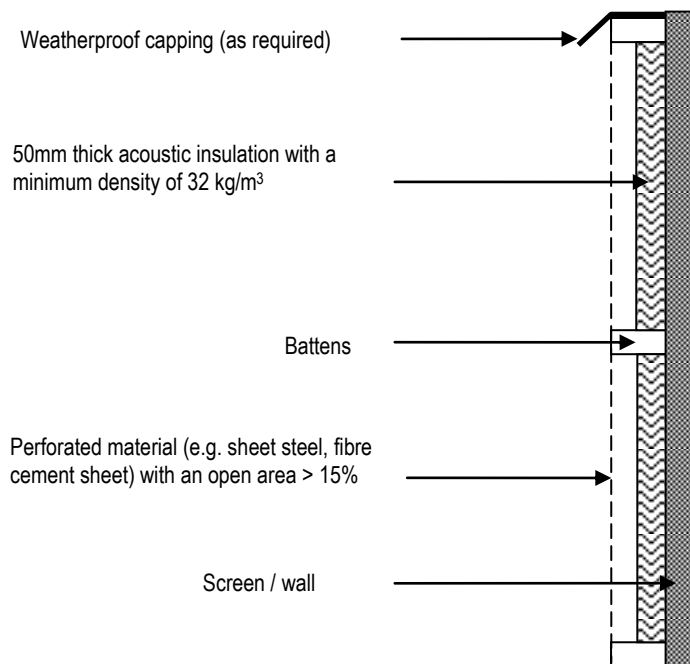
50mm thick acoustic insulation with a minimum density of 32 kg/m³. The insulation should be installed to the full extent of the ceiling. Other materials such as “Pyrotek Reapor” can be used in lieu of the insulation.

Perforated material with an open area greater than 15% spaced from the insulation to provide weatherproofing. Examples of the products are perforated sheet steel, slotted timber, etc.

Detail 1: Underside of roof insulation (section view).

Manual Car Wash Bays

- Extend the height of the walls shown as purple in Appendix C to a minimum 2.5m high.
- Install 2.5m high “nib” walls to the bays for the extent shown as red in Appendix C.
- Incorporate 50mm thick acoustic insulation (having minimum density of 32 kg/m³) to the underside of the roof structure, in accordance with Detail 1.
- Install 50mm thick acoustic insulation (having minimum density of 32 kg/m³) to the internal walls of the bays and to the nib walls (shown as by the green lines in Appendix C) in accordance with Detail 2. The insulation should extend from 1m above the ground to the full height of the wall.



Detail 2: Acoustic insulation on screens / walls (section view).

Vacuum

- Ensure that the 2.1m high 'Colorbond' fence along the northern boundary (shown as the orange line in Appendix C) is constructed airtight at all junctions including with the ground and be lined with acoustic insulation on the facility side in accordance with Detail 2.

Drive-through Facility

- Ensure that the 1.8m high 'Colorbond' fence along the along the northern boundary (shown as the blue line in Appendix C) is constructed airtight at all junctions including with the ground.
- Reduce the volume of the customer order device to as low as practicable.

Outdoor Seating Area

- Incorporate 50mm thick acoustic insulation (having minimum density of 32 kg/m³) to the underside of the covered area roof for the extent shown as shaded orange in Appendix C, in accordance with Detail 1.
- Restrict access to the outdoor seating area to daytime only (7am to 10pm).

Fuel Deliveries

- Restrict the hours for fuel delivery to the site to the daytime hours of the Policy (7am to 10pm).

Waste Collection

- Restrict the hours for waste collection from the site to the hours of Division 3 of the Policy. That is, only between the hours of 9am and 7pm on a Sunday or public holiday, and 7am and 7pm on any other day.

Others

- Reduce noise from alarms produced by equipment (such as tyre filling stations, car wash pay station and vacuum bays) as far as practical.
- Ensure that the ground surface is smooth and all inspection points, grated trenches, etc. are correctly fixed to remove the potential for impact noise being generated when driven over.

With the above acoustic measures in place, the highest predicted noise levels (L_{eq}) at any dwelling achieve the relevant requirements of the Policy, as summarised in the table below:

Noise Source	Policy Criteria, dB(A)		Highest Predicted Noise Level, dB(A)	
	Day	Night	Day	Night
New noise sources	47	40	46	40
All noise sources	52	45	48	45

Note: A 5 dB(A) penalty for noise modulation has been accounted for in the above.

The instantaneous maximum noise levels (L_{max}) at the surrounding dwellings from new noise sources at the site have also been predicted based on measurements conducted at a variety of different similar sites, including:

- KFC Commercial Road Seaford;
- McDonalds Trinity Gardens;
- Hungry Jacks Mt Gambier;
- Coromandel Baptist Church;
- McDonalds Kings Park;
- Sturt Living Stage 1;
- Yum Sing Express;
- Mary Street Unley; and,
- Q Convenience South Plympton.

Based on the predictions, the maximum noise levels from the site will be less than 60 dB(A) at any dwelling in the vicinity of the site, and therefore achieve the requirement of the Policy.

4 CONCLUSION

An environmental noise assessment has been made of the revised layout and outdoor seating area addition at the proposed integrated service facility redevelopment at 1 Main Road, Belair.

The assessment considers noise at the closest dwellings from:

- the new noise sources at the facility, comprising the manual car wash bays, the drive through, and patrons in the outdoor seating area; and,
- the modified existing noise sources at the facility, comprising the mechanical plant, the automatic car wash and plant room, the standalone vacuum unit, vehicle movements and car park activity within the site, rubbish collection and fuel deliveries.

Noise predictions have been made and assessed against criteria developed in accordance with the *Environment Protection (Noise) Policy 2007*.

Acoustic treatment measures have been recommended for noise sources at the facility, utilising specific design features that have been incorporated at other operational sites. With the recommended acoustic treatment measures in place, the noise from the development at the dwellings is predicted to achieve the assessment criteria.

Based on the above, it is considered that the proposal will not cause a nuisance or impair the amenity of the locality, thereby achieving the relevant provisions of the Mitcham Council Development Plan.

APPENDIX A: SITE LOCALITY

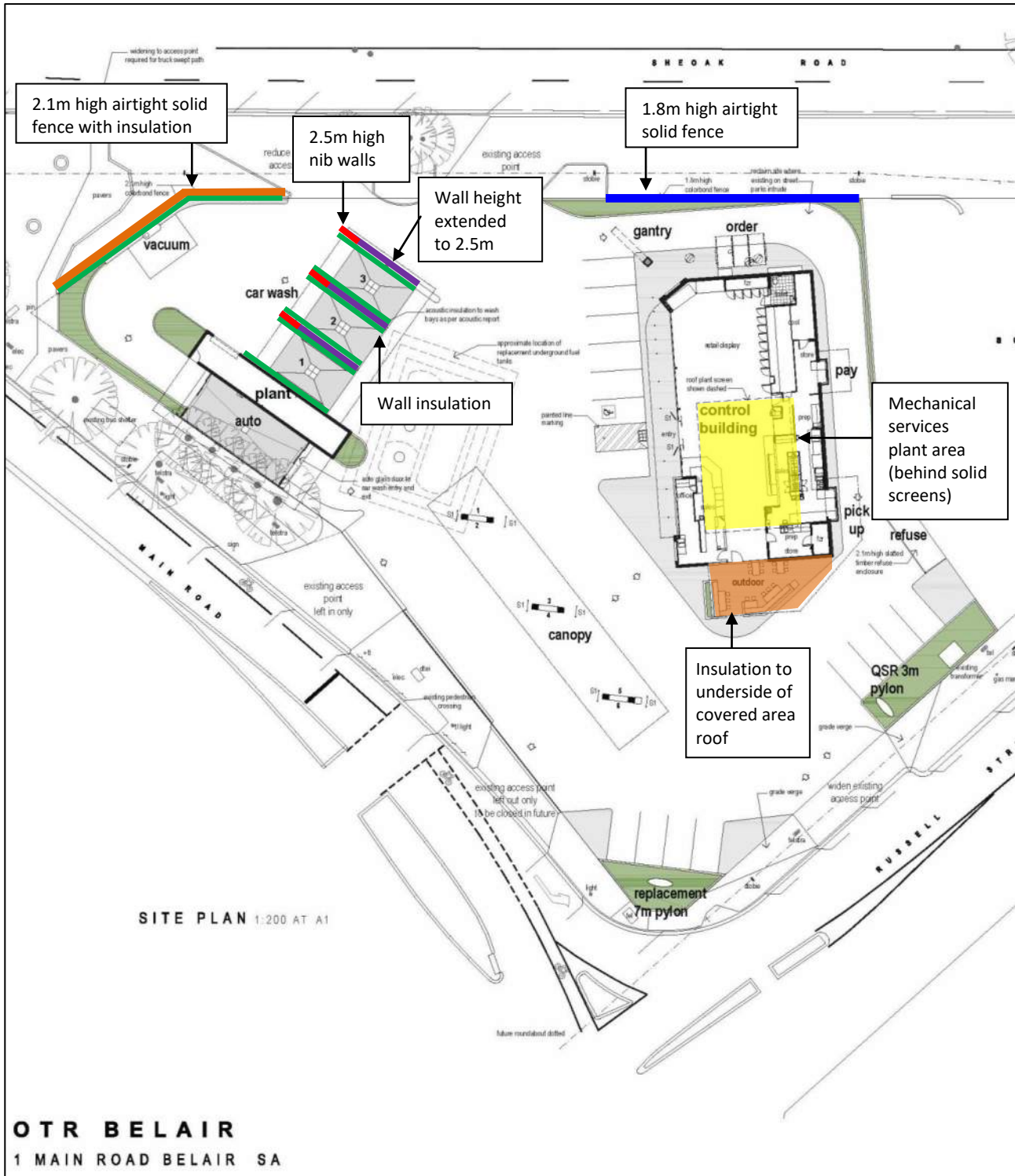


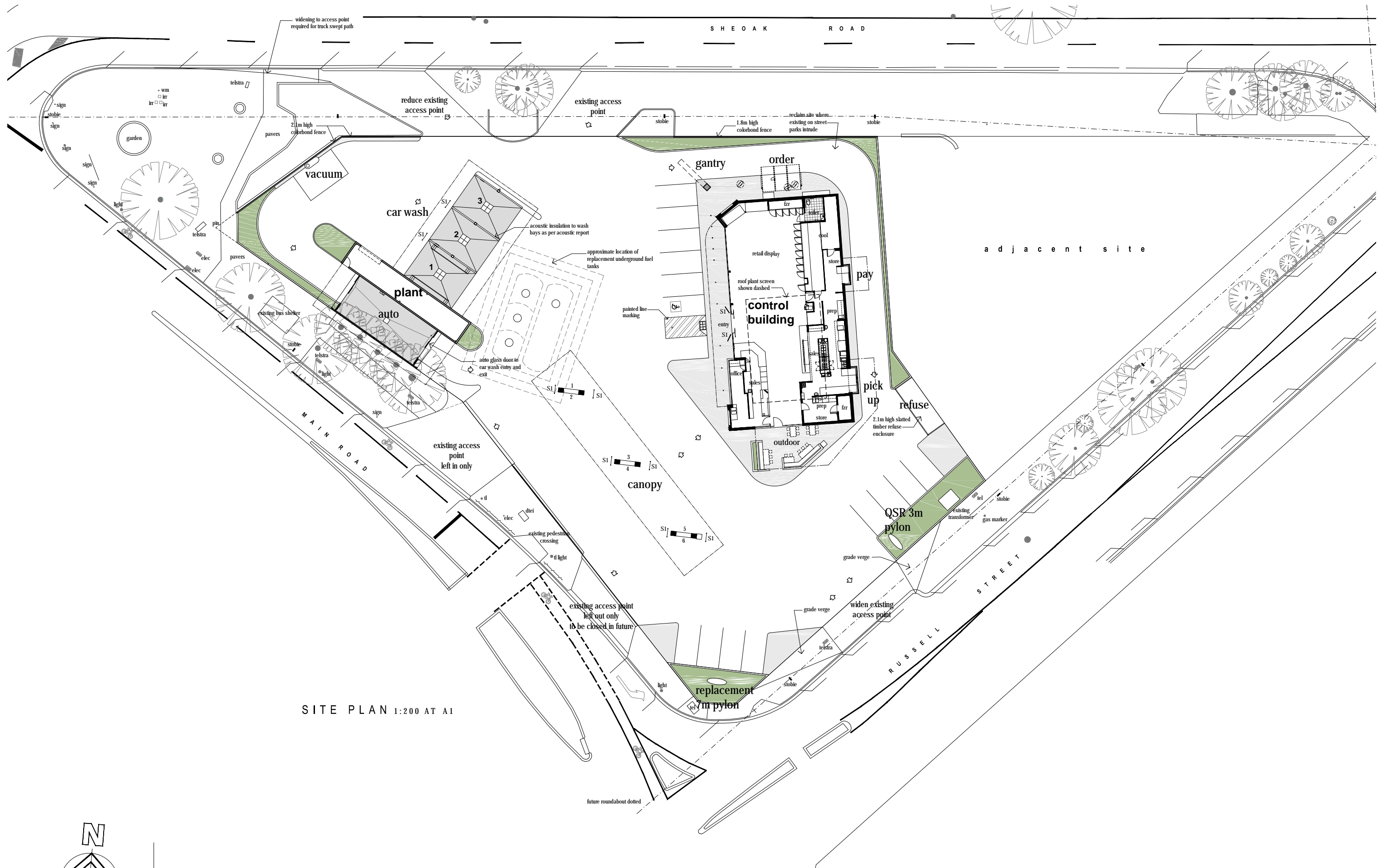
APPENDIX B: NOISE SOURCES AND ASSOCIATED NOISE LEVEL DATA

Equipment/Activity		Noise Level
Site Vehicle Activity	General car park activity	83 dB(A) L_w
	Idling car	75 dB(A) L_w
	Moving car	82 dB(A) L_w
	Moving fuel truck	96 dB(A) L_w
Mechanical Plant	Kitchen exhaust fan with attenuator - AP0714AP10/14	80 dB(A) L_w
	Kitchen exhaust fan with attenuator - AP0312AP10/22	80 dB(A) L_w
	Air conditioning unit - OPA186RKTGH	76 dB(A) L_w
	Air conditioning unit - OPA201RKTGH x 2 units	76 dB(A) L_w
	Air conditioning unit - OPA370RKTGH	81 dB(A) L_w
	Evaporative cooling unit - RPA400	73 dB(A) L_w
	Refrigeration condenser unit – SCA300C	76 dB(A) L_w
	Refrigeration condenser unit – PPH028LA1-2	71dB(A) L_w
	Refrigeration condenser unit – PPH050LA1-2 x 4 units	75 dB(A) L_w
Drive-through	Customer ordering device	78 dB(A) L_w
	Pay/Pickup window	75 dB(A) L_w
Carwash	Automatic carwash – washing cycle	87 dB(A) $L_{p,opening}$
	Automatic carwash – drying cycle	92 dB(A) $L_{p,opening}$
	Manual carwash – high pressure spraying	93 dB(A) L_w
	Plant room	78 dB(A) $L_{p,inside}$
Vacuum	Vacuum no load	87 dB(A) L_w
	Vacuum loaded	82 dB(A) L_w
Outdoor Area	Patron	76 dB(A) L_w

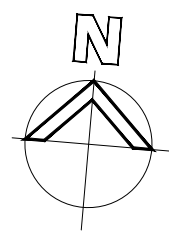
$L_{p,opening/inside}$ – noise level at opening or inside enclosure; L_w – sound power level.

APPENDIX C: EXTENT OF ACOUSTIC TREATMENT

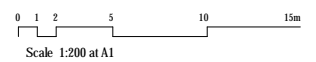


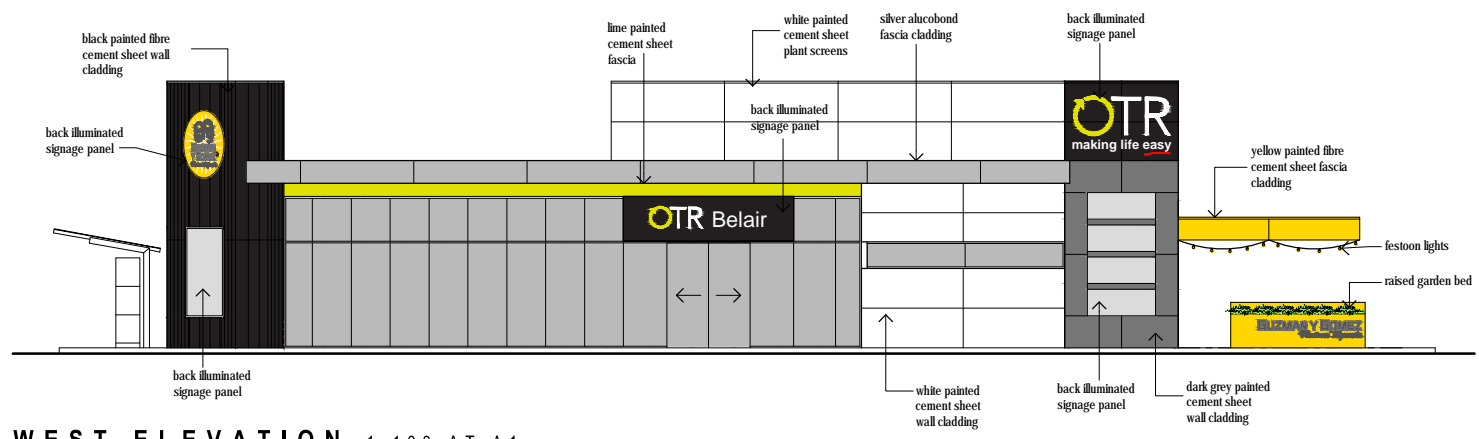


SITE PLAN 1:200 AT A1

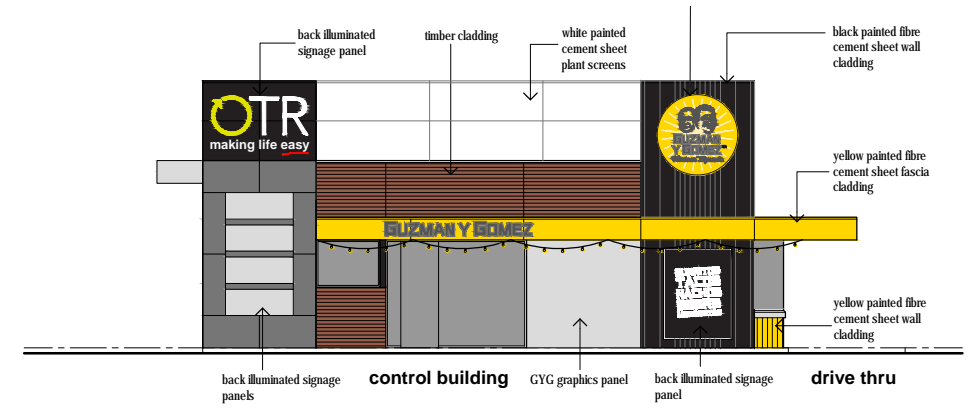


OTR BELAIR
1 MAIN ROAD BELAIR SA

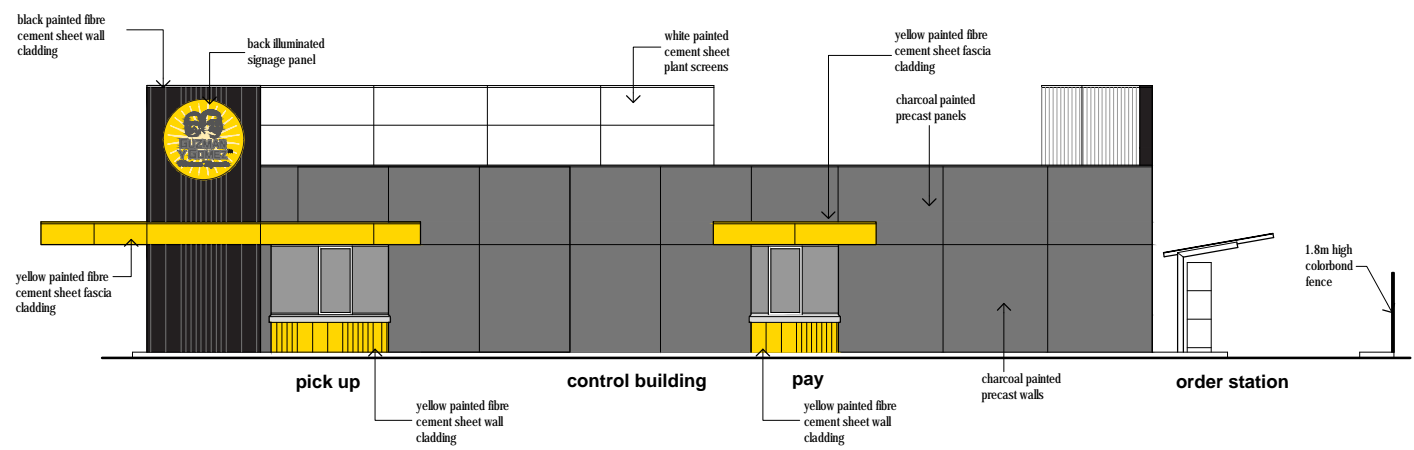




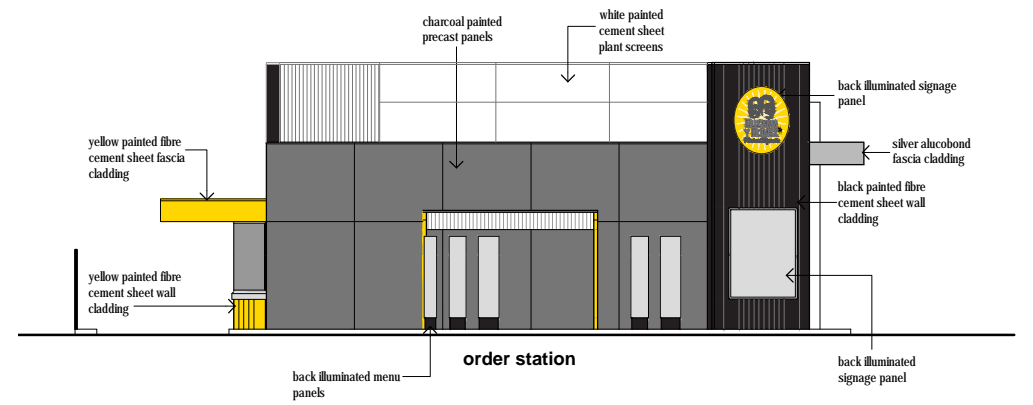
WEST ELEVATION 1:100 AT A1
CONTROL BUILDING



SOUTH ELEVATION 1:100 AT A1
CONTROL BUILDING
(outdoor dining removed for clarity)

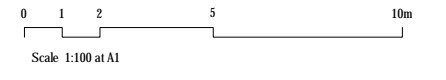


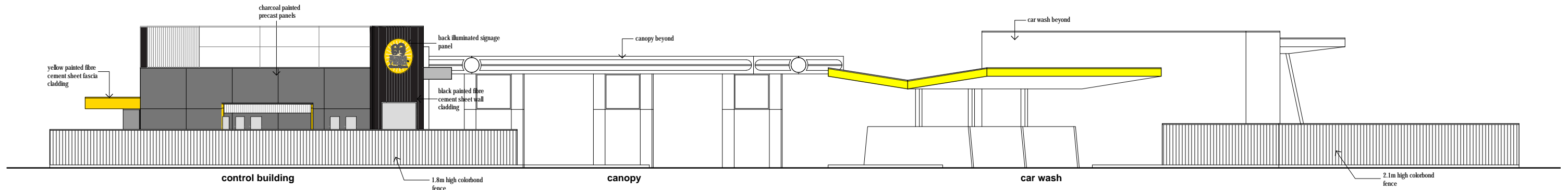
EAST ELEVATION 1:100 AT A1
CONTROL BUILDING



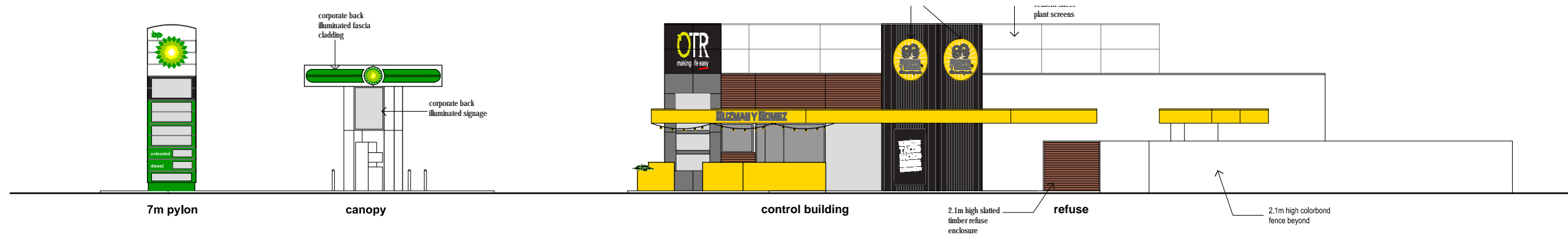
NORTH ELEVATION 1:100 AT A1
CONTROL BUILDING

OTR BELAIR
1 MAIN ROAD BELAIR SA

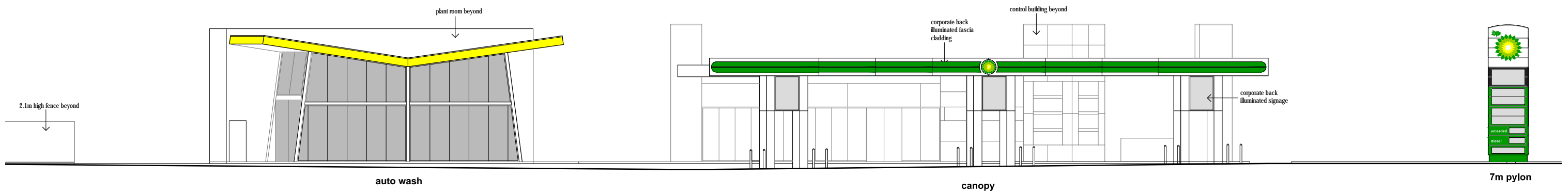




NORTH ELEVATION 1:100 AT A1
SHEAK ROAD

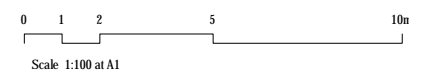


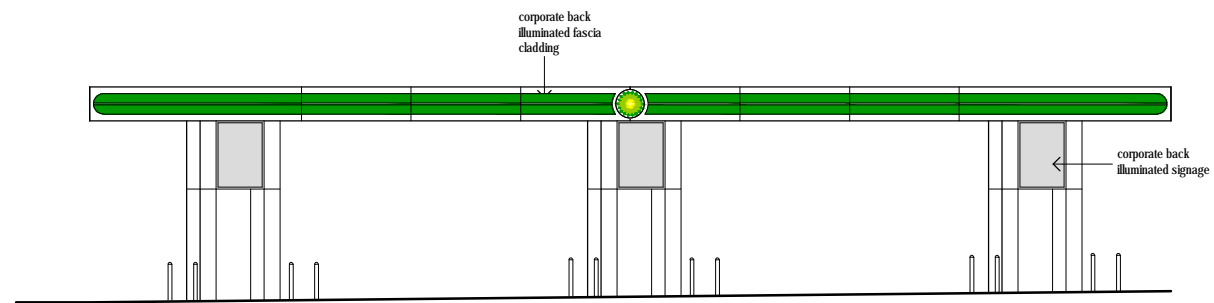
SOUTH EAST ELEVATION 1:100 AT A1
RUSSELL STREET



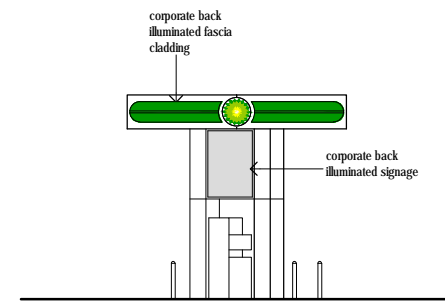
SOUTH WEST ELEVATION
1:100 AT A1
MAIN ROAD

OTR BELAIR
1 MAIN ROAD BELAIR SA



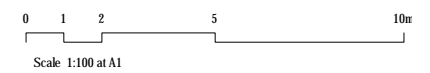


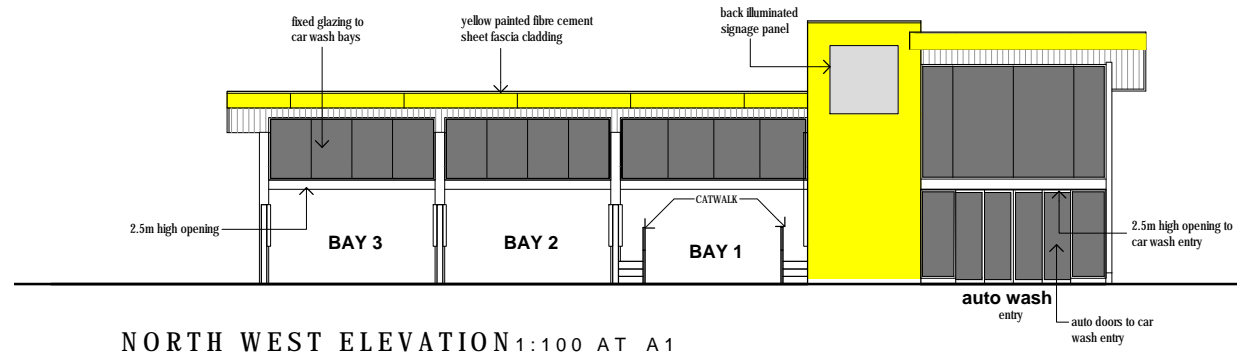
SOUTH WEST ELEVATION
1:100 AT A1



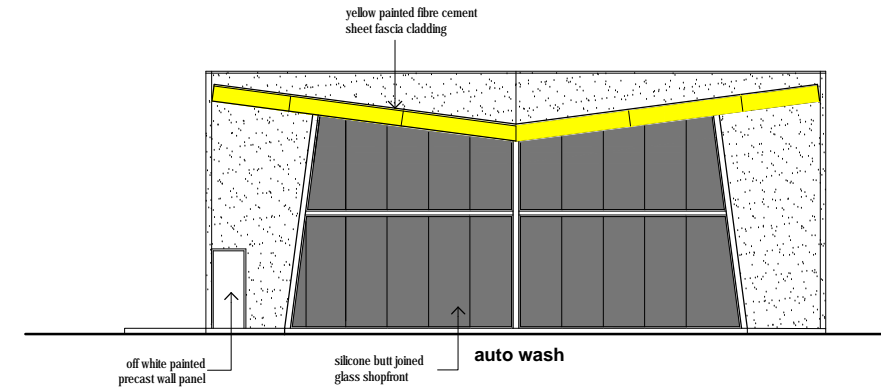
SOUTH EAST ELEVATION 1:100 AT A1

OTR BELAIR
1 MAIN ROAD BELAIR SA

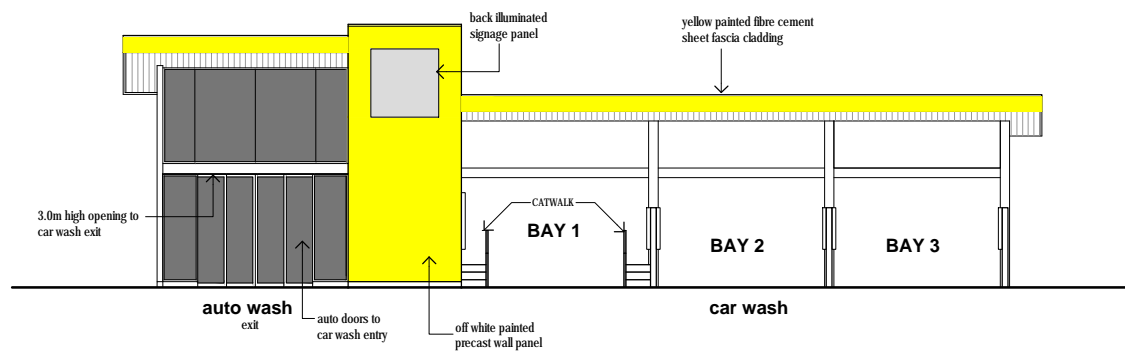




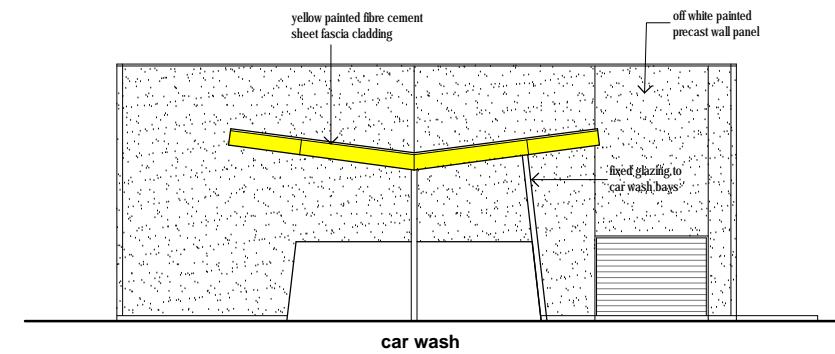
NORTH WEST ELEVATION 1:100 AT A1



SOUTH WEST ELEVATION
1:100 AT A1



SOUTH EAST ELEVATION 1:100 AT A1



NORTH EAST ELEVATION
1:100 AT A1

OTR BELAIR
1 MAIN ROAD BELAIR SA

